

# erluna

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## circular society

14th June 2022



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beautifully lit, for life



## at Orluna, we're lighting the way when it comes to circular society

Over the last four years we have been quietly reformulating our whole business to become fully circular.

So when any of our lights reach the end of their life, rather than recycle them, they are collected, repaired and re-used using our simple reuse scheme.

This is much better for the environment. Saving virgin materials also helps reduce global inequalities and local communities.

With our 20-year design life, and full spares and repairs service, your project will remain beautifully lit for life.

### Andrew Kilborn

Managing Director





## what's the problem?

The world has pressing environmental and societal problems, like pollution and global warming.

But the problem is much wider than this. We live in an increasingly unstable world caused by extreme inequality, both within individual countries, and, even more starkly, between the developed and developing world.

One important contributor to the problem is the single use of virgin materials.

## the role of virgin materials

Most manufactured products use finite virgin materials such as copper or oil.

In developed countries we use virgin materials thoughtlessly. Our rampant single-use consumerism extracts virgin materials from the land and sea, which we then process into single-use products such as takeaway cartons or light fittings, before disposing them in recycling or landfill.

There is a huge environmental cost to this throwaway consumerism. And, there is a further cost to developing countries. Virgin materials are scarce. Every time the developed world uses finite virgin materials we drive up the price, making them less affordable, ultimately restricting the developing world's ability to progress.

The extraction and processing of virgin materials is increasing inequalities across the world, as well as being perhaps the largest cause of environmental degradation.





## how did we get here?

The race to become wealthier and satisfy immediate consumer needs has meant that we, in the developed world, have moved from a repair model to a short-term, throwaway consumer mentality.

We use a product once and then throw it away. This has suited manufacturers as well as consumers. Manufacturers like this linear throwaway manufacturing model as they can sell more products – made cheaply overseas – to consumers who are addicted to cheap sticker prices.

The problem is that the planet and poorer countries are paying the price.

*"We have a finite environment—the planet. Anyone who thinks that you can have infinite growth in a finite environment is either a madman or an economist."*

David Attenborough





## single-use society

Most products which we consume, from plastic mineral water bottles to light fittings, are designed and made using the linear throw-away manufacturing model.

Scarce virgin materials are taken out the ground, processed, packaged and the transported to the consumer. We use the product only once and then dispose of it.

This single use is prevalent and called linear manufacturing:



single-use linear model - scarce materials are taken out of the ground, processed, packaged, transported and then disposed of in landfill. This generates pollution and waste as well as using up our finite resources.



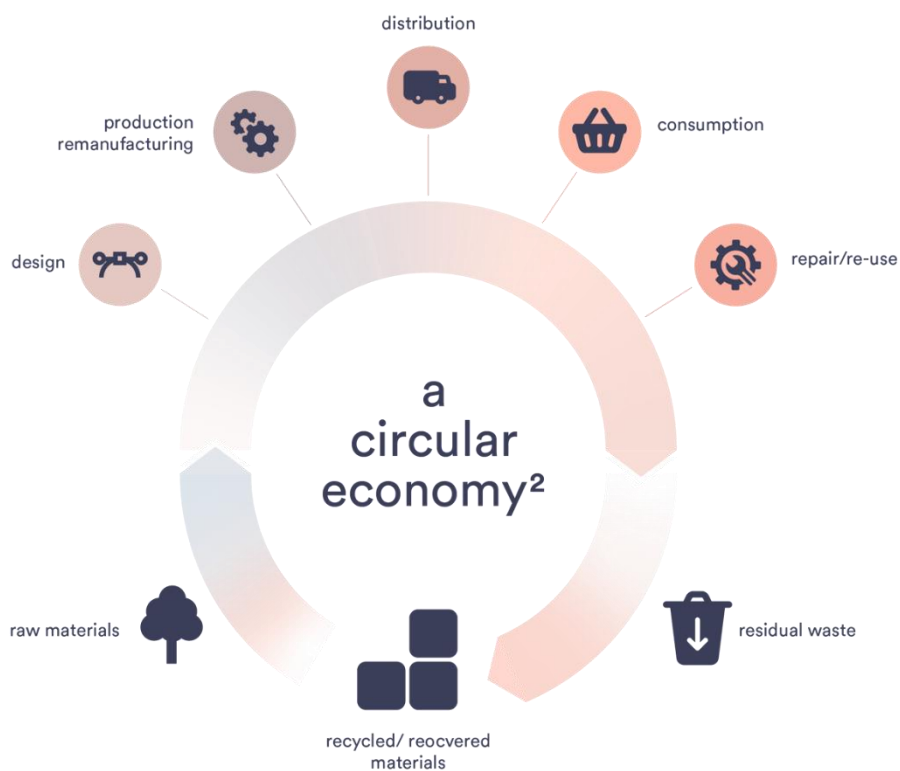


## circular society

The circular model recognises that we must value virgin materials and not treat them as single-use materials.

In practice this means using less virgin materials when manufacturing products, but more importantly, designing products to last much longer, with spare parts and which are fully repairable.

The aim is that the materials have a longer life and that the materials re-enter the cycle when no longer needed, meaning we use less virgin materials.



*less scarce materials are taken out of the ground and materials repeatedly circle around the manufacturing chain meaning less processing, packaging, transport and disposal.*

The circular model gives an immediate and substantial improvement by tackling the underlying issue – single-use consumption of virgin materials.



## orluna is a circular business

Since 2018, we have whole-heartedly embraced circular economy principles as we believe that this is the best single way to make a tangible immediate difference.

Over the last four years we have, quietly, reformulated our business. We have redesigned supply chains, materials, product design and collection, so that, our company now operates fully on circular economy principles.

All our of our products are designed for circularity.

## circular product





## A | less virgin materials

We have re-engineered our product range to use less virgin materials through changes in design as well as increasing the use of recycled materials.

Recycled materials are used across our business and we give a weighted average recycled % across our whole business (based on year to March 2022 product mix)

## B | repair

All our products are designed to be collected and repaired.

This increases the product life length so that the embodied carbon and other pollution inevitably generated through the manufacture of the products is spread across a useful life of 20 years – rather than the typical five years.

Our “circular product infinity loop” label shows the contractor that the fitting can be repaired and sets out how products are to be returned to Orluna for a quick, easy and economic repair.

Spares are typically despatched within 24 hours.



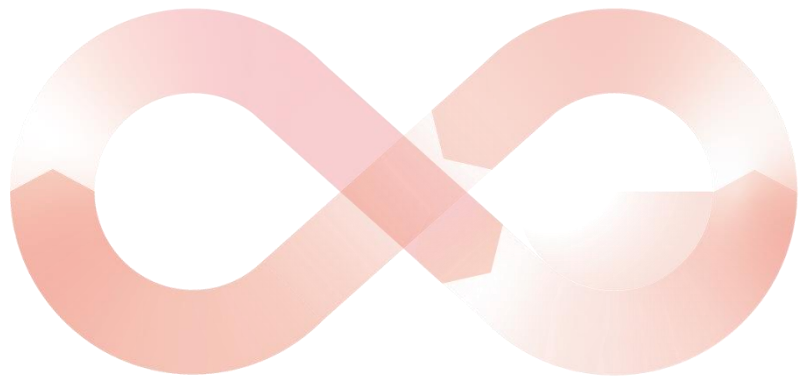




## C | reuse (collection, renew & supply)

At end-of-life, all our products have a process where they are collected, refurbished and tested. They then enter standard stock to return to the market as “new” products.

1. When an old Orluna light comes to the end of its life, or is faulty, instead of throwing it away, we kindly ask you to return it to us.
2. Once we've received the unwanted or faulty fitting, it's dismantled, repaired and renewed with a new LED and PCB.
3. The fully repaired and tested product enters back into our stock – with a brand new warranty.
4. The 'new' light fitting is despatched to a new customer.



*using one of 14,000  
Post Office parcel  
boxes.*





## next steps

It is time to be hopeful.

Most consumer products are made in a far corner of the world through long opaque supply chains. Let's reject this throwaway model.

An immediate move to a circular society is the largest single move to achieving greater sustainability as well as leaving more virgin materials for developing countries and help reduce inequalities.

Furthermore, the repair model is more cost effective in the long term.

Let's make radical and immediate change!

We offer a service where we work with designers to share the manufacturer perspective, to help meet the client's environmental needs. This includes TM66, EPDs as well as CPDs. Please ask by contacting [akilborn@orluna.com](mailto:akilborn@orluna.com)



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circular society  
appendices





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appendix 1

less virgin materials



## appendix 1

# less virgin materials

The extraction, processing, transport of virgin materials is a root cause of much environmental degradation.

This is not only bad for the environment but it also creates inequality.

The unnecessarily excessive use of finite virgin materials by the developed world leaves less virgin materials for the developing world.

Our approach to reduce virgin materials is to change product design and also to increase recycled material content.





appendix 1

# recycled material content – a typical downlight

The table below shows a breakdown of the components of a typical Orluna downlights. This shows how we have changed components to achieve only 16.5% virgin material on this product.

		weight (grams)			
		total	recycled	recycled	
glass lens	<b>recycled</b> bora-silicate	12.0	12.0	100%	
reflector	<b>recycled</b> ppma	6.9	6.9	100%	
reflector finish	vacuum metalised	0.1	0.0	0%	
engine body	<b>recycled</b> polycarbon	14.1	11.3	80%	
engine band	virgin rubber	0.9	0.0	0%	
lv cable core	virgin copper	4.0	0.0	0%	
lv cable insulation	virgin plastic	5.0	0.0	0%	
pcb	electrical	3.9	0.0	0%	
LED	electrical	0.1	0.0	0%	
heatsink	<b>recycled</b> aluminium	103.0	103.0	100%	
heatsink finish	env. friendly anodis.	0.1	0.0	0%	
label	virgin plastic	0.1	0.0	0%	
baffle	<b>recycled</b> aluminium	21.5	21.5	100%	
baffle paint	EU reg paint	2.0	0.0	0%	
shield	<b>recycled</b> polycarbon	6.0	4.8	80%	
cape	virgin rubber	5.0	0.0	0%	
springs	virgin steel	3.0	0.0	0%	
screws for springs	virgin steel	1.0	0.0	0%	
screws for tilt	virgin steel	1.0	0.0	0%	
circlip	virgin steel	4.0	0.0	0%	
outer bezel	<b>recycled</b> aluminium	21.0	21.0	100%	
outer bezel paint	EU reg paint	1.5	0.0	0%	
		216.2	180.5	<b>83.5%</b>	means
				<b>recycled</b>	<b>16.5%</b>
					<b>virgin</b>



appendix 1

recycled material content – across our range

	recycled		recycled
arello	87.4%	nikko twin	91.1%
camber adjustable	89.0%	one adjustable	83.5%
camber fixed	89.9%	one fixed	88.4%
camber mini adjustable	77.8%	one mini adjustable	71.2%
camber mini fixed	80.3%	one mini fixed	73.3%
cero 100l /100lp	87.7%	otto adjustable	85.2%
cero orgin	72.1%	suri mini adjustable	73.4%
clarin	89.6%	suri mini fixed	75.5%
cuadro adjustable	83.4%	timo adjustable	85.2%
cuadro twin	84.4%	tiyo adjustable	85.3%
curve adjustable	88.3%	tiyo fixed	88.1%
curve fixed	90.8%	true adjustable	88.8%
curve mini adjustable	74.1%	true fixed	90.6%
curve mini fixed	76.2%	true twin	88.8%
curve recessed fixed	92.2%	vira adjustable	81.4%
dino adjustable	84.3%	otto fixed	88.0%
dino fixed	90.7%	riva adjustable	81.4%
dino twin	86.0%	riva twin	83.8%
duet	91.1%	suri adjustable	83.5%
fade adjustable	82.5%	suri fixed	88.4%
fade fixed	86.1%	vira twin	83.8%
fade mini adjustable	77.5%	air butterfly	89.8%
fade mini fixed	79.6%	air fixed	93.5%
fade twin	87.9%	air integral	95.7%
fina adjustable	85.0%	air pendant	74.8%
fina fixed	87.6%	air rose	94.3%
jade adjustable	87.9%	air screw	94.3%
jade fixed	91.4%	airtrack	82.5%
look adjustable	87.8%	arto	70.4%
look twin	87.1%	elia	67.9%
mina adjustable	84.9%	frame	68.3%
mina fixed	84.8%	ori	58.3%
muro fixed	88.6%	vara	71.9%
nikko adjustable	91.3%	alta	96.2%





appendix 1

recycled material content – across our range

	recycled		recycled
alta micro	93.0%	toto micro	91.7%
alta mini	95.7%	toto mini	95.3%
alta plus	98.2%	toto plus	98.1%
alta zero	90.4%	toto zero	88.3%
mite fixed	88.3%	vio square	80.3%
toto	95.9%	vio tall	77.7%

The table above covers all products which Orluna manufactures.



# appendix 1 recycled material content – by component

recycled %	raw material recycled % (by component)		Weight (grams)																						TOTAL WEIGHT		WHOLE PRODUCT %							
	100%	0%	100%	80%	0%	100%	80%	0%	100%	80%	0%	100%	80%	0%	100%	80%	0%	100%	80%	0%	100%	80%	0%	100%	80%	0%								
amber adjustable	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	21.5	1.5	6.0	5.0	0.0	0.0	1.0	4.0	111.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	323.7	89.0%
amber fixed	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	46.0	1.5	0.0	5.0	0.0	0.0	1.0	4.0	111.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	342.2	89.9%
clarin	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	0.0	0.0	0.0	3.0	1.0	0.0	0.0	0.0	56.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	211.2	89.6%	
cuadro adjustable	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	4.0	1.5	20.0	5.0	3.0	1.0	1.0	4.0	36.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	226.7	83.4%	
cuadro twin	24.0	13.8	0.2	28.2	1.8	8.0	10.0	7.8	0.2	206.0	0.2	0.2	8.0	3.0	40.0	10.0	6.0	2.0	2.0	8.0	97.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	477.9	84.4%	
curve adjustable	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	20.0	1.5	0.0	5.0	3.0	1.0	1.0	0.0	100.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	257.2	88.3%	
curve fixed	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	0.0	0.0	0.0	0.0	4.0	1.0	0.0	0.0	100.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	256.7	90.8%	
curve recessed fixed	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	46.0	1.0	0.0	3.0	1.0	0.0	0.0	0.0	100.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	302.7	92.2%	
dimo adjustable	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	15.0	1.0	15.0	5.0	3.0	1.0	1.0	4.0	20.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	235.2	84.3%	
dimo fixed	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	22.0	1.5	0.0	0.0	3.0	1.0	0.0	0.0	74.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	252.7	90.7%	
dimo twin	24.0	13.8	0.2	28.2	1.8	8.0	10.0	7.8	0.2	206.0	0.2	0.2	30.0	2.0	30.0	0.0	6.0	2.0	2.0	8.0	62.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	444.4	86.0%	
duet	0.0	22.0	0.0	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	0.0	0.0	0.0	0.0	3.0	1.0	0.0	0.0	99.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	258.2	91.1%	
fade adjustable	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	21.5	1.5	6.0	5.0	0.0	0.0	1.0	4.0	82.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	314.2	82.5%	
fade fixed	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	22.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	99.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	315.7	86.1%	
fade twin	24.0	13.8	0.2	28.2	1.8	8.0	10.0	7.8	0.2	206.0	0.2	0.2	43.0	3.0	12.0	10.0	0.0	0.0	2.0	8.0	164.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	589.4	87.9%	
fin adjustable	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	8.0	1.0	6.0	0.0	3.0	1.0	1.0	4.0	20.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	195.2	85.0%	
fin fixed	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	15.0	2.0	0.0	0.0	0.0	1.0	0.0	0.0	22.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	194.2	87.6%	
fin twin	24.0	13.8	0.2	28.2	1.8	8.0	10.0	7.8	0.2	206.0	0.2	0.1	30.0	2.0	0.0	0.0	3.0	1.0	0.0	0.0	103.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	298.7	87.9%	
jade adjustable	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	21.5	2.0	6.0	5.0	3.0	1.0	1.0	4.0	103.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	291.2	91.4%	
jade fixed	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	30.0	2.0	0.0	0.0	3.0	1.0	0.0	0.0	103.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	282.7	87.8%	
look adjustable	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	22.0	1.5	15.0	0.0	4.0	2.0	1.0	4.0	63.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	282.7	87.8%	
look twin	24.0	13.8	0.2	28.2	1.8	8.0	10.0	7.8	0.2	206.0	0.2	0.2	44.0	3.0	30.0	0.0	8.0	4.0	2.0	8.0	105.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	511.3	87.1%	
mina adjustable	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	22.0	1.5	0.0	0.0	8.0	4.0	1.0	0.0	17.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	221.7	84.9%	
mina fixed	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	22.0	1.5	0.0	0.0	8.0	4.0	0.0	0.0	20.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	206.7	84.8%	
muro fixed	0.0	20.0	0.0	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	0.0	0.0	0.0	0.0	8.0	4.0	0.0	0.0	106.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	271.2	88.6%	
nikko adjustable	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	30.0	2.0	37.0	0.0	0.0	0.0	2.0	4.0	56.0	1.0	35.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	396.2	91.3%	
nikko twin	12.0	6.9	0.2	28.2	1.8	8.0	10.0	7.8	0.2	206.0	0.2	0.2	60.0	4.0	74.0	0.0	0.0	0.0	4.0	8.0	112.0	2.0	70.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	777.5	91.1%	
one adjustable	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	21.5	2.0	6.0	5.0	3.0	1.0	1.0	4.0	21.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	216.2	83.5%	



appendix 1  
recycled  
material  
content – by  
component  
(continued)

raw material recycled % (by component)	Weight (grams)																TOTAL WEIGHT	WHOLE PRODUCT %									
	recycled %	100%	100%	0%	80%	0%	100%	0%	100%	0%	80%	0%	100%	0%	80%	0%											
ori	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	200	120.0	58.3%								
vara	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	200	178.0	71.9%							
camber mini adjustab	0.0	4.4	0.1	100	0.0	4.0	5.0	3.4	0.1	55.0	0.1	0.1	15.0	1.0	2.0	3.0	0.0	0.0	12.0	160.7	77.8%						
camber mini fixed	0.0	4.4	0.1	100	0.0	4.0	5.0	3.4	0.1	55.0	0.1	0.1	15.0	1.0	0.0	0.0	0.0	0.0	12.0	153.7	80.3%						
cero origin	0.0	4.4	0.1	100	0.0	4.0	5.0	3.4	0.1	55.0	0.1	0.1	0.0	0.0	0.0	0.0	2.0	2.0	0.0	12.0	126.7	72.1%					
curve mini adjustable	0.0	4.4	0.1	100	0.0	4.0	5.0	3.4	0.1	55.0	0.1	0.1	15.0	1.0	2.0	3.0	2.0	2.0	1.0	0.0	12.0	145.7	74.1%				
curve mini fixed	0.0	4.4	0.1	100	0.0	4.0	5.0	3.4	0.1	55.0	0.1	0.1	15.0	1.0	0.0	0.0	2.0	2.0	0.0	0.0	12.0	139.7	76.2%				
fade mini adjustable	0.0	4.4	0.1	100	0.0	4.0	5.0	3.4	0.1	55.0	0.1	0.1	15.0	1.0	2.0	3.0	0.0	0.0	1.0	0.0	12.0	149.7	77.5%				
fade mini fixed	0.0	4.4	0.1	100	0.0	4.0	5.0	3.4	0.1	55.0	0.1	0.1	15.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	12.0	143.7	79.6%				
one mini adjustable	0.0	4.4	0.1	100	0.0	4.0	5.0	3.4	0.1	55.0	0.1	0.1	15.0	1.0	2.0	3.0	2.0	2.0	1.0	0.0	12.0	130.7	71.2%				
one mini fixed	0.0	4.4	0.1	100	0.0	4.0	5.0	3.4	0.1	55.0	0.1	0.1	15.0	1.0	0.0	0.0	2.0	2.0	0.0	0.0	12.0	124.7	73.3%				
suri mini adjustable	0.0	4.4	0.1	100	0.0	4.0	5.0	3.4	0.1	55.0	0.1	0.1	15.0	1.0	2.0	3.0	2.0	2.0	1.0	0.0	12.0	141.7	73.4%				
suri mini fixed	0.0	4.4	0.1	100	0.0	4.0	5.0	3.4	0.1	55.0	0.1	0.1	15.0	1.0	0.0	0.0	2.0	2.0	0.0	0.0	12.0	135.7	75.5%				
alta	30.0	4.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	32.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0	123.0	0.0	0.0	16.0	0.0	223.6	96.2%
alta micro	22.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	22.0	0.0	0.0	12.0	0.0	78.5	93.0%
alta mini	22.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	48.0	0.0	0.0	12.0	0.0	128.5	95.7%
alta plus	40.0	6.9	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	94.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0	281.0	0.0	0.0	24.0	0.0	469.5	98.2%
alta zero	22.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.0	0.0	0.0	0.0	2.0	1.0	0.0	0.0	12.0	0.0	0.0	12.0	0.0	67.5	90.4%
mite fixed	22.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	32.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0	12.0	0.0	0.0	0.0	0.0	55.5	88.3%
toto	30.0	4.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	32.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0	123.0	0.0	0.0	0.0	0.0	207.6	95.9%
toto micro	22.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	22.0	0.0	0.0	0.0	0.0	66.5	91.7%
toto mini	22.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	48.0	0.0	0.0	0.0	0.0	116.5	95.3%
toto plus	40.0	6.9	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	94.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0	281.0	0.0	0.0	0.0	0.0	445.5	98.1%
toto zero	22.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.0	0.0	0.0	0.0	2.0	1.0	0.0	0.0	12.0	0.0	0.0	0.0	0.0	55.5	88.3%
vio square	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	69.0	0.0	0.0	0.0	0.0	149.5	80.3%
vio tall	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	39.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	69.0	0.0	0.0	0.0	0.0	177.5	77.7%



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appendix 2  
end-of-life recyclability





## appendix 2 end-of-life recyclability

Light fittings typically have three life options:

1. Single-use & then disposal in landfill waste (the “norm”)
2. Single-use & then recycle (only a tiny bit better)
3. Repair, reuse & then recycle (Orluna)





appendix 2

end-of-life recyclability – a typical downlight

recyclability % (at end of life)		weight		recyclability
		(grams)	(grams)	
glass lens	borasilicate	12.0	12.0	100%
reflector	ppma	6.9	6.9	100%
reflector finish	vacuum metalised	0.1	0.0	0%
engine body	rec'd polycarbonate	14.1	14.1	100%
engine band	rubber	0.9	0.9	100%
lv cable core	copper	4.0	4.0	100%
lv cable insulation	non-rec pl	5.0	0.0	0%
pcb	elec	3.9	0.0	0%
LED	elec	0.1	0.0	0%
heatsink	rec'd aluminium	103.0	103.0	100%
heatsink finish	anodis	0.1	0.0	0%
label	non-rec pl	0.1	0.0	0%
baffle	rec'd aluminium	21.5	21.5	100%
baffle paint	paint	2.0	0.0	0%
shield	rec'd polycarbonate	6.0	6.0	100%
cape	rubber	5.0	0.0	0%
springs	steel	3.0	3.0	100%
screws for springs	steel	1.0	1.0	100%
screws for tilt	steel	1.0	1.0	100%
circlip	steel	4.0	4.0	100%
outer bezel	rec'd aluminium	21.0	21.0	100%
outer bezel paint	paint	1.5	0.0	0%
		216.2	198.4	91.8%



appendix 2

end-of-life recyclability – across our range

recyclability		recyclability	
arello	97.0%	nikko twin	96.6%
camber adjustable	96.2%	one adjustable	94.1%
camber fixed	96.4%	one fixed	94.0%
camber mini adjustable	85.5%	one mini adjustable	82.2%
camber mini fixed	84.8%	one mini fixed	81.3%
cero 100l /100lp	93.4%	otto adjustable	94.5%
cero orgin	82.4%	suri mini adjustable	83.6%
clarin	95.1%	suri mini fixed	82.8%
cuadro adjustable	94.8%	timo adjustable	94.5%
cuadro twin	95.2%	tiyo adjustable	95.8%
curve adjustable	95.2%	tiyo fixed	95.7%
curve fixed	95.8%	true adjustable	95.2%
curve mini adjustable	84.0%	true fixed	95.0%
curve mini fixed	83.3%	true twin	95.2%
curve recessed fixed	96.1%	vira adjustable	95.1%
dino adjustable	94.8%	otto fixed	94.2%
dino fixed	95.3%	riva adjustable	95.1%
dino twin	94.9%	riva twin	94.8%
duet	95.7%	suri adjustable	94.1%
fade adjustable	96.2%	suri fixed	94.0%
fade fixed	96.3%	vira twin	94.8%
fade mini adjustable	84.4%	air butterfly	97.0%
fade mini fixed	83.8%	air fixed	96.5%
fade twin	95.8%	air integral	96.8%
fina adjustable	94.2%	air pendant	87.8%
fina fixed	93.7%	air rose	96.5%
jade adjustable	95.5%	air screw	96.5%
jade fixed	95.4%	airtrack	83.2%
look adjustable	95.5%	arto	71.6%
look twin	95.0%	elia	69.0%
mina adjustable	94.2%	frame	69.0%
mina fixed	94.3%	ori	60.0%
muro fixed	95.9%	vara	73.0%
nikko adjustable	96.6%	alta	98.4%





appendix 2

end-of-life recyclability – across our range

recyclability		recyclability	
alta micro	95.5%	toto micro	94.7%
alta mini	97.3%	toto mini	97.0%
alta plus	99.2%	toto plus	99.2%
alta zero	94.8%	toto zero	93.7%
mite fixed	93.7%	vio square	97.0%
toto	98.3%	vio tall	97.5%





# appendix 2 end-of-life recyclability by component

recyclability	Weight (grams)											TOTAL	WHOLE PRODUCT %															
	100%	100%	0%	100%	100%	0%	100%	100%	0%	100%	100%			0%	100%	100%	0%											
one fixed	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	30.0	2.0	0.0	0.0	0.0	0.0	24.0	1.5	0.0	0.0	0.0	0.0	0.0	211.7	94.0%	
otto adjustable	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	21.5	2.0	15.0	0.0	4.0	2.0	1.0	4.0	32.0	1.5	0.0	0.0	0.0	0.0	233.2	94.5%
otto fixed	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	30.0	2.0	0.0	0.0	4.0	2.0	0.0	0.0	32.0	1.5	0.0	0.0	0.0	0.0	221.7	94.2%
riva adjustable	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	8.0	3.0	40.0	10.0	6.0	2.0	2.0	8.0	16.0	1.5	0.0	0.0	0.0	0.0	319.7	95.1%
riva twin	24.0	13.8	0.2	28.2	1.8	8.0	10.0	7.8	0.2	206.0	0.2	0.2	16.0	6.0	80.0	20.0	12.0	4.0	0.0	0.0	25.0	3.0	0.0	0.0	0.0	0.0	612.4	94.8%
suri adjustable	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	21.5	2.0	6.0	5.0	3.0	1.0	1.0	4.0	21.0	1.5	0.0	0.0	0.0	0.0	216.2	94.1%
vira adjustable	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	30.0	2.0	0.0	0.0	3.0	1.0	0.0	0.0	24.0	1.5	0.0	0.0	0.0	0.0	211.7	94.0%
timo adjustable	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	21.5	2.0	15.0	0.0	4.0	2.0	1.0	4.0	32.0	1.5	0.0	0.0	0.0	0.0	233.2	94.5%
tiyo adjustable	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	21.5	2.0	6.0	5.0	0.0	0.0	1.0	4.0	26.0	1.5	30.0	2.0	19.0	1.0	373.2	95.8%
tiyo fixed	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	30.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	26.0	1.5	30.0	2.0	19.0	1.0	365.7	95.7%
true adjustable	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	21.5	2.0	15.0	0.0	0.0	0.0	1.0	4.0	19.0	1.5	40.0	2.0	60.0	2.0	353.2	95.2%
true fixed	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	24.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	19.0	1.5	40.0	2.0	60.0	2.0	355.7	95.0%
true twin	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	21.5	2.0	15.0	0.0	0.0	0.0	1.0	4.0	19.0	1.5	40.0	2.0	60.0	2.0	353.2	95.2%
vira adjustable	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	8.0	3.0	40.0	10.0	6.0	2.0	2.0	8.0	16.0	1.5	0.0	0.0	0.0	0.0	319.7	95.1%
vira twin	24.0	13.8	0.2	28.2	1.8	8.0	10.0	7.8	0.2	206.0	0.2	0.2	16.0	6.0	80.0	20.0	12.0	4.0	0.0	0.0	25.0	3.0	0.0	0.0	0.0	0.0	612.4	94.8%
air butterfly	12.0	6.9	0.1	14.1	0.0	4.0	5.0	2.6	0.1	126.0	0.1	0.1	0.0	0.0	0.0	0.0	10.0	2.0	0.0	0.0	137.0	3.0	0.0	0.0	0.0	5.0	366.0	97.0%
air fixed	12.0	6.9	0.1	14.1	0.0	4.0	5.0	2.6	0.1	126.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	125.0	3.0	0.0	0.0	0.0	0.0	311.0	96.5%
air integral	12.0	6.9	0.1	14.1	0.0	1.0	5.0	2.6	0.1	126.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	137.0	3.0	0.0	0.0	0.0	36.0	344.0	96.8%
air pendant	12.0	6.9	0.1	14.1	0.0	36.0	42.0	2.6	0.1	126.0	0.1	0.1	0.0	0.0	0.0	0.0	10.0	2.0	0.0	0.0	137.0	3.0	0.0	0.0	0.0	0.0	392.0	87.8%
air rose	12.0	6.9	0.1	14.1	0.0	4.0	5.0	2.6	0.1	126.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	137.0	3.0	0.0	0.0	0.0	0.0	311.0	96.5%
air screw	12.0	6.9	0.1	14.1	0.0	4.0	5.0	2.6	0.1	126.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	137.0	3.0	0.0	0.0	0.0	0.0	311.0	96.5%
air track	12.0	6.9	0.1	14.1	0.0	4.0	5.0	2.6	0.1	126.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	137.0	3.0	0.0	0.0	0.0	12.0	370.0	83.2%
arellio	26.0	16.0	0.2	198.0	0.0	4.0	5.0	10.2	0.1	430.0	0.1	0.1	64.0	10.0	77.0	0.0	12.0	5.0	4.0	12.0	83.0	3.0	0.0	0.0	0.0	0.0	959.7	97.0%
cero 100l /100lp	0.0	4.4	0.1	8.0	0.0	4.0	5.0	3.4	0.1	55.0	0.1	0.1	49.0	2.0	0.0	0.0	3.0	2.0	0.0	0.0	49.0	1.5	0.0	0.0	0.0	0.0	186.7	93.4%
arto	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.0	12.0	119.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	169.0	71.6%
elia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.0	12.0	128.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	188.5	69.0%
frame	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.0	12.0	198.5	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	290.5	69.0%

recyclability % (at end of life) by component





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appendix 3  
repair



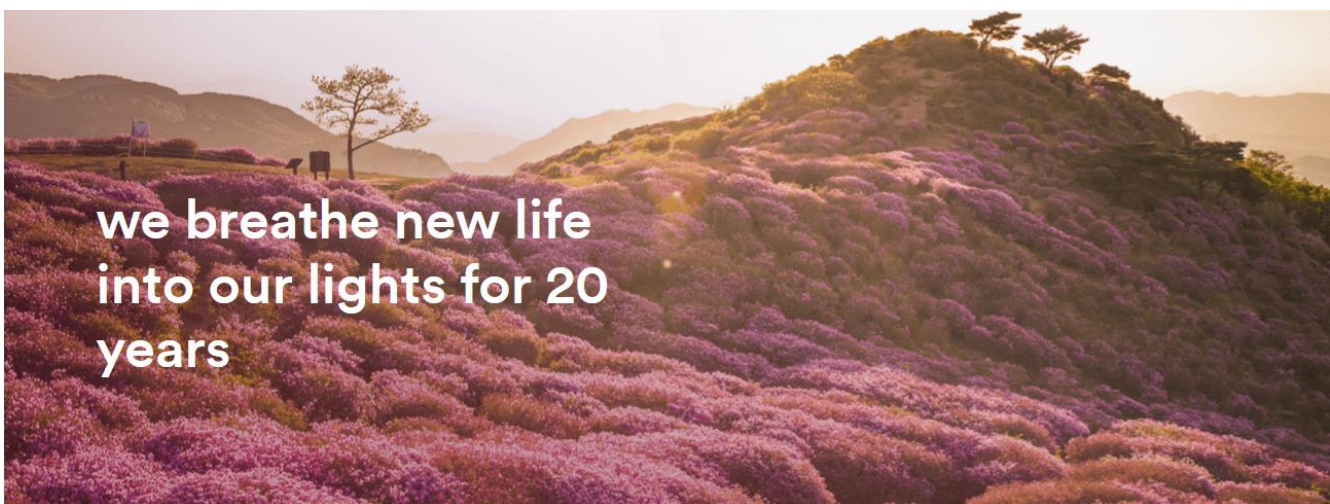


## appendix 3 repair

As of 14 June 2022, all our products offer a 20-year spare parts and repair service. This includes up-lights, floor lights, market lights, downlights and linear.

Repair increases the product life to save virgin materials so that the embodied carbon and other pollution inevitably generated through the manufacture of the products is spread across a useful life of 20 years – rather than the typical five years.

Moving from a single-use society and to a repair and service society will also make virgin materials less expensive for developing countries to help reduce poverty.



*Note – all products supplied after 14 June 2022 have been designed for repair.*



## appendix 3 throw-away washing machine example

Consumers will often purchase a new washing machine, for example, based on a low sticker purchase price. Manufacturers then design to that price, producing models that won't last as long, and aren't easily repaired. We use the machine for a short period, say two to three years, then dispose of the product into landfill, before buying another equally throwaway replacement.

This model is bad for the planet and society, and is actually more expensive for consumers. Rather than buying a throwaway washing machine, we could choose to buy one built to last for 20 years, and designed for full repair and serviceability.

The machine should last for 20 years without malfunction. However, if a malfunction does happen, the manufacturer commits to a fair price spare parts and repair warranty. Rather than replacing the whole machine, we just replace the broken part – often a minor part like a seal. (In the case of a light fitting, it is very often just the LED which needs replacing, while the rest of the fitting is perfectly good for future life.)

This is the approach Orluna takes with all our products.





### appendix 3

## how does repair work?

In the event of a product failure, we offer simple repair.

Our approach is to rely on basic human nature by making the repair the easiest, quickest and cheapest route.

Our fittings have a clear label instructing the user “don’t throw me away”.

The quickest and least effort option is to contact Orluna for a replacement.

Replacement parts are usually sent out the same day.



**orluna**  
circular product

**Don't throw me away.**

If this light has reached the end of its life or is in need of repair, please get in touch on [circular@orluna.com](mailto:circular@orluna.com) or +44 (0) 1923 889712

*When a user takes a broken fitting out of the ceiling the immediate need is to find a like-for-like alternative – we make this easy.*





## appendix 3

### “no tools” forever lamp

We have a new light engine to make home-user repair very simple. We call this the “forever lamp”.

The new forever lamp has a large screw thread which is unscrewed by hand. The forever lamp arrives in post the next day and is simply screwed back into the fitting by hand.





## appendix 3

# how do we collect fittings?

We rely on basic human nature to encourage collection of fittings by making return of the fittings very easy, quick and free.

How?

- Replacement parts are sent out on agreement that the old part is returned to Orluna. Our experience is that most people keep to their word.
- New parts come with a pre-paid return envelope ready for the old part to be returned.
- The user just needs to post the return envelope in one of 14,000 Royal Mail parcel boxes which are spread across the UK.

**circular product**





### appendix 3

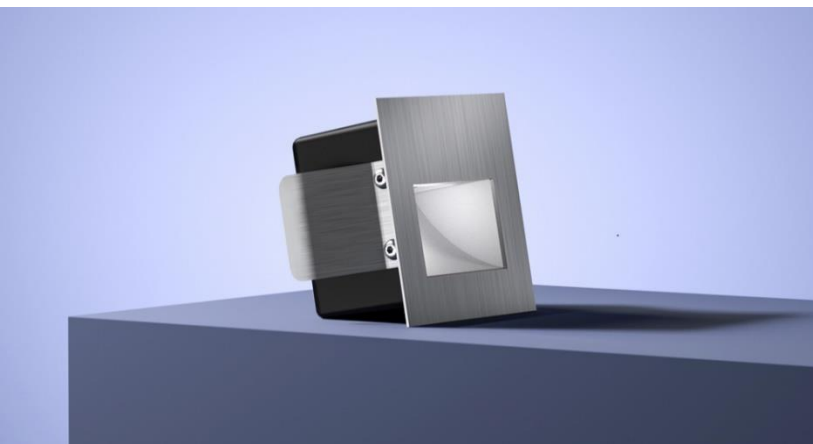
## what happens to returned fittings?

Once the fitting is returned to Orluna, it is disassembled. The LED and PCB are disposed of. Springs, screws and plaster in plates are recycled.

Almost all the other components are made into a “new” fitting and is tested and enters standard stock.

The “new” fitting is ready for its next life with very little use of additional virgin materials.

Thus, when you buy any new Orluna fitting it may have already had a prior life.



Thus, when you buy any new Orluna fitting it may have already had a prior life. Of course, the product is fully tested and has a new warranty.





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appendix 4  
reuse





## appendix 4

### reuse

Light fittings typically have three life cycle options:

1. Single-use & then disposal in landfill waste (the “norm”)
2. Single-use & then recycle (only a tiny bit better)
3. Repair, reuse & then recycle (Orluna)

The next sections explain the concept of why single use and recycling are not good enough and that to make a meaningful change we need to value virgin materials and move fully to the reuse model.

*All our products use the repair,  
reuse then recycle model.*





## appendix 4

# the concept of “highest value state”

When we discovered the concept of “highest value” state in early 2018 it was a moment of epiphany. All became clear and our sustainability journey moved on from the despair about the inadequacies of recycling to hope that we could make an immediate and meaningful change.

Materials are at their highest value when they are in their usable state. This is a state where no further processes are needed in order to use the product. The component is in its highest value state when it is in the right location, right form and right finish to be used. You simply dismantle the old component and reuse it – as it is - in a “new” product.



## example – a heatsink

*An example of a component in its highest value state would be a heatsink extruded into its useful shape and anodised into the desired colour. A lower value material example of this would be the same raw aluminium heatsink material before it is processed.*

*The benefit of the component in its highest value state is that it can be re-used with very little further processing – therefore little further environmental impact. This contrasts with recycling which is energy intensive (sorting, cleaning, transporting, melting, additive chemicals, moulding, finishing, packaging etc).*

So, rather than recycle, we aim to keep components in their highest value state. This just another way of saying that, wherever possible, we should not recycle products when they are at the end of their useful life, but alternatively we should dismantle them and use as many of the components as possible (in their current form) in new products – reuse.



## appendix 4

# why single-use and recyclability is not enough

## *example – a plastic water bottle*

*Let's consider the life of a 100% recyclable of the plastic mineral water bottle.*



*To make the bottle we extract petrochemicals, we process them, pack them and then transport to the mineral water source, say, in the French Alps. The bottle is filled and then transported by lorry across countries to arrive eventually at our home. We drink the water.*

*We then put the plastic bottle in our recycle bin outside our home. This act of putting the bottle in the recycling bin almost feels as if we are good citizens and makes us feel better.*

*The reality is that the bin collection team pick up the plastic bottle in a diesel lorry. It is transported to the first sorting hub where energy and labour is expended. The bottle is then transported to the next hub. Eventually that bottle gets to the recycling hub where it is cleaned, melted, has chemicals and virgin materials added and is then made into granules. The granules are then shipped to a bottle manufacturing site. That site melts and forms a new plastic model and then transports it to the French Alps to be filled with mineral water. Clearly there is a lot of environmental degradation for that two cups of water.*

*Worse still, the 100% recyclable bottle only generates 50% of new material. So, even with the dirty process set out above, one only gets half a new bottle from a whole bottle.*

*The above is a best-case scenario. The burning of plastic as a recycling process is common, as well as shipping recycling to developing countries.*

Let's move away from single-use product to reuse.



## appendix 4

### reuse

At end-of-life, all our products have a process where they are collected, refurbished and tested. They then enter standard stock to return to the market as “new” products.

We want legislation to make end-of-life collection and reuse mandatory. Until this point, we have set up a system to encourage the return of product to Orluna.

Our approach to increase collection rates is to rely on basic human nature by making the return of product the easiest, quickest and cheapest route of disposal.

Our fittings have a clear label instructing the user “don’t throw me away” and to contact us for collection.

Our 80mm downlights also have a “single click” dismantling process so that the old fitting breaks down into two pieces, so that it fits within standard UK post-box slots.



**orluna**  
circular product

**Don't throw me away.**

If this light has reached the end of its life or is in need of repair, please get in touch on [circular@orluna.com](mailto:circular@orluna.com) or 44 (0) 1923 889712

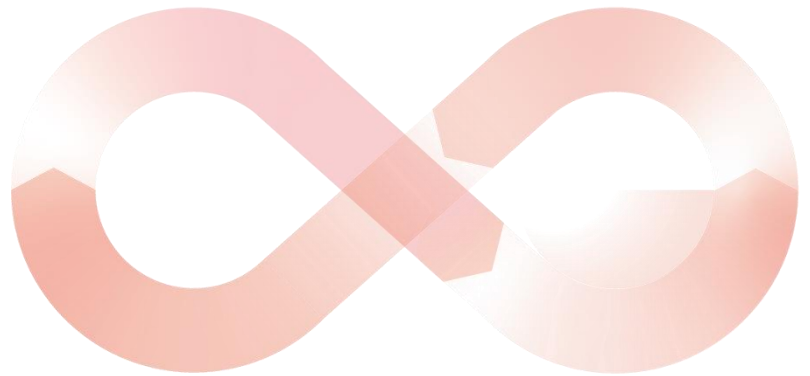




## appendix 4

### reuse – the process

1. When an old Orluna light comes to the end of its life, or is faulty, instead of throwing it away, we kind ask you to return it to us.
2. Once we've received the unwanted or faulty fitting, it's dismantled, repaired and renewed with a new LED and PCB.
3. The fully repaired and tested product enters back into our stock – with a brand new warranty.
4. The 'new' light fitting is despatched to a new customer.





appendix 4

reuse – a typical downlight

repair / renew %

	total weight (grams)	repair / renew weight (grams)	repair / renew
glass lens	12.0	12.0	100%
reflector	6.9	6.9	100%
reflector finish	0.1	0.1	100%
engine body	14.1	14.1	100%
engine band	0.9	0.9	100%
lv cable core	4.0	4.0	100%
lv cable insulation	5.0	5.0	100%
pcb	3.9	0.0	0%
LED	0.1	0.0	0%
heatsink	103.0	103.0	100%
heatsink finish	0.1	0.1	100%
label	0.1	0.0	0%
baffle	21.5	21.5	100%
baffle paint	2.0	2.0	100%
shield	6.0	6.0	100%
cape	5.0	5.0	100%
springs/ ballcatch	3.0	3.0	100%
screws for springs	1.0	1.0	100%
screws for tilt	1.0	1.0	100%
circlip	4.0	4.0	100%
outer bezel	21.0	21.0	100%
outer bezel paint	1.5	1.5	100%
	216.2	212.1	<b>98.1%</b>

# appendix 4 reusability by component

	Weight (grams)												WHOLE PRODUCT %																								
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%													
camber adjustable	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	21.5	1.5	6.0	5.0	0.0	0.0	1.0	4.0	111.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	22.0	0.0	0.0	0.0	0.0	0.0	0.0	323.7	98.8%
camber fixed	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	46.0	1.5	0.0	5.0	0.0	0.0	1.0	4.0	111.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	22.0	0.0	0.0	0.0	0.0	0.0	0.0	342.2	98.8%
clarin	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	0.0	0.0	0.0	0.0	3.0	1.0	0.0	0.0	56.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	211.2	98.1%		
cuadro adjustable	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	4.0	1.5	20.0	5.0	3.0	1.0	1.0	4.0	36.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	226.7	98.2%		
cuadro twin	24.0	13.8	0.2	28.2	1.8	8.0	10.0	7.8	0.2	206.0	0.2	0.2	8.0	3.0	40.0	10.0	6.0	2.0	2.0	8.0	97.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	477.9	98.3%			
curve adjustable	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	20.0	1.5	0.0	5.0	3.0	1.0	1.0	0.0	74.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	257.2	98.4%			
curve fixed	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	0.0	0.0	0.0	0.0	4.0	1.0	0.0	0.0	100.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	256.7	98.4%			
curve recessed fixed	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	46.0	1.0	0.0	0.0	3.0	1.0	0.0	0.0	100.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	302.7	98.7%			
dino adjustable	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	15.0	1.0	15.0	5.0	3.0	1.0	1.0	4.0	20.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	235.2	98.3%			
dino fixed	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	22.0	1.5	0.0	0.0	3.0	1.0	0.0	0.0	74.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	252.7	98.4%			
dino twin	24.0	13.8	0.2	28.2	1.8	8.0	10.0	7.8	0.2	206.0	0.2	0.2	30.0	2.0	30.0	0.0	6.0	2.0	2.0	8.0	62.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	444.4	98.2%			
duet	0.0	22.0	0.0	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	0.0	0.0	0.0	0.0	3.0	1.0	0.0	0.0	99.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	258.2	98.5%			
fade adjustable	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	21.5	1.5	6.0	5.0	0.0	0.0	1.0	4.0	82.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	314.2	98.7%			
fade fixed	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	22.0	1.5	0.0	0.0	3.0	1.0	0.0	0.0	99.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	315.7	98.7%			
fade twin	24.0	13.8	0.2	28.2	1.8	8.0	10.0	7.8	0.2	206.0	0.2	0.2	42.0	3.0	12.0	10.0	0.0	0.0	0.0	0.0	164.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	589.4	98.6%			
fin adjustable	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	8.0	1.0	6.0	0.0	3.0	1.0	1.0	4.0	20.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	195.2	98.0%			
fin fixed	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	15.0	2.0	0.0	0.0	3.0	1.0	0.0	0.0	22.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	194.2	97.9%			
fin twin	24.0	13.8	0.2	28.2	1.8	8.0	10.0	7.8	0.2	206.0	0.2	0.2	21.5	2.0	6.0	5.0	3.0	1.0	1.0	4.0	103.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	298.7	98.7%			
jade adjustable	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	21.5	2.0	6.0	5.0	3.0	1.0	1.0	4.0	103.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	291.2	98.6%			
jade fixed	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	22.0	1.5	15.0	0.0	4.0	2.0	1.0	4.0	63.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	282.7	98.6%			
look adjustable	12.0	6.9	0.1	14.1	1.8	8.0	10.0	7.8	0.2	206.0	0.2	0.2	44.0	3.0	30.0	0.0	8.0	4.0	2.0	8.0	105.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	511.3	98.4%			
look twin	24.0	13.8	0.2	28.2	1.8	8.0	10.0	7.8	0.2	206.0	0.2	0.2	44.0	3.0	30.0	0.0	8.0	4.0	2.0	8.0	105.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	221.7	98.2%			
mina adjustable	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	22.0	1.5	0.0	0.0	8.0	4.0	1.0	0.0	17.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	206.7	98.1%			
mina fixed	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	22.0	1.5	0.0	0.0	8.0	4.0	1.0	0.0	20.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	271.2	98.5%			
muro fixed	0.0	20.0	0.0	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	0.0	0.0	0.0	0.0	8.0	4.0	0.0	0.0	106.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	271.2	98.5%			
nikko adjustable	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	30.0	2.0	37.0	0.0	0.0	0.0	2.0	4.0	56.0	1.0	35.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	396.2	99.0%			
nikko twin	24.0	13.8	0.2	28.2	1.8	8.0	10.0	7.8	0.2	206.0	0.2	0.2	60.0	4.0	74.0	0.0	0.0	0.0	4.0	8.0	112.0	2.0	70.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	777.5	99.0%			
one adjustable	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	21.5	2.0	6.0	5.0	3.0	1.0	1.0	4.0	21.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	216.2	98.1%			

# appendix 4 reusability by component

reusability	Weight (grams)																	WHOLE PRODUCT %																
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%		0%															
	glass lens	reflector	reflector finish	engine body	engine band	iv cable core	iv cable insulation	pcb	LED	heatsink	heatsink finish	label	baffle	baffle paint	shield	cape	springs/ ballcatch	screws for springs	screws for tilt	clip	outer bezel	outer bezel paint	second other bezel	second outer bezel paint	inner bezel	inner bezel plant	recycled plaster plate	other steel	other aluminum	other recycled plastic	other non-recycled	TOTAL		
one fixed	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	30.0	2.0	0.0	0.0	3.0	1.0	0.0	0.0	24.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	211.7	98.1%	
otto adjustable	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	21.5	2.0	15.0	0.0	4.0	2.0	1.0	4.0	32.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	233.2	98.3%	
otto fixed	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	30.0	2.0	0.0	0.0	4.0	2.0	0.0	0.0	32.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	221.7	98.2%	
riva adjustable	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	8.0	3.0	40.0	10.0	6.0	2.0	2.0	8.0	16.0	1.5	0.0	0.0	71.0	2.0	0.0	0.0	0.0	0.0	0.0	319.7	98.7%	
riva twin	24.0	13.8	0.2	28.2	1.8	8.0	10.0	7.8	0.2	206.0	0.2	0.2	16.0	6.0	80.0	20.0	12.0	4.0	0.0	0.0	25.0	3.0	0.0	0.0	142.0	4.0	0.0	0.0	0.0	0.0	0.0	612.4	98.7%	
suri adjustable	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	21.5	2.0	6.0	5.0	3.0	1.0	1.0	4.0	21.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	216.2	98.1%	
suri fixed	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	30.0	2.0	0.0	0.0	3.0	1.0	0.0	0.0	24.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	211.7	98.1%	
timo adjustable	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	21.5	2.0	15.0	0.0	4.0	2.0	1.0	4.0	32.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	233.2	98.3%	
tiyo adjustable	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	30.0	2.0	6.0	5.0	0.0	0.0	0.0	1.0	4.0	26.0	1.5	30.0	2.0	19.0	1.0	0.0	20.0	84.0	0.0	0.0	373.2	98.9%
tiyo fixed	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	30.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	26.0	1.5	40.0	2.0	60.0	2.0	35.0	0.0	0.0	0.0	0.0	365.7	98.9%	
true adjustable	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	21.5	2.0	15.0	0.0	0.0	0.0	0.0	1.0	4.0	19.0	1.5	40.0	2.0	60.0	2.0	35.0	0.0	0.0	0.0	353.2	98.9%	
true fixed	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	24.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	19.0	1.5	40.0	2.0	60.0	2.0	35.0	0.0	0.0	0.0	0.0	335.7	98.8%	
true twin	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	21.5	2.0	15.0	0.0	0.0	0.0	0.0	1.0	4.0	19.0	1.5	40.0	2.0	60.0	2.0	35.0	0.0	0.0	0.0	353.2	98.9%	
vira adjustable	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	8.0	3.0	40.0	10.0	6.0	2.0	2.0	8.0	16.0	1.5	0.0	0.0	0.0	71.0	2.0	0.0	0.0	0.0	0.0	319.7	98.7%	
vira twin	24.0	13.8	0.2	28.2	1.8	8.0	10.0	7.8	0.2	206.0	0.2	0.2	16.0	6.0	80.0	20.0	12.0	4.0	0.0	0.0	25.0	3.0	0.0	0.0	142.0	4.0	0.0	0.0	0.0	0.0	0.0	612.4	98.7%	
air butterfly	12.0	6.9	0.1	14.1	0.0	4.0	5.0	2.6	0.1	126.0	0.1	0.1	0.0	0.0	0.0	0.0	10.0	2.0	0.0	0.0	137.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	36.0	0.0	366.0	99.3%	
air fixed	12.0	6.9	0.1	14.1	0.0	4.0	5.0	2.6	0.1	126.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	125.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	12.0	0.0	311.0	99.1%		
air integral	12.0	6.9	0.1	14.1	0.0	1.0	5.0	2.6	0.1	126.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	137.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	36.0	0.0	344.0	99.2%		
air pendant	12.0	6.9	0.1	14.1	0.0	36.0	42.0	2.6	0.1	126.0	0.1	0.1	0.0	0.0	0.0	0.0	10.0	2.0	0.0	0.0	137.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	392.0	99.3%	
air rose	12.0	6.9	0.1	14.1	0.0	4.0	5.0	2.6	0.1	126.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	137.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	311.0	99.1%	
air screw	12.0	6.9	0.1	14.1	0.0	4.0	5.0	2.6	0.1	126.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	137.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	311.0	99.1%	
air track	12.0	6.9	0.1	14.1	0.0	0.0	0.0	2.6	0.1	126.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	137.0	3.0	0.0	0.0	0.0	0.0	0.0	12.0	0.0	56.0	370.0	84.1%		
arello	26.0	16.0	0.2	198.0	0.0	4.0	5.0	10.2	0.1	430.0	0.1	0.1	64.0	10.0	77.0	0.0	12.0	5.0	4.0	12.0	83.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	959.7	98.9%	
cero1001/100lp	0.0	4.4	0.1	8.0	0.0	4.0	5.0	3.4	0.1	55.0	0.1	0.1	49.0	2.0	0.0	0.0	3.0	2.0	0.0	0.0	49.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	186.7	98.1%	
arto	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.0	12.0	119.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	169.0	71.6%	
elia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.0	12.0	128.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.5	188.5	69.0%	
frame	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.0	12.0	198.5	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	62.0	290.5	69.0%	

# appendix 4 reusability by component

reusability

	Weight (grams)																				TOTAL	WHOLE PRODUCT %		
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%			0%	
ori	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	120.0	60.0%
vara	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	178.0	73.0%
camber mini adjusta	0.0	4.4	0.1	10.0	0.0	4.0	5.0	3.4	0.1	55.0	0.1	0.1	15.0	1.0	2.0	3.0	2.0	0.0	0.0	0.0	0.0	0.0	160.7	90.4%
camber mini fixed	0.0	4.4	0.1	10.0	0.0	4.0	5.0	3.4	0.1	55.0	0.1	0.1	15.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	153.7	89.9%
cero orgin	0.0	4.4	0.1	10.0	0.0	4.0	5.0	3.4	0.1	55.0	0.1	0.1	0.0	0.0	0.0	3.0	2.0	2.0	0.0	0.0	0.0	0.0	126.7	87.8%
curve mini adjustabl	0.0	4.4	0.1	10.0	0.0	4.0	5.0	3.4	0.1	55.0	0.1	0.1	15.0	1.0	2.0	3.0	2.0	2.0	1.0	0.0	0.0	0.0	145.7	89.4%
curve mini fixed	0.0	4.4	0.1	10.0	0.0	4.0	5.0	3.4	0.1	55.0	0.1	0.1	15.0	1.0	0.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	139.7	88.9%
fade mini adjustable	0.0	4.4	0.1	10.0	0.0	4.0	5.0	3.4	0.1	55.0	0.1	0.1	15.0	1.0	2.0	3.0	0.0	0.0	1.0	0.0	0.0	0.0	149.7	89.6%
fade mini fixed	0.0	4.4	0.1	10.0	0.0	4.0	5.0	3.4	0.1	55.0	0.1	0.1	15.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	143.7	89.2%
one mini adjustable	0.0	4.4	0.1	10.0	0.0	4.0	5.0	3.4	0.1	55.0	0.1	0.1	15.0	1.0	2.0	3.0	2.0	2.0	1.0	0.0	0.0	0.0	130.7	88.1%
one mini fixed	0.0	4.4	0.1	10.0	0.0	4.0	5.0	3.4	0.1	55.0	0.1	0.1	15.0	1.0	0.0	0.0	2.0	2.0	1.0	0.0	0.0	0.0	124.7	87.6%
suri mini adjustable	0.0	4.4	0.1	10.0	0.0	4.0	5.0	3.4	0.1	55.0	0.1	0.1	15.0	1.0	2.0	3.0	2.0	2.0	1.0	0.0	0.0	0.0	141.7	89.1%
suri mini fixed	0.0	4.4	0.1	10.0	0.0	4.0	5.0	3.4	0.1	55.0	0.1	0.1	15.0	1.0	0.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	135.7	88.6%
alta	30.0	4.0	0.1	0.0	0.0	0.0	0.0	3.4	0.1	0.0	0.0	0.0	32.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	223.6	98.4%
alta micro	22.0	3.0	0.0	0.0	0.0	0.0	0.0	3.4	0.1	0.0	0.0	0.0	9.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	78.5	95.5%
alta mini	22.0	3.0	0.0	0.0	0.0	0.0	0.0	3.4	0.1	0.0	0.0	0.0	30.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	128.5	97.3%
alta plus	40.0	6.9	0.1	0.0	0.0	0.0	0.0	3.4	0.1	0.0	0.0	0.0	94.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	469.5	99.3%
alta zero	22.0	3.0	0.0	0.0	0.0	0.0	0.0	3.4	0.1	0.0	0.0	0.0	7.0	0.0	0.0	0.0	2.0	1.0	0.0	0.0	0.0	0.0	67.5	94.8%
mite fixed	22.0	3.0	0.0	0.0	0.0	0.0	0.0	3.4	0.1	0.0	0.0	0.0	7.0	0.0	0.0	0.0	2.0	1.0	0.0	0.0	0.0	0.0	55.5	93.7%
toto	30.0	4.0	0.1	0.0	0.0	0.0	0.0	3.4	0.1	0.0	0.0	0.0	32.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	207.6	98.3%
toto micro	22.0	3.0	0.0	0.0	0.0	0.0	0.0	3.4	0.1	0.0	0.0	0.0	9.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	66.5	94.7%
toto mini	22.0	3.0	0.0	0.0	0.0	0.0	0.0	3.4	0.1	0.0	0.0	0.0	30.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	116.5	97.0%
toto plus	40.0	6.9	0.1	0.0	0.0	0.0	0.0	3.4	0.1	0.0	0.0	0.0	94.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	445.5	99.2%
toto zero	22.0	3.0	0.0	0.0	0.0	0.0	0.0	3.4	0.1	0.0	0.0	0.0	7.0	0.0	0.0	0.0	2.0	1.0	0.0	0.0	0.0	0.0	55.5	93.7%
vio square	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.4	0.1	0.0	0.0	0.0	21.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	149.5	97.7%
vio tall	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.4	0.1	0.0	0.0	0.0	39.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	177.5	98.0%



## appendix 4

# repair & reuse - our Swedish partner

All our products can be sent back to Orluna UK for repair or for end-of-life disposal.

Overseas, our products still offer long lives, low virgin material percentage and lower embodied carbon. However, economic local repair and renewal is difficult. We are working to find international partners to help provide service centres who repair and renew products for their local markets.

We have set up local repair & renew service with Rebel Light in Sweden, Denmark and Finland.





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appendix 5  
tm66





## appendix 5

# tm66 - creating a circular economy in the lighting industry, CIBSE 2021

TM66 is a framework for environmental action and assessment by all those in the lighting industry, supplied by The Chartered Institution of Building Services Engineers (“CIBSE”), and led by Bob Bohannon (LIA) and Kristina Allison (Atkins Global).

Both Orluna’s model and TM66 are based on the circular framework set out by the Ellen MacArthur Foundation. As such both our approaches have many similarities.

As set out in appendix 15, we offer an environmental support package for designers where we share the manufacturer perspective to help meet the client’s environmental needs. This includes TM66 product data as well as EPDs and CPDs.







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appendix 6  
embodied carbon





## appendix 6

# reducing embodied carbon

Perhaps the single most important improvement that we can make is to move from a throwaway linear manufacturing model to a circular model. The reason for this is that maintaining materials at their highest value state and using recycled materials has a significantly lower co2 impact than using only virgin materials.

Reducing embodied carbon:

- less virgin materials
- repair
- renew – highest value materials
- renew – end of life recycle process





## measuring embodied carbon

The following pages of this report give a VERY PROVISIONAL AND INCOMPLETE initial assessment of the embodied carbon within our product range.

This information is a starting point in our journey to fully document our carbon footprint. This section is supplied to start “the conversation” with interested parties and the lighting community. This information will contain inaccuracies and should not be relied upon.

Our embodied carbon calculations exclude power supplies and cover sections A1, A2 and A3 in the life cycle information below.

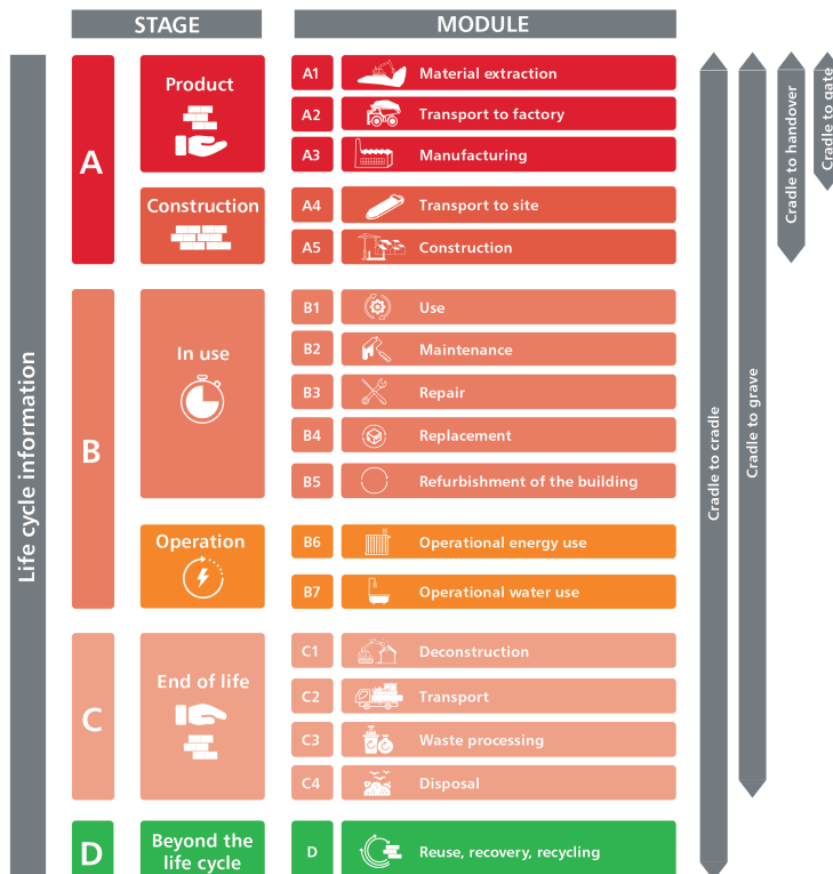


Figure 1: Information for a life-cycle assessment as defined by BS EN 15978:2011, including typical system boundaries (Source TM65)



# appendix 6 embodied carbon

The table below shows VERY PROVISIONAL embodied carbon calculations per component covering stages A1, A2 and A3 and excluding power supply unit. The aim of this data is to start a process of understanding our embodied carbon emissions. The output is not to be relied upon.

	PROVISIONAL ESTIMATED KG OF CO2														TOTAL																										
co2 / kg	0.308	7.394	4.134	2.425	7.394	2.634	0.295	0.324	0.134	2.084	11.618	6.134	1.944	0.608	7.352	7.394	3.684	3.584	3.584	2.084	0.608	2.084	0.608	7.352	3.584	2.084	2.425	6.134		co2 GRAMS											
glass lens	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
reflector	3.7	51.0	0.4	34.2	6.7	10.5	1.5	1.3	0.0	214.7	1.2	0.6	58.3	1.2	0.0	0.0	11.1	3.6	0.0	0.0	50.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
reflector finish	3.7	51.0	0.4	34.2	6.7	10.5	1.5	1.3	0.0	214.7	1.2	0.6	41.8	1.2	110.3	0.0	14.7	7.2	3.6	14.3	66.7	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
engine body	3.7	51.0	0.4	34.2	6.7	10.5	1.5	1.3	0.0	214.7	1.2	0.6	41.8	1.2	110.3	0.0	14.7	7.2	3.6	14.3	66.7	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
engine band	3.7	51.0	0.4	34.2	6.7	10.5	1.5	1.3	0.0	214.7	1.2	0.6	41.8	1.2	110.3	0.0	14.7	7.2	3.6	14.3	66.7	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
lv cable core	3.7	51.0	0.4	34.2	6.7	10.5	1.5	1.3	0.0	214.7	1.2	0.6	41.8	1.2	110.3	0.0	14.7	7.2	3.6	14.3	66.7	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
lv cable insulation	3.7	51.0	0.4	34.2	6.7	10.5	1.5	1.3	0.0	214.7	1.2	0.6	41.8	1.2	110.3	0.0	14.7	7.2	3.6	14.3	66.7	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
pcb	3.7	51.0	0.4	34.2	6.7	10.5	1.5	1.3	0.0	214.7	1.2	0.6	41.8	1.2	110.3	0.0	14.7	7.2	3.6	14.3	66.7	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
LED	3.7	51.0	0.4	34.2	6.7	10.5	1.5	1.3	0.0	214.7	1.2	0.6	41.8	1.2	110.3	0.0	14.7	7.2	3.6	14.3	66.7	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
heat sink	3.7	51.0	0.4	34.2	6.7	10.5	1.5	1.3	0.0	214.7	1.2	0.6	41.8	1.2	110.3	0.0	14.7	7.2	3.6	14.3	66.7	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
heat sink finish	3.7	51.0	0.4	34.2	6.7	10.5	1.5	1.3	0.0	214.7	1.2	0.6	41.8	1.2	110.3	0.0	14.7	7.2	3.6	14.3	66.7	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
label	3.7	51.0	0.4	34.2	6.7	10.5	1.5	1.3	0.0	214.7	1.2	0.6	41.8	1.2	110.3	0.0	14.7	7.2	3.6	14.3	66.7	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
batlle	3.7	51.0	0.4	34.2	6.7	10.5	1.5	1.3	0.0	214.7	1.2	0.6	41.8	1.2	110.3	0.0	14.7	7.2	3.6	14.3	66.7	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
batlle paint	3.7	51.0	0.4	34.2	6.7	10.5	1.5	1.3	0.0	214.7	1.2	0.6	41.8	1.2	110.3	0.0	14.7	7.2	3.6	14.3	66.7	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
shield	3.7	51.0	0.4	34.2	6.7	10.5	1.5	1.3	0.0	214.7	1.2	0.6	41.8	1.2	110.3	0.0	14.7	7.2	3.6	14.3	66.7	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
cape	3.7	51.0	0.4	34.2	6.7	10.5	1.5	1.3	0.0	214.7	1.2	0.6	41.8	1.2	110.3	0.0	14.7	7.2	3.6	14.3	66.7	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
springs/ balcatch	3.7	51.0	0.4	34.2	6.7	10.5	1.5	1.3	0.0	214.7	1.2	0.6	41.8	1.2	110.3	0.0	14.7	7.2	3.6	14.3	66.7	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
screws for springs	3.7	51.0	0.4	34.2	6.7	10.5	1.5	1.3	0.0	214.7	1.2	0.6	41.8	1.2	110.3	0.0	14.7	7.2	3.6	14.3	66.7	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
screws for tilt	3.7	51.0	0.4	34.2	6.7	10.5	1.5	1.3	0.0	214.7	1.2	0.6	41.8	1.2	110.3	0.0	14.7	7.2	3.6	14.3	66.7	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
clip	3.7	51.0	0.4	34.2	6.7	10.5	1.5	1.3	0.0	214.7	1.2	0.6	41.8	1.2	110.3	0.0	14.7	7.2	3.6	14.3	66.7	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
outer bezel	3.7	51.0	0.4	34.2	6.7	10.5	1.5	1.3	0.0	214.7	1.2	0.6	41.8	1.2	110.3	0.0	14.7	7.2	3.6	14.3	66.7	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
outer bezel paint	3.7	51.0	0.4	34.2	6.7	10.5	1.5	1.3	0.0	214.7	1.2	0.6	41.8	1.2	110.3	0.0	14.7	7.2	3.6	14.3	66.7	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
second other bezel	3.7	51.0	0.4	34.2	6.7	10.5	1.5	1.3	0.0	214.7	1.2	0.6	41.8	1.2	110.3	0.0	14.7	7.2	3.6	14.3	66.7	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
second outer bezel paint	3.7	51.0	0.4	34.2	6.7	10.5	1.5	1.3	0.0	214.7	1.2	0.6	41.8	1.2	110.3	0.0	14.7	7.2	3.6	14.3	66.7	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
inner bezel	3.7	51.0	0.4	34.2	6.7	10.5	1.5	1.3	0.0	214.7	1.2	0.6	41.8	1.2	110.3	0.0	14.7	7.2	3.6	14.3	66.7	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
inner bezel paint	3.7	51.0	0.4	34.2	6.7	10.5	1.5	1.3	0.0	214.7	1.2	0.6	41.8	1.2	110.3	0.0	14.7	7.2	3.6	14.3	66.7	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
recycled plaster plate	3.7	51.0	0.4	34.2	6.7	10.5	1.5	1.3	0.0	214.7	1.2	0.6	41.8	1.2	110.3	0.0	14.7	7.2	3.6	14.3	66.7	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
other steel	3.7	51.0	0.4	34.2	6.7	10.5	1.5	1.3	0.0	214.7	1.2	0.6	41.8	1.2	110.3	0.0	14.7	7.2	3.6	14.3	66.7	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
other aluminium	3.7	51.0	0.4	34.2	6.7	10.5	1.5	1.3	0.0	214.7	1.2	0.6	41.8	1.2	110.3	0.0	14.7	7.2	3.6	14.3	66.7	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
other recycled plastic	3.7	51.0	0.4	34.2	6.7	10.5	1.5	1.3	0.0	214.7	1.2	0.6	41.8	1.2	110.3	0.0	14.7	7.2	3.6	14.3	66.7	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
other non-recycled	3.7	51.0	0.4	34.2	6.7	10																																			





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appendix 7

whole company circularity





## appendix 7 whole company circularity

The table below summarises circular information for our company, Orluna.

	birth		life	renew		circular
	virgin	co2 kg (provisional)	repair	repair %	recyclability	
company 2021	13.3%	60,165	✓	97.8%	94.4%	✓

This information is the weighted average circular information for Orluna as a whole company. This is calculated based on all products shipped in the year to 31 December 2021.







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appendix 8

circularity by product  
overview





## appendix 8 circularity by product, overview

The table below summarises circular information by product.

	birth		life	renew		circular
	virgin	co2 (provisional)	repair	repair %	recyclability	
air butterfly	10.2%	0.80	✓	99.3%	97.0%	✓
air fixed	6.5%	0.66	✓	99.1%	96.5%	✓
air integral	4.3%	0.72	✓	99.2%	96.8%	✓
air pendant	25.2%	0.79	✓	99.3%	87.8%	✓
air rose	5.7%	0.65	✓	99.1%	96.5%	✓
air screw	5.7%	0.65	✓	99.1%	96.5%	✓
airtrack	17.5%	1.01	✓	84.1%	83.2%	✓
alta	3.8%	0.43	✓	98.4%	98.4%	✓
alta micro	7.0%	0.14	✓	95.5%	95.5%	✓
alta mini	4.3%	0.24	✓	97.3%	97.3%	✓
alta plus	1.8%	0.93	✓	99.3%	99.2%	✓
alta zero	9.6%	0.12	✓	94.8%	94.8%	✓
arello	12.6%	2.51	✓	98.9%	97.0%	✓
arto	29.6%	0.38	✓	71.6%	71.6%	✓
camber adjustable	11.0%	0.86	✓	98.8%	96.2%	✓
camber fixed	10.1%	0.86	✓	98.8%	96.4%	✓
camber mini adjustable	22.2%	0.42	✓	90.4%	85.5%	✓
camber mini fixed	19.7%	0.38	✓	89.9%	84.8%	✓
cero 100l / 100lp	12.3%	0.40	✓	98.1%	93.4%	✓
cero orgin	27.9%	0.35	✓	87.8%	82.4%	✓
clarin	10.4%	0.46	✓	98.1%	95.1%	✓
cuadro adjustable	16.6%	0.63	✓	98.2%	94.8%	✓
cuadro twin	15.6%	1.31	✓	98.3%	95.2%	✓
curve adjustable	11.7%	0.58	✓	98.4%	95.2%	✓
curve fixed	9.2%	0.55	✓	98.4%	95.8%	✓
curve mini adjustable	25.9%	0.40	✓	89.4%	84.0%	✓
curve mini fixed	23.8%	0.36	✓	88.9%	83.3%	✓



## appendix 8 circularity by product, overview

The table below summarises circular information by product.

	birth		life	renew		circular
	virgin	co2 (provisional)	repair	repair %	recyclability	
curve recessed fixed	7.8%	0.64	✓	98.7%	96.1%	✓
dino adjustable	15.7%	0.62	✓	98.3%	94.8%	✓
dino fixed	9.3%	0.54	✓	98.4%	95.3%	✓
dino twin	14.0%	1.13	✓	98.2%	94.9%	✓
duet	8.9%	0.66	✓	98.5%	95.7%	✓
elia	32.1%	0.47	✓	69.0%	69.0%	✓
fade adjustable	17.5%	0.87	✓	98.7%	96.2%	✓
fade fixed	13.9%	0.81	✓	98.7%	96.3%	✓
fade mini adjustable	22.5%	0.40	✓	89.6%	84.4%	✓
fade mini fixed	20.4%	0.36	✓	89.2%	83.8%	✓
fade twin	12.1%	1.60	✓	98.6%	95.8%	✓
fina adjustable	15.0%	0.46	✓	98.0%	94.2%	✓
fina fixed	12.4%	0.42	✓	97.9%	93.7%	✓
frame	31.7%	0.81	✓	69.0%	69.0%	✓
jade adjustable	12.1%	0.70	✓	98.7%	95.5%	✓
jade fixed	8.6%	0.62	✓	98.6%	95.4%	✓
look adjustable	12.2%	0.69	✓	98.6%	95.5%	✓
look twin	12.9%	1.25	✓	98.4%	95.0%	✓
mina adjustable	15.1%	0.49	✓	98.2%	94.2%	✓
mina fixed	15.2%	0.46	✓	98.1%	94.3%	✓
mite fixed	11.7%	0.09	✓	93.7%	93.7%	✓
muro fixed	11.4%	0.68	✓	98.5%	95.9%	✓
nikko adjustable	8.7%	1.03	✓	99.0%	96.6%	✓
nikko twin	8.9%	2.02	✓	99.0%	96.6%	✓
one adjustable	16.5%	0.53	✓	98.1%	94.1%	✓
one fixed	11.6%	0.45	✓	98.1%	94.0%	✓
one mini adjustable	28.8%	0.36	✓	88.1%	82.2%	✓



## appendix 8 circularity by product, overview

The table below summarises circular information by product.

	birth		life	renew		circular
	virgin	co2 (provisional)	repair	repair %	recyclability	
one mini fixed	26.7%	0.32	✓	87.6%	81.3%	✓
ori	41.7%	0.28	✓	60.0%	60.0%	✓
otto adjustable	14.8%	0.59	✓	98.3%	94.5%	✓
otto fixed	12.0%	0.47	✓	98.2%	94.2%	✓
riva adjustable	18.6%	0.96	✓	98.7%	95.1%	✓
riva twin	16.2%	1.83	✓	98.7%	94.8%	✓
suri adjustable	16.5%	0.53	✓	98.1%	94.1%	✓
suri fixed	11.6%	0.45	✓	98.1%	94.0%	✓
suri mini adjustable	26.6%	0.39	✓	89.1%	83.6%	✓
suri mini fixed	24.5%	0.35	✓	88.6%	82.8%	✓
timo adjustable	14.8%	0.59	✓	98.3%	94.5%	✓
tiyo adjustable	14.7%	0.87	✓	98.9%	95.8%	✓
tiyo fixed	11.9%	0.79	✓	98.9%	95.7%	✓
toto	4.1%	0.40	✓	98.3%	98.3%	✓
toto micro	8.3%	0.11	✓	94.7%	94.7%	✓
toto mini	4.7%	0.21	✓	97.0%	97.0%	✓
toto plus	1.9%	0.88	✓	99.2%	99.2%	✓
toto zero	11.7%	0.09	✓	93.7%	93.7%	✓
true adjustable	11.2%	1.01	✓	98.9%	95.2%	✓
true fixed	9.4%	0.88	✓	98.8%	95.0%	✓
true twin	11.2%	1.01	✓	98.9%	95.2%	✓
vara	28.1%	0.40	✓	73.0%	73.0%	✓
vio square	19.7%	0.34	✓	97.7%	97.0%	✓
vio tall	22.3%	0.41	✓	98.0%	97.5%	✓
vira adjustable	18.6%	0.96	✓	98.7%	95.1%	✓
vira twin	16.2%	1.83	✓	98.7%	94.8%	✓



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appendix 9

circularity by product





The following tables below summarise circular information by component, by product,

air butterfly

Table for 'air butterfly' showing recycled %, recyclable %, repair/renew %, weight grams, and CO2/kg for various components. Includes summary rows for recycled, recyclable, repair/renew, and embodied carbon, along with circular product metrics (366.0 total, 99.8% recycled, 97.0% recyclable, 99.3% repair/renew, 0.70 embodied carbon).

air fixed

Table for 'air fixed' showing recycled %, recyclable %, repair/renew %, weight grams, and CO2/kg for various components. Includes summary rows for recycled, recyclable, repair/renew, and embodied carbon, along with circular product metrics (310.0 total, 93.5% recycled, 96.5% recyclable, 99.1% repair/renew, 0.63 embodied carbon).

air integral

Table for 'air integral' showing recycled %, recyclable %, repair/renew %, weight grams, and CO2/kg for various components. Includes summary rows for recycled, recyclable, repair/renew, and embodied carbon, along with circular product metrics (344.0 total, 95.7% recycled, 96.8% recyclable, 99.2% repair/renew, 0.65 embodied carbon).



## air pendant

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heat sink	heat sink finish	label	baffle	baffle paint	shield	case	spring/ballcatch	screws for springs	screws for fit	circlip	outer bezel	outer bezel paint	second outer bezel	second outer bezel p	inner bezel	inner bezel paint	recycled plaster plate	other steel	other aluminium	other recycled plastic	other non-recycled	COMPLETE PRODUCT	COMPLETE PRODUCT
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%	0%	
recyclable %	100%	100%	0%	100%	100%	100%	0%	0%	0%	100%	0%	0%	100%	0%	100%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	100%	100%	100%	100%	0%		
repair / renew %	100%	100%	100%	100%	100%	100%	0%	0%	0%	100%	100%	100%	100%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	
weight grams	12.0	6.9	0.1	14.1	-	36.0	42.0	2.6	0.1	126.0	0.1	0.1	-	-	-	10.0	2.0	2.0	-	3.6	137.0	3.0	-	-	-	-	-	-	-	-	6.1		
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	7.4	3.6	2.1	2.4	6.1		

recycled	12.0	6.9	0.0	11.3	0.0	0.0	0.0	0.0	0.0	126.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	137.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
recyclable	12.0	6.9	0.0	14.1	0.0	36.0	0.0	0.0	0.0	126.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	137.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
repair / renew	12.0	6.9	0.1	14.1	0.0	36.0	42.0	0.0	0.0	126.0	0.1	0.1	0.0	0.0	0.0	0.0	10.0	2.0	0.0	0.0	137.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
embodied carbon	0.004	0.031	0.000	0.034	0.000	0.095	0.012	0.001	0.000	0.263	0.001	0.001	0.000	0.000	0.000	0.000	0.037	0.007	0.000	0.000	0.286	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

total	293.2	74.8% recycled																392.0
total	344.0	87.8% recyclable																392.0
total	389.3	99.3% repair / renew																392.0
		0.79 embodied carbon																392.0
		provisional kg of co2																392.0

**circular product**

## air rose

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heat sink	heat sink finish	label	baffle	baffle paint	shield	case	spring/ballcatch	screws for springs	screws for fit	circlip	outer bezel	outer bezel paint	second outer bezel	second outer bezel p	inner bezel	inner bezel paint	recycled plaster plate	other steel	other aluminium	other recycled plastic	other non-recycled	COMPLETE PRODUCT	COMPLETE PRODUCT
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%	0%	
recyclable %	100%	100%	0%	100%	100%	100%	0%	0%	0%	100%	0%	0%	100%	0%	100%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	100%	100%	100%	100%	0%		
repair / renew %	100%	100%	100%	100%	100%	100%	0%	0%	0%	100%	100%	100%	100%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	
weight grams	12.0	6.9	0.1	14.1	-	4.0	5.0	2.6	0.1	126.0	0.1	0.1	-	-	-	10.0	2.0	2.0	-	3.6	137.0	3.0	-	-	-	-	-	-	-	-	6.1		
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	7.4	3.6	2.1	2.4	6.1		

recycled	12.0	6.9	0.0	11.3	0.0	0.0	0.0	0.0	0.0	126.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	137.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
recyclable	12.0	6.9	0.0	14.1	0.0	4.0	0.0	0.0	0.0	126.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	137.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
repair / renew	12.0	6.9	0.1	14.1	0.0	4.0	5.0	0.0	0.0	126.0	0.1	0.1	0.0	0.0	0.0	0.0	10.0	2.0	0.0	0.0	137.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
embodied carbon	0.004	0.031	0.000	0.034	0.000	0.011	0.001	0.001	0.000	0.263	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.286	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

total	293.2	94.3% recycled																311.0
total	300.0	96.8% recyclable																311.0
total	308.3	99.1% repair / renew																311.0
		0.65 embodied carbon																311.0
		provisional kg of co2																311.0

**circular product**

## air screw

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heat sink	heat sink finish	label	baffle	baffle paint	shield	case	spring/ballcatch	screws for springs	screws for fit	circlip	outer bezel	outer bezel paint	second outer bezel	second outer bezel p	inner bezel	inner bezel paint	recycled plaster plate	other steel	other aluminium	other recycled plastic	other non-recycled	COMPLETE PRODUCT	COMPLETE PRODUCT
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%	0%	
recyclable %	100%	100%	0%	100%	100%	100%	0%	0%	0%	100%	0%	0%	100%	0%	100%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	100%	100%	100%	100%	0%		
repair / renew %	100%	100%	100%	100%	100%	100%	0%	0%	0%	100%	100%	100%	100%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	
weight grams	12.0	6.9	0.1	14.1	-	4.0	5.0	2.6	0.1	126.0	0.1	0.1	-	-	-	10.0	2.0	2.0	-	3.6	137.0	3.0	-	-	-	-	-	-	-	-	6.1		
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	7.4	3.6	2.1	2.4	6.1		

recycled	12.0	6.9	0.0	11.3	0.0	0.0	0.0	0.0	0.0	126.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	137.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
recyclable	12.0	6.9	0.0	14.1	0.0	4.0	0.0	0.0	0.0	126.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	137.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
repair / renew	12.0	6.9	0.1	14.1	0.0	4.0	5.0	0.0	0.0	126.0	0.1	0.1	0.0	0.0	0.0	0.0	10.0	2.0	0.0	0.0	137.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
embodied carbon	0.004	0.031	0.000	0.034	0.000	0.011	0.001	0.001	0.000	0.263	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.286	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

total	293.2	94.3% recycled																311.0
total	300.0	96.8% recyclable																311.0
total	308.3	99.1% repair / renew																311.0
		0.65 embodied carbon																311.0
		provisional kg of co2																311.0

**circular product**



	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heat sink	heat sink finish	label	baffle	baffle paint	shield	case	spring/ballcatch	screws for springs	screws for tilt	circclip	outer bezel	outer bezel paint	second outer bezel	second outer bezel paint	inner bezel	inner bezel paint	recycled plaster plate	other steel	other aluminium	other recycled plastic	other non-recycled	COMPLETE PRODUCT	COMPLETE PRODUCT
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%		
recyclable %	100%	100%	0%	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%		
repair / renew %	100%	100%	100%	100%	100%	100%	100%	2.6	0.1	100%	0.1	0.1	100%	100%	100%	100%	100%	100%	100%	100%	137.0	3.0	-	-	100%	100%	100%	12.0	-	56.0			
weight grams	12.0	6.9	0.1	14.1	-	-	-	0.3	0.1	126.0	0.1	0.1	-	-	0.6	7.4	3.7	3.6	3.6	3.6	137.0	2.1	2.1	2.1	0.6	7.4	3.6	2.1	2.4	6.1			
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	2.1	2.4	6.1				
recycled	12.0	6.9	0.0	11.3	0.0	0.0	0.0	0.0	0.0	126.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	137.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.0	0.0			
recyclable	12.0	6.9	0.0	14.1	0.0	0.0	0.0	0.0	0.0	126.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	137.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.0	0.0			
repair / renew	12.0	6.9	0.1	14.1	0.0	0.0	0.0	0.0	0.0	126.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	137.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	12.0	0.0	0.0		
embodied carbon	0.004	0.031	0.000	0.034	0.000	0.000	0.000	0.001	0.000	0.263	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.286	0.002	0.000	0.000	0.000	0.000	0.000	0.025	0.000	0.344			

total	365.2	82.5%	recycled
total	306.0	83.2%	recyclable
total	311.2	84.1%	repair / renew
	0.64		embodied carbon provisional kg of co2

circular product

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heat sink	heat sink finish	label	baffle	baffle paint	shield	case	spring/ballcatch	screws for springs	screws for tilt	circclip	outer bezel	outer bezel paint	second outer bezel	second outer bezel paint	inner bezel	inner bezel paint	recycled plaster plate	other steel	other aluminium	other recycled plastic	other non-recycled	COMPLETE PRODUCT	COMPLETE PRODUCT
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%		
recyclable %	100%	100%	0%	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%		
repair / renew %	100%	100%	100%	100%	100%	100%	100%	3.4	0.1	100%	0.1	0.1	100%	100%	100%	100%	100%	100%	100%	100%	10.0	0.0	123.0	0.0	10.0	0.0	16.0	0.0	16.0	0.0	0.0		
weight grams	30.0	4.0	0.1	-	-	-	-	0.3	0.1	32.0	0.1	0.1	32.0	0.0	0.0	0.0	5.0	5.0	5.0	5.0	30.0	2.1	2.1	2.1	2.1	0.6	7.4	3.6	2.1	2.4	6.1		
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	2.1	2.4	6.1				
recycled	30.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	32.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	0.0	123.0	0.0	0.0	0.0	0.0	0.0	16.0	0.0			
recyclable	30.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	32.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0	10.0	0.0	123.0	0.0	0.0	0.0	0.0	0.0	16.0	0.0			
repair / renew	30.0	4.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	32.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0	10.0	0.0	123.0	0.0	0.0	0.0	0.0	0.0	16.0	0.0	0.0		
embodied carbon	0.009	0.030	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.016	0.000	0.000	0.000	0.021	0.000	0.256	0.000	0.000	0.000	0.000	0.000	0.033	0.000	0.000		

total	215.0	96.2%	recycled
total	220.0	96.4%	recyclable
total	220.1	98.4%	repair / renew
	0.40		embodied carbon provisional kg of co2

circular product

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heat sink	heat sink finish	label	baffle	baffle paint	shield	case	spring/ballcatch	screws for springs	screws for tilt	circclip	outer bezel	outer bezel paint	second outer bezel	second outer bezel paint	inner bezel	inner bezel paint	recycled plaster plate	other steel	other aluminium	other recycled plastic	other non-recycled	COMPLETE PRODUCT	COMPLETE PRODUCT
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%		
recyclable %	100%	100%	0%	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%		
repair / renew %	100%	100%	100%	100%	100%	100%	100%	3.4	0.1	100%	0.1	0.1	100%	100%	100%	100%	100%	100%	100%	100%	5.0	0.0	22.0	0.0	5.0	0.0	12.0	0.0	12.0	0.0	0.0		
weight grams	22.0	3.0	-	2.4	-	-	-	0.3	0.1	21.1	0.1	0.1	21.1	0.0	0.6	0.0	2.0	2.0	2.0	2.0	5.0	0.6	0.6	0.6	0.6	0.6	7.4	3.6	2.1	2.4	6.1		
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	2.1	2.4	6.1				
recycled	22.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	0.0	22.0	0.0	0.0	0.0	0.0	0.0	12.0	0.0			
recyclable	22.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21.1	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	5.0	0.0	22.0	0.0	0.0	0.0	0.0	0.0	12.0	0.0			
repair / renew	22.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21.1	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	5.0	0.0	22.0	0.0	0.0	0.0	0.0	0.0	12.0	0.0	0.0		
embodied carbon	0.007	0.022	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.007	0.000	0.000	0.000	0.007	0.000	0.000	0.000	0.010	0.000	0.046	0.000	0.000	0.000	0.000	0.000	0.025	0.000	0.000		

total	73.0	93.0%	recycled
total	75.0	95.5%	recyclable
total	75.0	95.5%	repair / renew
	0.11		embodied carbon provisional kg of co2

circular product





alta mini

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heat sink	heat sink finish	label	baffle	baffle paint	shield	case	springer/ballcatch	screws for springs	screws for fit	circclip	outer bezel	outer bezel paint	second other bezel	second outer bezel p	inner bezel	inner bezel paint	recycled plaster plate	other steel	other aluminium	other recycled plastic	other non-recycled
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	100%	0%	0%	0%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	0%	
recyclable %	100%	100%	0%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	0%	100%	100%	100%	100%	100%	100%	100%	0%	100%	100%	100%	100%	100%	100%	100%	0%	
repair / renew %	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	
weight grams	22.0	3.0	-	-	-	-	3.4	0.1	-	2.1	11.6	-	30.0	-	7.4	7.4	2.0	-	3.6	3.6	8.0	-	48.0	-	2.1	-	2.1	-	12.0	-	
co2 / kg	0.3	7.4	41	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	2.1	0.6	2.4	6.1	
recycled	22.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.0	0.0	48.0	0.0	0.0	0.0	0.0	0.0	12.0	0.0	
recyclable	22.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	8.0	0.0	48.0	0.0	0.0	0.0	0.0	0.0	12.0	0.0	
repair / renew	22.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	3.0	0.0	48.0	0.0	0.0	0.0	0.0	0.0	12.0	0.0	
embodied carbon	0.007	0.022	0.000	0.000	0.000	0.000	0.000	0.001	0.003	0.000	0.000	0.000	0.038	0.000	0.000	0.000	0.007	0.000	0.000	0.000	0.017	0.000	0.108	0.000	0.000	0.000	0.000	0.025	0.000	0.000	

COMPLETE PRODUCT	123.0
COMPLETE PRODUCT	123.0

**total** 123.0 **95.7%** recycled  
**total** 123.0 **97.3%** recyclable  
**total** 123.0 **97.3%** repair / renew  
**0.21** embodied carbon provisional kg of co2

circular product

alta plus

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heat sink	heat sink finish	label	baffle	baffle paint	shield	case	springer/ballcatch	screws for springs	screws for fit	circclip	outer bezel	outer bezel paint	second other bezel	second outer bezel p	inner bezel	inner bezel paint	recycled plaster plate	other steel	other aluminium	other recycled plastic	other non-recycled
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	100%	0%	0%	0%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	0%	
recyclable %	100%	100%	0%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	0%	100%	100%	100%	100%	100%	100%	100%	0%	100%	100%	100%	100%	100%	100%	100%	0%	
repair / renew %	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	
weight grams	40.0	6.9	-	-	-	-	3.4	0.1	-	2.1	11.6	-	94.0	-	7.4	7.4	5.0	-	3.6	3.6	15.0	-	281.0	-	2.1	-	2.1	-	24.0	-	
co2 / kg	0.3	7.4	41	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	2.1	0.6	2.4	6.1	
recycled	40.0	6.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	94.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.0	0.0	281.0	0.0	0.0	0.0	0.0	0.0	24.0	0.0	
recyclable	40.0	6.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	94.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0	15.0	0.0	281.0	0.0	0.0	0.0	0.0	0.0	24.0	0.0	
repair / renew	40.0	6.9	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	94.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0	15.0	0.0	281.0	0.0	0.0	0.0	0.0	0.0	24.0	0.0	
embodied carbon	0.012	0.081	0.000	0.000	0.000	0.000	0.000	0.001	0.008	0.000	0.000	0.000	0.183	0.000	0.000	0.000	0.018	0.000	0.000	0.000	0.031	0.000	0.588	0.000	0.000	0.000	0.000	0.050	0.000	0.000	

COMPLETE PRODUCT	469.5
COMPLETE PRODUCT	469.5

**total** 469.5 **98.2%** recycled  
**total** 469.5 **99.2%** recyclable  
**total** 469.5 **99.3%** repair / renew  
**0.88** embodied carbon provisional kg of co2

circular product

alta zero

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heat sink	heat sink finish	label	baffle	baffle paint	shield	case	springer/ballcatch	screws for springs	screws for fit	circclip	outer bezel	outer bezel paint	second other bezel	second outer bezel p	inner bezel	inner bezel paint	recycled plaster plate	other steel	other aluminium	other recycled plastic	other non-recycled
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	100%	0%	0%	0%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	0%	
recyclable %	100%	100%	0%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	0%	100%	100%	100%	100%	100%	100%	100%	0%	100%	100%	100%	100%	100%	100%	100%	0%	
repair / renew %	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	
weight grams	22.0	3.0	-	-	-	-	3.4	0.1	-	2.1	11.6	-	7.0	-	7.0	-	2.0	-	3.6	3.6	5.0	-	12.0	-	2.1	-	2.1	-	12.0	-	
co2 / kg	0.3	7.4	41	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	2.1	0.6	2.4	6.1	
recycled	22.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	0.0	12.0	0.0	0.0	0.0	0.0	0.0	12.0	0.0	
recyclable	22.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.0	0.0	0.0	0.0	2.0	1.0	0.0	0.0	5.0	0.0	12.0	0.0	0.0	0.0	0.0	0.0	12.0	0.0	
repair / renew	22.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.0	0.0	0.0	0.0	2.0	1.0	0.0	0.0	5.0	0.0	12.0	0.0	0.0	0.0	0.0	0.0	12.0	0.0	
embodied carbon	0.007	0.022	0.000	0.000	0.000	0.000	0.000	0.001	0.008	0.000	0.000	0.000	0.014	0.000	0.000	0.000	0.007	0.004	0.000	0.000	0.018	0.000	0.028	0.000	0.000	0.000	0.000	0.028	0.000	0.000	

COMPLETE PRODUCT	67.5
COMPLETE PRODUCT	67.5

**total** 67.5 **90.4%** recycled  
**total** 67.5 **94.8%** recyclable  
**total** 67.5 **94.8%** repair / renew  
**0.09** embodied carbon provisional kg of co2

circular product



**anelo**

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heat sink	heat sink finish	label	barrier	barrier paint	shield	capacitor	springer/hallcatch	screws for springs	screws for light	circclip	outer baseel	outer baseel paint	second outer baseel	second outer baseel paint	inner baseel	inner baseel paint	recycled plaster plask	other steel	other aluminium	other recycled plastic	other non-recycled
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%
recyclable %	100%	100%	0%	100%	100%	100%	100%	0%	0%	100%	0%	0%	100%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
repair / renew %	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
weight grams	26.0	16.0	0.2	156.4	0.0	0.0	0.0	0.0	0.0	430.0	0.0	0.0	64.0	0.0	61.6	0.0	0.0	0.0	0.0	0.0	83.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	7.4	3.6	2.1	2.4	6.1

total	839.0	87.4% recycled
total	931.0	97.0% recyclable
total	949.4	98.0% repair / renew
	2.51	embodied carbon provisional kg of co2

**circular product**

**arto**

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heat sink	heat sink finish	label	barrier	barrier paint	shield	capacitor	springer/hallcatch	screws for springs	screws for light	circclip	outer baseel	outer baseel paint	second outer baseel	second outer baseel paint	inner baseel	inner baseel paint	recycled plaster plask	other steel	other aluminium	other recycled plastic	other non-recycled
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%
recyclable %	100%	100%	0%	100%	100%	100%	100%	0%	0%	100%	0%	0%	100%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
repair / renew %	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
weight grams	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	119.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	7.4	3.6	2.1	2.4	6.1

total	119.0	70.4% recycled
total	119.0	71.6% recyclable
total	121.0	71.6% repair / renew
	0.26	embodied carbon provisional kg of co2

**circular product**

**camber adjustable**

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heat sink	heat sink finish	label	barrier	barrier paint	shield	capacitor	springer/hallcatch	screws for springs	screws for light	circclip	outer baseel	outer baseel paint	second outer baseel	second outer baseel paint	inner baseel	inner baseel paint	recycled plaster plask	other steel	other aluminium	other recycled plastic	other non-recycled
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%
recyclable %	100%	100%	0%	100%	100%	100%	100%	0%	0%	100%	0%	0%	100%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
repair / renew %	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
weight grams	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.3	0.1	103.0	0.1	0.1	21.6	1.5	6.0	5.0	-	-	1.0	4.0	111.0	1.5	-	-	22.0	-	22.0	-	-	-	-
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	7.4	3.6	2.1	2.4	6.1

total	258.1	89.0% recycled
total	314.4	96.2% recyclable
total	390.7	98.8% repair / renew
	0.86	embodied carbon provisional kg of co2

**circular product**



camber fixed

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heat sink	heat sink finish	label	baffle	baffle paint	shield	case	spring/ballcatch	screws for springs	screws for fit	circclip	outer bezel	outer bezel paint	second other bezel	second outer bezel pt	inner bezel	inner bezel paint	recycled plaster plate	other steel	other aluminium	other recycled plastic	other non-recycled							
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	80%	0%	0%	100%	80%	0%	0%						
recyclable %	100%	100%	0%	100%	100%	0%	0%	0%	0%	100%	0%	0%	100%	0%	100%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	100%	0%	0%	100%	100%	100%	0%	0%					
repair / renew %	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%			
weight grams	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.3	0.1	103.0	0.1	0.1	46.0	1.5	0.0	5.0	0.0	0.0	1.0	4.0	111.0	1.5	0.0	0.0	0.0	22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	7.4	3.6	2.1	2.4	6.1							
recycled	12.0	6.9	0.0	11.3	0.0	0.0	0.0	0.0	0.0	103.0	0.0	0.0	46.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	111.0	0.0	0.0	0.0	0.0	17.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
recyclable	12.0	6.9	0.0	14.1	0.9	4.0	0.0	0.0	0.0	103.0	0.0	0.0	46.0	0.0	0.0	5.0	0.0	0.0	1.0	4.0	111.0	0.0	0.0	0.0	0.0	22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
repair / renew	12.0	6.9	0.1	14.1	0.9	4.0	5.0	0.0	0.0	103.0	0.1	0.1	46.0	1.5	0.0	5.0	0.0	0.0	1.0	4.0	111.0	1.5	0.0	0.0	0.0	22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
embodied carbon	0.004	0.051	0.000	0.034	0.007	0.011	0.001	0.001	0.000	0.215	0.001	0.001	0.059	0.001	0.000	0.037	0.000	0.000	0.004	0.014	0.231	0.001	0.000	0.000	0.000	0.162	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
total	307.6									307.6			46.0								111.0					17.6												
total	307.6									307.6			46.0								111.0					17.6												
total	328.2									328.2			46.0								4.0	111.0				22.0												
total	328.2									328.2			46.0								4.0	111.0				22.0												
embodied carbon	0.86									0.86			0.06								0.04	0.014				0.001												

total 307.6 89.9% recycled

total 328.2 96.4% recyclable

total 328.2 98.8% repair / renew

0.86 embodied carbon provisional kg of co2

circular product

camber mini adjustable

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heat sink	heat sink finish	label	baffle	baffle paint	shield	case	spring/ballcatch	screws for springs	screws for fit	circclip	outer bezel	outer bezel paint	second other bezel	second outer bezel pt	inner bezel	inner bezel paint	recycled plaster plate	other steel	other aluminium	other recycled plastic	other non-recycled									
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	80%	0%	0%	100%	80%	0%	0%								
recyclable %	100%	100%	0%	100%	100%	0%	0%	0%	0%	100%	0%	0%	100%	0%	100%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	100%	0%	0%	100%	100%	100%	0%	0%							
repair / renew %	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%			
weight grams	-	4.4	0.1	10.0	-	4.0	5.0	3.4	0.1	55.0	0.1	0.1	15.0	1.0	2.0	3.0	2.0	0.0	1.0	0.0	41.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	7.4	3.6	2.1	2.4	6.1									
recycled	0.0	4.4	0.0	8.0	0.0	0.0	0.0	0.0	0.0	55.0	0.0	0.0	15.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0	41.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
recyclable	0.0	4.4	0.0	10.0	0.0	4.0	0.0	0.0	0.0	55.0	0.0	0.0	15.0	0.0	2.0	3.0	2.0	0.0	1.0	0.0	41.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
repair / renew	0.0	4.4	0.1	10.0	0.0	4.0	5.0	0.0	0.0	55.0	0.1	0.1	15.0	1.0	2.0	3.0	2.0	0.0	1.0	0.0	41.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
embodied carbon	0.000	0.033	0.000	0.024	0.000	0.011	0.001	0.001	0.000	0.115	0.001	0.001	0.029	0.001	0.015	0.022	0.007	0.000	0.004	0.000	0.085	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.074		
total	126.0									126.0			15.0								41.0																			
total	126.0									126.0			15.0								41.0																			
total	137.4									137.4			15.0								4.0	41.0																		
total	145.2									145.2			15.0								4.0	41.0																		
embodied carbon	0.35									0.35			0.06								0.04	0.000																		

total 126.0 77.8% recycled

total 137.4 85.5% recyclable

total 145.2 90.4% repair / renew

0.35 embodied carbon provisional kg of co2

circular product

camber mini fixed

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heat sink	heat sink finish	label	baffle	baffle paint	shield	case	spring/ballcatch	screws for springs	screws for fit	circclip	outer bezel	outer bezel paint	second other bezel	second outer bezel pt	inner bezel	inner bezel paint	recycled plaster plate	other steel	other aluminium	other recycled plastic	other non-recycled											
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	80%	0%	0%	100%	80%	0%	0%										
recyclable %	100%	100%	0%	100%	100%	0%	0%	0%	0%	100%	0%	0%	100%	0%	100%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	100%	0%	0%	100%	100%	100%	0%	0%									
repair / renew %	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%			
weight grams	-	4.4	0.1	10.0	-	4.0	5.0	3.4	0.1	55.0	0.1	0.1	15.0	1.0	2.0	3.0	2.0	0.0	1.0	0.0	41.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	7.4	3.6	2.1	2.4	6.1											
recycled	0.0	4.4	0.0	8.0	0.0	0.0	0.0	0.0	0.0	55.0	0.0	0.0	15.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	41.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
recyclable	0.0	4.4	0.0	10.0	0.0	4.0	0.0	0.0	0.0	55.0	0.0	0.0	15.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	41.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
repair / renew	0.0	4.4	0.1	10.0	0.0	4.0	5.0	0.0	0.0	55.0	0.1	0.1	15.0	1.0	2.0	3.0	2.0	0.0	1.0	0.0	41.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
embodied carbon	0.000	0.033	0.000	0.024	0.000	0.011	0.001	0.001	0.000	0.115	0.001	0.001	0.029	0.001	0.015	0.022	0.007	0.000	0.004	0.000	0.085	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.074			
total	123.4									123.4			15.0								41.0																					
total	123.4									123.4			15.0								4.0	41.0																				
total	130.4									130.4			15.0								4.0	41.0																				
total	138.2									138.2			15.0					</																								

**cero 1001/100p**

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heat sink	heat sink finish	label	baffle	baffle paint	shield	case	springer/ballcatch	screws for springs	screws for fit	circclip	outer baseel	outer baseel paint	second other baseel	second outer baseel pt	inner baseel	inner baseel paint	recycled plaster plank	other steel	other aluminium	other recycled plank	other non-recycled	COMPLETE PRODUCT	COMPLETE PRODUCT		
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	100%	100%	100%	100%	100%	0%	80%	0%	100%	100%	80%	0%				
recyclable %	100%	100%	0%	100%	100%	100%	100%	0%	0%	100%	0%	0%	100%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	100%	100%	100%	100%	100%	0%				
repair / renew %	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%			
weight grams	4.4	0.1	8.0	0.0	4.0	5.0	3.4	0.1	95.0	0.1	0.1	49.0	2.0	0.0	0.0	3.0	2.0	0.0	0.0	49.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	7.4	3.6	2.1	2.4	6.1				
embodied carbon	0.000	0.033	0.000	0.019	0.000	0.011	0.001	0.000	0.115	0.001	0.001	0.095	0.001	0.000	0.000	0.011	0.007	0.000	0.000	0.102	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
recycled	0.0	4.4	0.0	6.4	0.0	0.0	0.0	0.0	55.0	0.0	0.0	49.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	49.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
recyclable	0.0	4.4	0.0	8.0	0.0	4.0	0.0	0.0	55.0	0.0	0.0	49.0	0.0	0.0	0.0	3.0	2.0	0.0	0.0	49.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
repair / renew	0.0	4.4	0.1	8.0	0.0	4.0	5.0	0.0	95.0	0.1	0.1	49.0	2.0	0.0	0.0	3.0	2.0	0.0	0.0	49.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
embodied carbon	0.000	0.033	0.000	0.019	0.000	0.011	0.001	0.000	0.115	0.001	0.001	0.095	0.001	0.000	0.000	0.011	0.007	0.000	0.000	0.102	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>total</b>																											<b>163.8</b>	<b>173.4</b>	<b>183.2</b>	<b>0.40</b>	<b>87.7%</b> recycled	<b>93.4%</b> recyclable	<b>98.1%</b> repair / renew	<b>0.40</b> embodied carbon provisional kg of co2	

**circular product**

**cero origin**

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heat sink	heat sink finish	label	baffle	baffle paint	shield	case	springer/ballcatch	screws for springs	screws for fit	circclip	outer baseel	outer baseel paint	second other baseel	second outer baseel pt	inner baseel	inner baseel paint	recycled plaster plank	other steel	other aluminium	other recycled plank	other non-recycled	COMPLETE PRODUCT	COMPLETE PRODUCT		
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	100%	100%	100%	100%	100%	0%	80%	0%	100%	100%	80%	0%				
recyclable %	100%	100%	0%	100%	100%	100%	100%	0%	0%	100%	0%	0%	100%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	100%	100%	100%	100%	100%	0%				
repair / renew %	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%		
weight grams	4.4	0.1	10.0	0.0	4.0	5.0	3.4	0.1	95.0	0.1	0.1	0.0	0.0	0.0	3.0	2.0	2.0	0.0	0.0	24.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.0	6.1	
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	7.4	3.6	2.1	2.4	6.1				
embodied carbon	0.000	0.033	0.000	0.024	0.000	0.011	0.001	0.001	0.115	0.001	0.001	0.000	0.000	0.000	0.000	0.022	0.007	0.007	0.000	0.000	0.050	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.074	0.074	
recycled	0.0	4.4	0.0	8.0	0.0	0.0	0.0	0.0	55.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
recyclable	0.0	4.4	0.0	10.0	0.0	4.0	0.0	0.0	55.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	2.0	2.0	0.0	24.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
repair / renew	0.0	4.4	0.1	10.0	0.0	4.0	5.0	0.0	95.0	0.1	0.1	0.0	0.0	0.0	3.0	2.0	2.0	0.0	0.0	24.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
embodied carbon	0.000	0.033	0.000	0.024	0.000	0.011	0.001	0.001	0.115	0.001	0.001	0.000	0.000	0.000	0.000	0.022	0.007	0.007	0.000	0.000	0.050	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.074	0.074
<b>total</b>																											<b>91.4</b>	<b>104.4</b>	<b>111.2</b>	<b>0.27</b>	<b>72.1%</b> recycled	<b>82.4%</b> recyclable	<b>87.8%</b> repair / renew	<b>0.27</b> embodied carbon provisional kg of co2	

**circular product**

**clarin**

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heat sink	heat sink finish	label	baffle	baffle paint	shield	case	springer/ballcatch	screws for springs	screws for fit	circclip	outer baseel	outer baseel paint	second other baseel	second outer baseel pt	inner baseel	inner baseel paint	recycled plaster plank	other steel	other aluminium	other recycled plank	other non-recycled	COMPLETE PRODUCT	COMPLETE PRODUCT		
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	100%	100%	100%	100%	100%	0%	80%	0%	100%	100%	80%	0%				
recyclable %	100%	100%	0%	100%	100%	100%	100%	0%	0%	100%	0%	0%	100%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	100%	100%	100%	100%	100%	0%				
repair / renew %	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%		
weight grams	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	0.0	0.0	0.0	3.0	1.0	0.0	0.0	56.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.0	6.1	
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	7.4	3.6	2.1	2.4	6.1				
embodied carbon	0.004	0.081	0.000	0.034	0.007	0.011	0.001	0.001	0.008	0.218	0.001	0.001	0.000	0.000	0.000	0.011	0.004	0.000	0.000	0.117	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
recycled	12.0	6.9	0.0	11.3	0.0	0.0	0.0	0.0	103.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	56.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
recyclable	12.0	6.9	0.0	14.1	0.9	4.0	0.0	0.0	103.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	1.0	0.0	0.0	56.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
repair / renew	12.0	6.9	0.1	14.1	0.9	4.0	5.0	0.0	103.0	0.1	0.1	0.0	0.0	0.0	0.0	3.0	1.0	0.0	0.0	56.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
embodied carbon	0.004	0.081	0.000	0.034	0.007	0.011	0.001	0.001	0.008	0.218	0.001	0.001	0.000	0.000	0.000	0.011	0.004	0.000	0.000	0.117	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>total</b>																											<b>189.2</b>	<b>200.9</b>	<b>207.2</b>	<b>0.46</b>	<b>89.6%</b> recycled	<b>95.1%</b> recyclable	<b>98.1%</b> repair / renew	<b>0.46</b> embodied carbon provisional kg of co2	

**circular product**



casdro adjustable

	glass lens	reflector	reflector finish	engine body	engine band	iv cable core	iv cable insulation	pcb	LED	heat sink	heat sink finish	label	baffle	baffle paint	shield	case	spring/ballcatch	screws for springs	screws for tilt	circclip	outer base	outer base paint	second outer base	second outer base paint	inner base	inner base paint	recycled plastic plate	other steel	other aluminium	other recycled plastic	other non-recycled	COMPLETE PRODUCT	COMPLETE PRODUCT	
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%	0%		
recyclable %	100%	100%	0%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%		
repair / renew %	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	
weight grams	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	4.0	15	20.0	5.0	3.0	1.0	1.0	4.0	36.0	10	10	10	4.0	36.0	10	10	0.0	0.0	0.0	0.0		
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	7.4	3.6	2.1	2.4	6.1			
recycled	12.0	6.9	0.0	11.3	0.0	0.0	0.0	0.0	0.0	103.0	0.0	0.0	4.0	0.0	16.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
recyclable	12.0	6.9	0.0	14.1	0.9	4.0	0.0	0.0	0.0	103.0	0.0	0.0	4.0	0.0	20.0	5.0	3.0	1.0	1.0	4.0	36.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
repair / renew	12.0	6.9	0.1	14.1	0.9	4.0	5.0	0.0	0.0	103.0	0.1	0.1	4.0	1.5	20.0	5.0	3.0	1.0	1.0	4.0	36.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
embodied carbon	0.004	0.001	0.000	0.034	0.007	0.011	0.001	0.001	0.000	0.215	0.001	0.001	0.008	0.001	0.147	0.037	0.011	0.004	0.004	0.014	0.075	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

total 189.2 83.4% recycled  
total 214.5 94.8% recyclable  
total 222.7 98.2% repair / renew  
0.63 embodied carbon provisional kg of co2

circular product

casdro twin

	glass lens	reflector	reflector finish	engine body	engine band	iv cable core	iv cable insulation	pcb	LED	heat sink	heat sink finish	label	baffle	baffle paint	shield	case	spring/ballcatch	screws for springs	screws for tilt	circclip	outer base	outer base paint	second outer base	second outer base paint	inner base	inner base paint	recycled plastic plate	other steel	other aluminium	other recycled plastic	other non-recycled	COMPLETE PRODUCT	COMPLETE PRODUCT		
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%	0%			
recyclable %	100%	100%	0%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%		
repair / renew %	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%
weight grams	24.0	13.8	0.2	28.2	1.8	8.0	10.0	7.8	0.2	206.0	0.2	0.2	8.0	3.0	40.0	10.0	6.0	2.0	2.0	8.0	97.0	15	15	15	15	15	15	15	15	15	0.0	0.0			
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	7.4	3.6	2.1	2.4	6.1				
recycled	24.0	13.8	0.0	22.6	0.0	0.0	0.0	0.0	0.0	206.0	0.0	0.0	8.0	0.0	32.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
recyclable	24.0	13.8	0.0	28.2	1.8	8.0	0.0	0.0	0.0	206.0	0.0	0.0	8.0	0.0	40.0	10.0	6.0	2.0	2.0	8.0	97.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
repair / renew	24.0	13.8	0.2	28.2	1.8	8.0	10.0	0.0	0.0	206.0	0.2	0.2	8.0	3.0	40.0	10.0	6.0	2.0	2.0	8.0	97.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
embodied carbon	0.007	0.102	0.001	0.068	0.015	0.021	0.003	0.003	0.000	0.429	0.002	0.001	0.016	0.002	0.294	0.074	0.022	0.007	0.007	0.029	0.202	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		

total 403.4 84.4% recycled  
total 451.3 95.2% recyclable  
total 469.9 98.3% repair / renew  
1.31 embodied carbon provisional kg of co2

circular product

curve adjustable

	glass lens	reflector	reflector finish	engine body	engine band	iv cable core	iv cable insulation	pcb	LED	heat sink	heat sink finish	label	baffle	baffle paint	shield	case	spring/ballcatch	screws for springs	screws for tilt	circclip	outer base	outer base paint	second outer base	second outer base paint	inner base	inner base paint	recycled plastic plate	other steel	other aluminium	other recycled plastic	other non-recycled	COMPLETE PRODUCT	COMPLETE PRODUCT			
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%	0%				
recyclable %	100%	100%	0%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%			
repair / renew %	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	
weight grams	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	20.0	1.5	0.0	5.0	3.0	1.0	1.0	0.0	74.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	7.4	3.6	2.1	2.4	6.1					
recycled	12.0	6.9	0.0	11.3	0.0	0.0	0.0	0.0	0.0	103.0	0.0	0.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	74.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
recyclable	12.0	6.9	0.0	14.1	0.9	4.0	0.0	0.0	0.0	103.0	0.0	0.0	20.0	0.0	0.0	5.0	3.0	1.0	1.0	0.0	74.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
repair / renew	12.0	6.9	0.1	14.1	0.9	4.0	5.0	0.0	0.0	103.0	0.1	0.1	20.0	1.5	0.0	5.0	3.0	1.0	1.0	0.0	74.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
embodied carbon	0.004	0.001	0.000	0.034	0.007	0.011	0.001	0.001	0.000	0.215	0.001	0.001	0.039	0.001	0.000	0.037	0.011	0.004	0.004	0.000	0.154	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		

total 227.2 88.3% recycled  
total 244.9 95.2% recyclable  
total 253.2 98.4% repair / renew  
0.58 embodied carbon provisional kg of co2

circular product



curve fixed

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heatstick	heatstick finish	label	barflie	barflie paint	shield	capac	spring/hairlatch	screws for springs	screws for lht	circclip	outer baseel	outer baseel paint	second other baseel	second outer baseel pa	inner baseel	inner baseel paint	recycled plaster plate	other steel	other aluminium	other recycled plastic	other non-recycled
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%
recyclable %	100%	100%	0%	100%	100%	100%	100%	0%	0%	100%	0%	0%	100%	0%	100%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%
repair / renew %	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%
weight grams	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	-	-	-	-	4.0	10	-	-	100.0	15	-	-	-	-	-	-	-	-	0%
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	3.6	2.1	2.4	6.1	

COMPLETE PRODUCT	256.7
COMPLETE PRODUCT	

total	233.2	90.8% recycled
total	245.9	95.8% recyclable
total	292.7	98.4% repair / renew
0.55 embodied carbon provisional kg of co2		

circular product

curve mini adjustable

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heatstick	heatstick finish	label	barflie	barflie paint	shield	capac	spring/hairlatch	screws for springs	screws for lht	circclip	outer baseel	outer baseel paint	second other baseel	second outer baseel pa	inner baseel	inner baseel paint	recycled plaster plate	other steel	other aluminium	other recycled plastic	other non-recycled
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%
recyclable %	100%	100%	0%	100%	100%	100%	100%	0%	0%	100%	0%	0%	100%	0%	100%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%
repair / renew %	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%
weight grams	-	4.4	0.1	10.0	-	4.0	5.0	3.4	0.1	55.0	0.1	0.1	15.0	1.0	2.0	3.0	2.0	2.0	1.0	-	24.0	15	-	-	-	-	-	-	-	-	12.0
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	3.6	2.1	2.4	6.1	

COMPLETE PRODUCT	145.7
COMPLETE PRODUCT	

total	108.0	74.1% recycled
total	122.4	84.0% recyclable
total	150.2	89.4% repair / renew
0.28 embodied carbon provisional kg of co2		

circular product

curve mini fixed

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heatstick	heatstick finish	label	barflie	barflie paint	shield	capac	spring/hairlatch	screws for springs	screws for lht	circclip	outer baseel	outer baseel paint	second other baseel	second outer baseel pa	inner baseel	inner baseel paint	recycled plaster plate	other steel	other aluminium	other recycled plastic	other non-recycled
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%
recyclable %	100%	100%	0%	100%	100%	100%	100%	0%	0%	100%	0%	0%	100%	0%	100%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%
repair / renew %	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%
weight grams	-	4.4	0.1	10.0	-	4.0	5.0	3.4	0.1	55.0	0.1	0.1	15.0	1.0	2.0	3.0	2.0	2.0	1.0	-	24.0	15	-	-	-	-	-	-	-	-	12.0
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	3.6	2.1	2.4	6.1	

COMPLETE PRODUCT	159.7
COMPLETE PRODUCT	

total	106.4	76.2% recycled
total	116.4	83.3% recyclable
total	124.2	88.9% repair / renew
0.28 embodied carbon provisional kg of co2		

circular product



curve recessed fixed

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heat sink	heat sink finish	label	baffle	baffle paint	shield	case	spring/ballcatch	screws for springs	screws for fit	circclip	outer bezel	outer bezel paint	second other bezel	second outer bezel pl	inner bezel	inner bezel paint	recycled plaster plate	other steel	other aluminium	other recycled plastic	other non-recycled	COMPLETE PRODUCT	COMPLETE PRODUCT				
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%	0%					
recyclable %	100%	100%	0%	100%	100%	100%	0%	0%	0%	100%	0%	0%	100%	0%	100%	100%	100%	100%	100%	100%	100%	0%	100%	0%	100%	0%	100%	100%	100%	100%	0%	0%					
repair / renew %	100%	100%	100%	100%	100%	100%	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%				
weight grams	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	46.0	1.0	-	3.0	1.0	-	-	3.0	1.0	-	-	-	-	-	100.0	1.5	-	-	-	-	302.7	302.7			
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	0.1	2.1	11.6	6.1	1.9	0.6	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	7.4	3.6	2.1	2.4	6.1						
embodied carbon	0.004	0.051	0.000	0.034	0.007	0.011	0.001	0.001	0.009	0.215	0.001	0.001	0.089	0.001	0.000	0.000	0.011	0.004	0.000	0.000	0.028	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.64	0.64		
recycled	12.0	6.9	0.0	11.3	0.0	0.0	0.0	0.0	0.0	103.0	0.0	0.0	46.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	279.2	279.2		
recyclable	12.0	6.9	0.0	14.1	0.9	4.0	0.0	0.0	0.0	103.0	0.0	0.0	46.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	293.9	293.9	
repair / renew	12.0	6.9	0.1	14.1	0.9	4.0	5.0	0.0	0.0	103.0	0.1	0.1	46.0	1.0	0.0	0.0	3.0	1.0	0.0	0.0	100.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	298.7	298.7

**total** 279.2 **92.2%** recycled

**total** 293.9 **96.1%** recyclable

**total** 298.7 **98.7%** repair / renew

**0.64** embodied carbon provisional kg of co2

**circular product**

dino adjustable

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heat sink	heat sink finish	label	baffle	baffle paint	shield	case	spring/ballcatch	screws for springs	screws for fit	circclip	outer bezel	outer bezel paint	second other bezel	second outer bezel pl	inner bezel	inner bezel paint	recycled plaster plate	other steel	other aluminium	other recycled plastic	other non-recycled	COMPLETE PRODUCT	COMPLETE PRODUCT					
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%	0%						
recyclable %	100%	100%	0%	100%	100%	100%	0%	0%	0%	100%	0%	0%	100%	0%	100%	100%	100%	100%	100%	100%	100%	0%	100%	0%	100%	0%	100%	100%	100%	100%	0%	0%						
repair / renew %	100%	100%	100%	100%	100%	100%	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%					
weight grams	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	15.0	1.0	15.0	5.0	3.0	1.0	1.0	4.0	20.0	1.0	-	-	18.0	1.0	-	-	-	-	-	-	235.2	235.2				
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	0.1	2.1	11.6	6.1	1.9	0.6	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	7.4	3.6	2.1	2.4	6.1							
embodied carbon	0.004	0.051	0.000	0.034	0.007	0.011	0.001	0.001	0.009	0.215	0.001	0.001	0.029	0.001	0.110	0.037	0.011	0.004	0.004	0.014	0.042	0.001	0.000	0.000	0.038	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.62	0.62			
recycled	12.0	6.9	0.0	11.3	0.0	0.0	0.0	0.0	0.0	103.0	0.0	0.0	15.0	0.0	12.0	0.0	0.0	0.0	0.0	0.0	20.0	0.0	0.0	0.0	18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	198.2	198.2		
recyclable	12.0	6.9	0.0	14.1	0.9	4.0	0.0	0.0	0.0	103.0	0.0	0.0	15.0	0.0	15.0	5.0	3.0	1.0	1.0	4.0	20.0	0.0	0.0	0.0	18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	229.9	229.9	
repair / renew	12.0	6.9	0.1	14.1	0.9	4.0	5.0	0.0	0.0	103.0	0.1	0.1	15.0	1.0	15.0	5.0	3.0	1.0	1.0	4.0	20.0	1.0	0.0	0.0	18.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	231.2	231.2

**total** 198.2 **84.5%** recycled

**total** 229.9 **94.8%** recyclable

**total** 231.2 **98.3%** repair / renew

**0.62** embodied carbon provisional kg of co2

**circular product**

dino fixed

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heat sink	heat sink finish	label	baffle	baffle paint	shield	case	spring/ballcatch	screws for springs	screws for fit	circclip	outer bezel	outer bezel paint	second other bezel	second outer bezel pl	inner bezel	inner bezel paint	recycled plaster plate	other steel	other aluminium	other recycled plastic	other non-recycled	COMPLETE PRODUCT	COMPLETE PRODUCT					
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%	0%						
recyclable %	100%	100%	0%	100%	100%	100%	0%	0%	0%	100%	0%	0%	100%	0%	100%	100%	100%	100%	100%	100%	100%	0%	100%	0%	100%	0%	100%	100%	100%	100%	0%	0%						
repair / renew %	100%	100%	100%	100%	100%	100%	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%					
weight grams	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	22.0	1.5	-	7.4	3.0	1.0	-	-	74.0	1.0	1.0	1.0	2.1	0.6	-	-	-	-	-	-	252.7	252.7				
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	0.1	2.1	11.6	6.1	1.9	0.6	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	7.4	3.6	2.1	2.4	6.1							
embodied carbon	0.004	0.051	0.000	0.034	0.007	0.011	0.001	0.001	0.009	0.215	0.001	0.001	0.043	0.001	0.000	0.000	0.011	0.004	0.000	0.000	0.154	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.64	0.64			
recycled	12.0	6.9	0.0	11.3	0.0	0.0	0.0	0.0	0.0	103.0	0.0	0.0	22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	74.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	229.2	229.2	
recyclable	12.0	6.9	0.0	14.1	0.9	4.0	0.0	0.0	0.0	103.0	0.0	0.0	22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	74.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	240.9	240.9
repair / renew	12.0	6.9	0.1	14.1	0.9	4.0	5.0	0.0	0.0	103.0	0.1	0.1	22.0	1.5	0.0	0.0	3.0	1.0	0.0	0.0	74.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	248.7	248.7

**total** 229.2 **90.7%** recycled

**total** 240.9 **95.3%** recyclable

**total** 248.7 **98.4%** repair / renew

**0.64** embodied carbon provisional kg of co2

**circular product**



dino twin

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heat sink	heat sink finish	label	baffle	baffle paint	shield	capse	springer/ballcatch	screws for springs	screws for fit	circclip	outer bezel	outer bezel paint	second other bezel	second other bezel p	inner bezel	inner bezel paint	recycled plaster plate	other steel	other aluminium	other recycled plastic	other non-recycled	COMPLETE PRODUCT	COMPLETE PRODUCT
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	100%	0%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%	0%	
recyclable %	100%	100%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%		
repair / renew %	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%		
weight grams	24.0	13.8	0.2	28.2	1.8	8.0	10.0	0.0	0.0	206.0	0.2	0.2	30.0	2.0	30.0	0.0	6.0	2.0	2.0	8.0	62.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	2.1	3.6	2.1	2.4	6.1		
recycled	24.0	13.8	0.0	22.6	0.0	0.0	0.0	0.0	0.0	206.0	0.0	0.0	30.0	0.0	24.0	0.0	0.0	0.0	0.0	0.0	62.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
recyclable	24.0	13.8	0.0	28.2	1.8	8.0	0.0	0.0	0.0	206.0	0.0	0.0	30.0	0.0	30.0	0.0	6.0	2.0	2.0	8.0	62.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
repair / renew	24.0	13.8	0.2	28.2	1.8	8.0	10.0	0.0	0.0	206.0	0.2	0.2	30.0	2.0	30.0	0.0	6.0	2.0	2.0	8.0	62.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
embodied carbon	0.007	0.102	0.001	0.068	0.013	0.021	0.003	0.003	0.000	0.429	0.002	0.001	0.038	0.001	0.221	0.000	0.022	0.007	0.007	0.029	0.129	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			

total 382.4 86.0% recycled

total 421.8 94.9% recyclable

total 436.4 98.2% repair / renew

1.13 embodied carbon provisional kg of co2

circular product

duet

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heat sink	heat sink finish	label	baffle	baffle paint	shield	capse	springer/ballcatch	screws for springs	screws for fit	circclip	outer bezel	outer bezel paint	second other bezel	second other bezel p	inner bezel	inner bezel paint	recycled plaster plate	other steel	other aluminium	other recycled plastic	other non-recycled	COMPLETE PRODUCT	COMPLETE PRODUCT
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	100%	0%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%	0%	
recyclable %	100%	100%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%		
repair / renew %	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	
weight grams	-	22.0	-	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	-	-	-	3.0	1.0	1.0	-	39.0	2.0	-	-	2.1	0.6	2.1	0.6	2.1	3.6	2.1	2.4	6.1	
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	2.1	3.6	2.1	2.4	6.1		
recycled	0.0	22.0	0.0	11.3	0.0	0.0	0.0	0.0	0.0	103.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	99.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
recyclable	0.0	22.0	0.0	14.1	0.9	4.0	0.0	0.0	0.0	103.0	0.0	0.0	0.0	0.0	0.0	3.0	1.0	0.0	0.0	99.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
repair / renew	0.0	22.0	0.0	14.1	0.9	4.0	5.0	0.0	0.0	103.0	0.1	0.1	0.0	0.0	0.0	3.0	1.0	0.0	0.0	99.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
embodied carbon	0.000	0.163	0.000	0.034	0.007	0.011	0.001	0.001	0.000	0.215	0.001	0.001	0.000	0.000	0.000	0.011	0.004	0.000	0.000	0.206	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			

total 235.3 91.1% recycled

total 247.0 95.7% recyclable

total 254.2 98.5% repair / renew

0.66 embodied carbon provisional kg of co2

circular product

elis

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heat sink	heat sink finish	label	baffle	baffle paint	shield	capse	springer/ballcatch	screws for springs	screws for fit	circclip	outer bezel	outer bezel paint	second other bezel	second other bezel p	inner bezel	inner bezel paint	recycled plaster plate	other steel	other aluminium	other recycled plastic	other non-recycled	COMPLETE PRODUCT	COMPLETE PRODUCT
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	100%	0%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%	0%	
recyclable %	100%	100%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%		
repair / renew %	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	
weight grams	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	16.0	12.0	128.0	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	2.1	0.6	2.1	0.6	2.1	0.6	2.1	3.6	2.1	2.4	6.1		
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	16.0	12.0	128.0	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	2.1	0.6	2.1	0.6	2.1	0.6	2.1	3.6	2.1	2.4	6.1		
recycled	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	128.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
recyclable	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	128.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
repair / renew	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	128.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
embodied carbon	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.008	0.002	0.267	0.000	0.000	0.000	0.000	0.000	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			

total 128.0 67.9% recycled

total 130.0 69.0% recyclable

total 150.0 69.0% repair / renew

0.28 embodied carbon provisional kg of co2

circular product





fade adjustable

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heat sink	heat sink finish	label	baffle	baffle paint	shield	case	spring/ballcatch	screws for springs	screws for fit	circclip	outer bezel	outer bezel paint	second other bezel	second outer bezel p	inner bezel	inner bezel paint	recycled plastic plank	other steel	other aluminium	other recycled plastic	other non-recycled					
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	100%	100%	0%	100%	100%	0%	80%	0%	100%	80%	0%	0%	0%	0%			
recyclable %	100%	100%	0%	100%	100%	100%	100%	0%	0%	100%	0%	0%	100%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%		
repair / renew %	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
weight grams	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	21.5	1.5	6.0	5.0	-	-	1.0	4.0	82.0	1.0	-	-	-	22.0	20.0	-	-	-	-	-	-	-	-	
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	7.4	3.6	2.1	2.4	6.1	-	-	-	-	

COMPLETE PRODUCT
314.2

total 259.1 82.5% recycled

total 302.4 96.2% recyclable

total 310.2 98.7% repair / renew

0.80 embodied carbon provisional kg of co2

circular product

fade fixed

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heat sink	heat sink finish	label	baffle	baffle paint	shield	case	spring/ballcatch	screws for springs	screws for fit	circclip	outer bezel	outer bezel paint	second other bezel	second outer bezel p	inner bezel	inner bezel paint	recycled plastic plank	other steel	other aluminium	other recycled plastic	other non-recycled						
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	100%	100%	0%	100%	100%	0%	80%	0%	100%	80%	0%	0%	0%	0%	0%	0%		
recyclable %	100%	100%	0%	100%	100%	100%	100%	0%	0%	100%	0%	0%	100%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
repair / renew %	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
weight grams	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	22.0	1.5	6.0	5.0	-	-	1.0	4.0	99.0	1.0	-	-	-	22.0	20.0	-	-	-	-	-	-	-	-		
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	7.4	3.6	2.1	2.4	6.1	-	-	-	-		

COMPLETE PRODUCT
315.7

total 271.8 86.1% recycled

total 303.9 96.3% recyclable

total 311.7 98.7% repair / renew

0.74 embodied carbon provisional kg of co2

circular product

fade mini adjustable

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heat sink	heat sink finish	label	baffle	baffle paint	shield	case	spring/ballcatch	screws for springs	screws for fit	circclip	outer bezel	outer bezel paint	second other bezel	second outer bezel p	inner bezel	inner bezel paint	recycled plastic plank	other steel	other aluminium	other recycled plastic	other non-recycled						
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	100%	100%	0%	100%	100%	0%	80%	0%	100%	80%	0%	0%	0%	0%	0%	0%	0%	
recyclable %	100%	100%	0%	100%	100%	100%	100%	0%	0%	100%	0%	0%	100%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
repair / renew %	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
weight grams	4.4	0.1	10.0	-	4.0	5.0	3.4	0.1	55.0	0.1	11.6	6.1	15.0	1.0	2.0	3.0	-	-	1.0	1.0	32.0	1.5	-	-	2.1	0.6	7.4	3.6	2.1	2.4	6.1	12.0	-	-	-	-	
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	7.4	3.6	2.1	2.4	6.1	12.0	-	-	-	-	

COMPLETE PRODUCT
149.7

total 116.0 77.5% recycled

total 126.4 84.4% recyclable

total 134.2 89.6% repair / renew

0.32 embodied carbon provisional kg of co2

circular product



fade mini fixed

Table with 26 columns (materials) and 6 rows (recycled %, recyclable %, repair/renew %, weight grams, CO2/kg, recycled, recyclable, repair/renew, embodied carbon).

Summary table for fade mini fixed showing total weight and complete product weight.

total 114.4 79.6% recycled
total 120.4 83.8% recyclable
total 126.2 89.2% repair / renew
0.28 embodied carbon provisional kg of co2

circular product

fade twin

Table with 26 columns (materials) and 6 rows (recycled %, recyclable %, repair/renew %, weight grams, CO2/kg, recycled, recyclable, repair/renew, embodied carbon).

Summary table for fade twin showing total weight and complete product weight.

total 518.2 87.9% recycled
total 564.8 95.8% recyclable
total 581.4 98.6% repair / renew
1.60 embodied carbon provisional kg of co2

circular product

fin adjustable

Table with 26 columns (materials) and 6 rows (recycled %, recyclable %, repair/renew %, weight grams, CO2/kg, recycled, recyclable, repair/renew, embodied carbon).

Summary table for fin adjustable showing total weight and complete product weight.

total 166.0 85.0% recycled
total 183.0 94.2% recyclable
total 191.2 98.0% repair / renew
0.46 embodied carbon provisional kg of co2

circular product



finis fixed

	glass lens	reflector	reflector finish	engine body	engine band	tv cable core	tv cable insulation	pcb	LED	heat sink	heat sink finish	label	barrier	barrier paint	shield	case	springer/ballcatch	screws for springs	screws for fit	clip	outer base	outer base paint	second outer base	second outer base paint	inner base	inner base paint	recycled plaster plate	other steel	other aluminum	other recycled plastic	other non-recycled	COMPLETE PRODUCT	COMPLETE PRODUCT
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%	0%	
recyclable %	100%	100%	0%	100%	100%	100%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	100%	100%	100%	100%	100%	0%	100%	0%	100%	0%	100%	100%	100%	100%	80%	0%	
repair / renew %	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	
weight grams	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	15.0	2.0	-	-	3.0	1.0	-	-	22.0	1.0	-	-	-	-	-	-	-	-	-		
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	7.4	3.6	2.1	2.4	6.1		
recycled	12.0	6.9	0.0	11.3	0.0	0.0	0.0	0.0	0.0	103.0	0.0	0.0	15.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
recyclable	12.0	6.9	0.0	14.1	0.9	4.0	0.0	0.0	0.0	103.0	0.0	0.0	15.0	0.0	0.0	0.0	3.0	1.0	0.0	0.0	22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
repair / renew	12.0	6.9	0.1	14.1	0.9	4.0	5.0	0.0	0.0	103.0	0.1	0.1	15.0	2.0	0.0	0.0	3.0	1.0	0.0	0.0	22.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
embodied carbon	0.004	0.081	0.000	0.034	0.007	0.011	0.001	0.001	0.000	0.215	0.001	0.001	0.029	0.001	0.000	0.000	0.011	0.004	0.000	0.000	0.048	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		

total	170.2	87.6%	recycled
total	181.0	93.7%	recyclable
total	190.2	97.9%	repair / renew
	0.42	embodied carbon	
	provisional kg of co2		

circular product

frame

	glass lens	reflector	reflector finish	engine body	engine band	tv cable core	tv cable insulation	pcb	LED	heat sink	heat sink finish	label	barrier	barrier paint	shield	case	springer/ballcatch	screws for springs	screws for fit	clip	outer base	outer base paint	second outer base	second outer base paint	inner base	inner base paint	recycled plaster plate	other steel	other aluminum	other recycled plastic	other non-recycled	COMPLETE PRODUCT	COMPLETE PRODUCT
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%	0%	
recyclable %	100%	100%	0%	100%	100%	100%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	100%	100%	100%	100%	100%	0%	100%	0%	100%	0%	100%	100%	100%	100%	80%	0%	
repair / renew %	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	
weight grams	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	15.0	2.0	-	-	3.0	1.0	-	-	22.0	1.0	-	-	-	-	-	-	-	-	-		
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	7.4	3.6	2.1	2.4	6.1		
recycled	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	103.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
recyclable	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	103.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
repair / renew	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	103.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
embodied carbon	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.002	0.414	0.000	0.000	0.000	0.000	0.000	0.000	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.380	

total	198.5	68.3%	recycled
total	200.5	69.0%	recyclable
total	200.5	69.0%	repair / renew
	0.43	embodied carbon	
	provisional kg of co2		

circular product

jade adjustable

	glass lens	reflector	reflector finish	engine body	engine band	tv cable core	tv cable insulation	pcb	LED	heat sink	heat sink finish	label	barrier	barrier paint	shield	case	springer/ballcatch	screws for springs	screws for fit	clip	outer base	outer base paint	second outer base	second outer base paint	inner base	inner base paint	recycled plaster plate	other steel	other aluminum	other recycled plastic	other non-recycled	COMPLETE PRODUCT	COMPLETE PRODUCT
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%	0%	
recyclable %	100%	100%	0%	100%	100%	100%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	100%	100%	100%	100%	100%	0%	100%	0%	100%	0%	100%	100%	100%	100%	80%	0%	
repair / renew %	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	
weight grams	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	15.0	2.0	-	-	3.0	1.0	-	-	22.0	1.0	-	-	-	-	-	-	-	-	-		
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	7.4	3.6	2.1	2.4	6.1		
recycled	12.0	6.9	0.0	11.3	0.0	0.0	0.0	0.0	0.0	103.0	0.0	0.0	15.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
recyclable	12.0	6.9	0.0	14.1	0.9	4.0	0.0	0.0	0.0	103.0	0.0	0.0	15.0	0.0	0.0	0.0	6.0	5.0	3.0	1.0	1.0	4.0	103.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
repair / renew	12.0	6.9	0.1	14.1	0.9	4.0	5.0	0.0	0.0	103.0	0.1	0.1	15.0	2.0	0.0	0.0	3.0	1.0	1.0	4.0	103.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
embodied carbon	0.004	0.081	0.000	0.034	0.007	0.011	0.001	0.001	0.000	0.215	0.001	0.001	0.042	0.001	0.044	0.037	0.011	0.004	0.004	0.014	0.215	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		

total	262.5	87.9%	recycled
total	285.4	95.5%	recyclable
total	294.7	98.7%	repair / renew
	0.70	embodied carbon	
	provisional kg of co2		

circular product



**jade fixed**

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heatsink	heatink finish	label	baffle	baffle paint	shield	case	spring/ballcatch	screws for strings	screws for fit	circclip	outer bezel	outer bezel paint	second outer bezel	second outer bezel p	inner bezel	inner bezel paint	recycled plaster plate	other steel	other aluminium	other recycled plastic	other non-recycled	COMPLETE PRODUCT	COMPLETE PRODUCT
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%	0%	
recyclable %	100%	100%	0%	100%	100%	100%	100%	0%	0%	100%	0%	0%	100%	0%	100%	100%	100%	100%	100%	100%	100%	0%	100%	0%	100%	0%	100%	100%	100%	100%	0%	0%	
repair / renew %	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%
weight grams	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	30.0	2.0	-	-	3.0	1.0	-	-	103.0	2.0	-	-	2.1	-	-	-	-	-	-	-	
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	7.4	3.6	2.1	2.4	6.1	-	-
recycled	12.0	6.9	0.0	11.3	0.0	0.0	0.0	0.0	0.0	103.0	0.0	0.0	30.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	103.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
recyclable	12.0	6.9	0.0	14.1	0.9	4.0	0.0	0.0	0.0	103.0	0.0	0.0	30.0	0.0	0.0	0.0	3.0	1.0	0.0	0.0	103.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
repair / renew	12.0	6.9	0.1	14.1	0.9	4.0	5.0	0.0	0.0	103.0	0.1	0.1	30.0	2.0	0.0	0.0	3.0	1.0	0.0	0.0	103.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
embodied carbon	0.004	0.051	0.000	0.034	0.007	0.011	0.001	0.001	0.000	0.215	0.001	0.001	0.038	0.001	0.000	0.000	0.011	0.004	0.000	0.000	0.215	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

**total**  
266.2  
**total**  
277.9  
**total**  
287.2

91.4% recycled  
95.4% recyclable  
98.6% repair / renew  
0.62 embodied carbon  
provisional kg of co2

**circular product**

**look adjustable**

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heatink	heatink finish	label	baffle	baffle paint	shield	case	spring/ballcatch	screws for strings	screws for fit	circclip	outer bezel	outer bezel paint	second outer bezel	second outer bezel p	inner bezel	inner bezel paint	recycled plaster plate	other steel	other aluminium	other recycled plastic	other non-recycled	COMPLETE PRODUCT	COMPLETE PRODUCT	
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%	0%		
recyclable %	100%	100%	0%	100%	100%	100%	100%	0%	0%	100%	0%	0%	100%	0%	100%	100%	100%	100%	100%	100%	100%	0%	100%	0%	100%	0%	100%	100%	100%	100%	0%	0%		
repair / renew %	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%
weight grams	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	22.0	1.5	15.0	-	4.0	2.0	1.0	4.0	63.0	1.0	-	-	18.0	1.0	-	-	-	-	-	-		
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	7.4	3.6	2.1	2.4	6.1	-	-	
recycled	12.0	6.9	0.0	11.3	0.0	0.0	0.0	0.0	0.0	103.0	0.0	0.0	22.0	0.0	12.0	0.0	0.0	0.0	0.0	0.0	63.0	0.0	0.0	0.0	18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
recyclable	12.0	6.9	0.0	14.1	0.9	4.0	0.0	0.0	0.0	103.0	0.0	0.0	22.0	0.0	15.0	0.0	4.0	2.0	1.0	4.0	63.0	0.0	0.0	0.0	18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
repair / renew	12.0	6.9	0.1	14.1	0.9	4.0	5.0	0.0	0.0	103.0	0.1	0.1	22.0	1.5	15.0	0.0	4.0	2.0	1.0	4.0	63.0	1.0	0.0	0.0	18.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0		
embodied carbon	0.004	0.051	0.000	0.034	0.007	0.011	0.001	0.001	0.000	0.215	0.001	0.001	0.043	0.001	0.110	0.000	0.015	0.007	0.004	0.014	0.131	0.001	0.000	0.000	0.038	0.001	0.000	0.000	0.000	0.000	0.000	0.000		

**total**  
248.2  
**total**  
269.9  
**total**  
278.7

87.8% recycled  
95.5% recyclable  
98.6% repair / renew  
0.69 embodied carbon  
provisional kg of co2

**circular product**

**look twin**

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heatink	heatink finish	label	baffle	baffle paint	shield	case	spring/ballcatch	screws for strings	screws for fit	circclip	outer bezel	outer bezel paint	second outer bezel	second outer bezel p	inner bezel	inner bezel paint	recycled plaster plate	other steel	other aluminium	other recycled plastic	other non-recycled	COMPLETE PRODUCT	COMPLETE PRODUCT	
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%	0%		
recyclable %	100%	100%	0%	100%	100%	100%	100%	0%	0%	100%	0%	0%	100%	0%	100%	100%	100%	100%	100%	100%	100%	0%	100%	0%	100%	0%	100%	100%	100%	100%	0%	0%		
repair / renew %	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%
weight grams	12.0	6.9	0.1	14.1	1.8	8.0	10.0	7.8	0.2	206.0	0.2	0.2	44.0	3.0	30.0	-	8.0	4.0	2.0	8.0	105.0	2.0	-	-	36.0	2.0	-	-	-	-	-	-		
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	7.4	3.6	2.1	2.4	6.1	-	-	
recycled	12.0	6.9	0.0	11.3	0.0	0.0	0.0	0.0	0.0	206.0	0.0	0.0	44.0	0.0	24.0	0.0	0.0	0.0	0.0	0.0	105.0	0.0	0.0	0.0	36.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
recyclable	12.0	6.9	0.0	14.1	1.8	8.0	0.0	0.0	0.0	206.0	0.0	0.0	44.0	0.0	30.0	0.0	8.0	4.0	2.0	8.0	105.0	0.0	0.0	0.0	36.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
repair / renew	12.0	6.9	0.1	14.1	1.8	8.0	10.0	0.0	0.0	206.0	0.2	0.2	44.0	3.0	30.0	0.0	8.0	4.0	2.0	8.0	105.0	2.0	0.0	0.0	36.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0		
embodied carbon	0.004	0.051	0.000	0.034	0.013	0.021	0.003	0.003	0.000	0.429	0.002	0.001	0.086	0.002	0.221	0.000	0.029	0.014	0.007	0.029	0.219	0.001	0.000	0.000	0.078	0.001	0.000	0.000	0.000	0.000	0.000	0.000		

**total**  
445.2  
**total**  
485.8  
**total**  
503.3

87.1% recycled  
95.0% recyclable  
98.4% repair / renew  
1.25 embodied carbon  
provisional kg of co2

**circular product**



mins adjustable

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heat sink	heat sink finish	label	baffle	baffle paint	shield	case	spring/ ballcatch	screws for springs	screws for fit	circlip	outer bezel	outer bezel paint	recrod other bezel	recrod outer bezel p	inner bezel	inner bezel paint	recycled plaster plate	other steel	other aluminium	other recycled plastic	other non-recycled		
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%	0%	
recyclable %	100%	100%	0%	100%	100%	100%	0%	0%	0%	100%	0%	0%	100%	0%	100%	100%	100%	100%	100%	100%	100%	0%	100%	100%	100%	0%	100%	100%	100%	100%	0%	0%	
repair / renew %	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%
weight grams	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	22.0	1.5	0.0	0.0	8.0	4.0	1.0	0.0	17.0	1.0	0.0	0.0	16.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	7.4	3.6	2.1	2.4	6.1		
recycled	12.0	6.9	0.0	11.3	0.0	0.0	0.0	0.0	0.0	103.0	0.0	0.0	22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.0	0.0	0.0	0.0	16.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
recyclable	12.0	6.9	0.0	14.1	0.9	4.0	0.0	0.0	0.0	103.0	0.0	0.0	22.0	0.0	0.0	0.0	8.0	4.0	1.0	0.0	17.0	0.0	0.0	0.0	16.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
repair / renew	12.0	6.9	0.1	14.1	0.9	4.0	5.0	0.0	0.0	103.0	0.1	0.1	22.0	1.5	0.0	0.0	8.0	4.0	1.0	0.0	17.0	1.0	0.0	0.0	16.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	
embodied carbon	0.004	0.081	0.000	0.034	0.007	0.011	0.001	0.001	0.000	0.218	0.001	0.001	0.043	0.001	0.000	0.000	0.029	0.014	0.004	0.000	0.035	0.001	0.000	0.000	0.033	0.001	0.000	0.000	0.000	0.000	0.000		

COMPLETE PRODUCT	221.7
COMPLETE PRODUCT	221.7

total 188.2 84.9% recycled  
total 208.9 94.2% recyclable  
total 217.7 98.2% repair / renew  
0.49 embodied carbon provisional kg of co2

circular product

mins fixed

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heat sink	heat sink finish	label	baffle	baffle paint	shield	case	spring/ ballcatch	screws for springs	screws for fit	circlip	outer bezel	outer bezel paint	recrod other bezel	recrod outer bezel p	inner bezel	inner bezel paint	recycled plaster plate	other steel	other aluminium	other recycled plastic	other non-recycled		
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%	0%	
recyclable %	100%	100%	0%	100%	100%	100%	0%	0%	0%	100%	0%	0%	100%	0%	100%	100%	100%	100%	100%	100%	100%	0%	100%	100%	100%	0%	100%	100%	100%	100%	0%	0%	
repair / renew %	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%
weight grams	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	22.0	1.5	0.0	0.0	8.0	4.0	1.0	0.0	20.0	1.0	0.0	0.0	20.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	7.4	3.6	2.1	2.4	6.1		
recycled	12.0	6.9	0.0	11.3	0.0	0.0	0.0	0.0	0.0	103.0	0.0	0.0	22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
recyclable	12.0	6.9	0.0	14.1	0.9	4.0	0.0	0.0	0.0	103.0	0.0	0.0	22.0	0.0	0.0	0.0	8.0	4.0	1.0	0.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
repair / renew	12.0	6.9	0.1	14.1	0.9	4.0	5.0	0.0	0.0	103.0	0.1	0.1	22.0	1.5	0.0	0.0	8.0	4.0	1.0	0.0	20.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
embodied carbon	0.004	0.051	0.000	0.034	0.007	0.011	0.001	0.001	0.000	0.218	0.001	0.001	0.043	0.001	0.000	0.000	0.029	0.014	0.000	0.000	0.042	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

COMPLETE PRODUCT	206.7
COMPLETE PRODUCT	206.7

total 175.2 84.8% recycled  
total 194.9 94.3% recyclable  
total 202.7 98.1% repair / renew  
0.46 embodied carbon provisional kg of co2

circular product

mins fixed

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heat sink	heat sink finish	label	baffle	baffle paint	shield	case	spring/ ballcatch	screws for springs	screws for fit	circlip	outer bezel	outer bezel paint	recrod other bezel	recrod outer bezel p	inner bezel	inner bezel paint	recycled plaster plate	other steel	other aluminium	other recycled plastic	other non-recycled		
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%	0%	
recyclable %	100%	100%	0%	100%	100%	100%	0%	0%	0%	100%	0%	0%	100%	0%	100%	100%	100%	100%	100%	100%	100%	0%	100%	100%	100%	0%	100%	100%	100%	100%	0%	0%	
repair / renew %	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%
weight grams	22.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0	12.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	7.4	3.6	2.1	2.4	6.1		
recycled	22.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0	12.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
recyclable	22.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.0	0.0	0.0	0.0	2.0	1.0	0.0	0.0	5.0	0.0	0.0	0.0	12.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
repair / renew	22.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.0	0.0	0.0	0.0	2.0	1.0	0.0	0.0	5.0	0.0	0.0	0.0	12.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
embodied carbon	0.007	0.022	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.014	0.000	0.000	0.000	0.007	0.004	0.000	0.000	0.010	0.000	0.000	0.000	0.026	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

COMPLETE PRODUCT	58.5
COMPLETE PRODUCT	58.5

total 49.0 88.3% recycled  
total 52.0 93.7% recyclable  
total 52.0 93.7% repair / renew  
0.99 embodied carbon provisional kg of co2

circular product





one adjustable

	glass lens	reflector	reflector finish	engine body	engine band	iv cable core	iv cable insulation	pcb	LED	heat sink	heat sink finish	label	barflie	barflie paint	shield	case	spring/ ballcatch	screws for springs	screws for fit	circclip	outer bezel	outer bezel paint	second other bezel	second outer bezel p	inner bezel	inner bezel paint	recycled dialster plate	other steel	other aluminium	other recycled plastic	other non-recycled
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%
recyclable %	100%	100%	0%	100%	100%	100%	0%	0%	0%	100%	0%	0%	100%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	100%	100%	100%	100%	0%	
repair / renew %	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%
weight grams	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	21.5	2.0	6.0	5.0	3.0	1.0	1.0	4.0	21.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	3.6	2.1	2.4	6.1	

COMPLETE PRODUCT	216.2
COMPLETE PRODUCT	216.2

total 180.5 83.5% recycled  
 total 265.4 94.1% recyclable  
 total 282.2 98.1% repair / renew  
 0.53 embodied carbon provisional kg of co2

circular product

one fixed

	glass lens	reflector	reflector finish	engine body	engine band	iv cable core	iv cable insulation	pcb	LED	heat sink	heat sink finish	label	barflie	barflie paint	shield	case	spring/ ballcatch	screws for springs	screws for fit	circclip	outer bezel	outer bezel paint	second other bezel	second outer bezel p	inner bezel	inner bezel paint	recycled dialster plate	other steel	other aluminium	other recycled plastic	other non-recycled
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%
recyclable %	100%	100%	0%	100%	100%	100%	0%	0%	0%	100%	0%	0%	100%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	100%	100%	100%	100%	0%	
repair / renew %	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%
weight grams	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	30.0	2.0	6.0	5.0	3.0	1.0	1.0	4.0	24.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	3.6	2.1	2.4	6.1	

COMPLETE PRODUCT	211.7
COMPLETE PRODUCT	211.7

total 187.2 86.4% recycled  
 total 198.9 94.0% recyclable  
 total 207.7 95.1% repair / renew  
 0.45 embodied carbon provisional kg of co2

circular product

one mini adjustable

	glass lens	reflector	reflector finish	engine body	engine band	iv cable core	iv cable insulation	pcb	LED	heat sink	heat sink finish	label	barflie	barflie paint	shield	case	spring/ ballcatch	screws for springs	screws for fit	circclip	outer bezel	outer bezel paint	second other bezel	second outer bezel p	inner bezel	inner bezel paint	recycled dialster plate	other steel	other aluminium	other recycled plastic	other non-recycled
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%
recyclable %	100%	100%	0%	100%	100%	100%	0%	0%	0%	100%	0%	0%	100%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	100%	100%	100%	100%	0%	
repair / renew %	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%
weight grams	-	4.4	0.1	10.0	-	4.0	5.0	3.4	0.1	55.0	0.1	0.1	15.0	1.0	2.0	3.0	2.0	2.0	1.0	-	3.0	1.5	0.0	0.0	2.1	0.6	7.4	3.6	2.1	2.4	6.1
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	3.6	2.1	2.4	6.1	

COMPLETE PRODUCT	130.7
COMPLETE PRODUCT	130.7

total 93.0 71.2% recycled  
 total 107.4 82.2% recyclable  
 total 118.2 88.1% repair / renew  
 0.29 embodied carbon provisional kg of co2

circular product



### one mini fixed

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heat sink	heat sink finish	label	baffle	baffle paint	shield	case	springer/ballcatch	screws for springs	screws for fit	circclip	outer bezel	outer bezel paint	second outer bezel	second outer bezel p	inner bezel	inner bezel paint	recycled plaster plate	other steel	other aluminium	other recycled plastic	other non-recycled	COMPLETE PRODUCT	COMPLETE PRODUCT
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%	0%	
recyclable %	100%	100%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	
repair / renew %	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
weight grams	-	4.4	0.1	10.0	-	4.0	5.0	3.4	0.1	55.0	0.1	0.1	15.0	1.0	-	-	2.0	2.0	-	-	3.0	15	-	-	-	-	-	-	-	-	12.0		
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	7.4	3.6	2.1	2.4	6.1		
recycled	0.0	4.4	0.0	8.0	0.0	0.0	0.0	0.0	0.0	55.0	0.0	0.0	15.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
recyclable	0.0	4.4	0.0	10.0	0.0	4.0	0.0	0.0	0.0	55.0	0.0	0.0	15.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
repair / renew	0.0	4.4	0.1	10.0	0.0	4.0	5.0	0.0	0.0	55.0	0.1	0.1	15.0	1.0	0.0	0.0	2.0	2.0	0.0	0.0	9.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
embodied carbon	0.000	0.033	0.000	0.024	0.000	0.011	0.001	0.001	0.000	0.115	0.001	0.001	0.029	0.001	0.000	0.000	0.007	0.007	0.000	0.000	0.019	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.074		

total **91.4** 73.3% recycled  
 total **101.4** 81.3% recyclable  
 total **109.2** 67.6% repair / renew  
 0.25 embodied carbon provisional kg of co2

### circular product

### oni

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heat sink	heat sink finish	label	baffle	baffle paint	shield	case	springer/ballcatch	screws for springs	screws for fit	circclip	outer bezel	outer bezel paint	second outer bezel	second outer bezel p	inner bezel	inner bezel paint	recycled plaster plate	other steel	other aluminium	other recycled plastic	other non-recycled	COMPLETE PRODUCT	COMPLETE PRODUCT
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%	0%	
recyclable %	100%	100%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	
repair / renew %	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
weight grams	-	4.4	0.1	10.0	-	4.0	5.0	3.4	0.1	55.0	0.1	0.1	15.0	1.0	-	-	2.0	2.0	-	-	3.0	15	-	-	-	-	-	-	-	-	12.0		
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	7.4	3.6	2.1	2.4	6.1		
recycled	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	70.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
recyclable	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	70.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
repair / renew	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	70.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
embodied carbon	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.002	0.146	0.000	0.000	0.000	0.000	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.123		

total **70.0** 58.3% recycled  
 total **72.0** 60.0% recyclable  
 total **72.0** 60.0% repair / renew  
 0.16 embodied carbon provisional kg of co2

### circular product

### otto adjustable

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heat sink	heat sink finish	label	baffle	baffle paint	shield	case	springer/ballcatch	screws for springs	screws for fit	circclip	outer bezel	outer bezel paint	second outer bezel	second outer bezel p	inner bezel	inner bezel paint	recycled plaster plate	other steel	other aluminium	other recycled plastic	other non-recycled	COMPLETE PRODUCT	COMPLETE PRODUCT
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%	0%	
recyclable %	100%	100%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	
repair / renew %	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
weight grams	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	21.5	2.0	15.0	-	4.0	2.0	1.0	4.0	32.0	15	2.1	0.6	2.1	0.6	7.4	3.6	2.1	2.4	6.1		
co2 / kg	0.3	7.4	4.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	21.5	2.0	15.0	7.4	4.0	2.0	1.0	4.0	32.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
recycled	12.0	6.9	0.0	11.3	0.0	0.0	0.0	0.0	0.0	103.0	0.0	0.0	21.5	0.0	12.0	0.0	0.0	0.0	0.0	0.0	32.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
recyclable	12.0	6.9	0.0	14.1	0.9	4.0	0.0	0.0	0.0	103.0	0.0	0.0	21.5	0.0	15.0	0.0	4.0	2.0	1.0	4.0	32.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
repair / renew	12.0	6.9	0.1	14.1	0.9	4.0	5.0	0.0	0.0	103.0	0.1	0.1	21.5	2.0	15.0	0.0	4.0	2.0	1.0	4.0	32.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
embodied carbon	0.004	0.021	0.000	0.034	0.007	0.011	0.001	0.001	0.000	0.215	0.001	0.001	0.042	0.001	0.110	0.000	0.015	0.007	0.004	0.014	0.067	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		

total **198.7** 85.2% recycled  
 total **220.4** 94.5% recyclable  
 total **229.2** 98.3% repair / renew  
 0.59 embodied carbon provisional kg of co2

### circular product





otto fixed

	glass lens	reflector	reflector finish	engine body	engine band	iv cable core	iv cable insulation	pcb	LED	heat sink	heat sink finish	label	baffle	baffle paint	shield	chase	stringer/ballcatch	screws for springs	screws for fit	clip	outer bezel	outer bezel paint	second outer bezel	second other bezel	inner bezel	inner bezel paint	recycled plaster plate	other steel	other aluminium	other recycled plastic	other non-recycled						
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%			
recyclable %	100%	100%	0%	100%	100%	100%	100%	0%	0%	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%		
repair / renew %	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
weight grams	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	30.0	2.0	-	-	4.0	2.0	-	-	32.0	1.5	-	-	2.1	-	-	7.4	-	-	-	-	-	-	-		
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	2.1	3.6	2.1	2.4	6.1	-	-	-	-		
recycled	12.0	6.9	0.0	11.3	0.0	0.0	0.0	0.0	0.0	103.0	0.0	0.0	30.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	32.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
recyclable	12.0	6.9	0.0	14.1	0.9	4.0	0.0	0.0	0.0	103.0	0.0	0.0	30.0	0.0	0.0	0.0	4.0	2.0	0.0	0.0	32.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
repair / renew	12.0	6.9	0.1	14.1	0.9	4.0	5.0	0.0	0.0	103.0	0.1	0.1	30.0	2.0	0.0	0.0	4.0	2.0	0.0	0.0	32.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
embodied carbon	0.004	0.051	0.000	0.034	0.007	0.011	0.001	0.001	0.000	0.215	0.001	0.001	0.028	0.001	0.000	0.000	0.015	0.007	0.000	0.000	0.067	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

COMPLETE PRODUCT	221.7
COMPLETE PRODUCT	221.7
<b>total</b>	<b>195.2</b>
<b>total</b>	<b>208.9</b>
<b>total</b>	<b>217.7</b>
88.0%	recycled
94.2%	recyclable
98.2%	repair / renew
0.47	embodied carbon provisional kg of co2

circular product

riva adjustable

	glass lens	reflector	reflector finish	engine body	engine band	iv cable core	iv cable insulation	pcb	LED	heat sink	heat sink finish	label	baffle	baffle paint	shield	chase	stringer/ballcatch	screws for springs	screws for fit	clip	outer bezel	outer bezel paint	second outer bezel	second other bezel	inner bezel	inner bezel paint	recycled plaster plate	other steel	other aluminium	other recycled plastic	other non-recycled								
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%			
recyclable %	100%	100%	0%	100%	100%	100%	100%	0%	0%	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%		
repair / renew %	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%		
weight grams	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	8.0	3.0	40.0	10.0	6.0	2.0	2.0	8.0	16.0	1.5	-	-	71.0	2.0	-	7.4	-	-	-	-	-	-	-	-			
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	2.1	3.6	2.1	2.4	6.1	-	-	-	-	-			
recycled	12.0	6.9	0.0	11.3	0.0	0.0	0.0	0.0	0.0	103.0	0.0	0.0	8.0	0.0	32.0	0.0	0.0	0.0	0.0	0.0	16.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
recyclable	12.0	6.9	0.0	14.1	0.9	4.0	0.0	0.0	0.0	103.0	0.0	0.0	8.0	0.0	40.0	10.0	6.0	2.0	2.0	8.0	16.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
repair / renew	12.0	6.9	0.1	14.1	0.9	4.0	5.0	0.0	0.0	103.0	0.1	0.1	8.0	3.0	40.0	10.0	6.0	2.0	2.0	8.0	16.0	1.5	0.0	0.0	0.0	71.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
embodied carbon	0.004	0.051	0.000	0.034	0.007	0.011	0.001	0.001	0.000	0.215	0.001	0.001	0.016	0.002	0.294	0.074	0.022	0.007	0.007	0.029	0.033	0.001	0.000	0.000	0.148	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		

COMPLETE PRODUCT	369.7
COMPLETE PRODUCT	369.7
<b>total</b>	<b>260.2</b>
<b>total</b>	<b>303.9</b>
<b>total</b>	<b>315.7</b>
81.4%	recycled
95.1%	recyclable
98.7%	repair / renew
0.96	embodied carbon provisional kg of co2

circular product

riva twin

	glass lens	reflector	reflector finish	engine body	engine band	iv cable core	iv cable insulation	pcb	LED	heat sink	heat sink finish	label	baffle	baffle paint	shield	chase	stringer/ballcatch	screws for springs	screws for fit	clip	outer bezel	outer bezel paint	second outer bezel	second other bezel	inner bezel	inner bezel paint	recycled plaster plate	other steel	other aluminium	other recycled plastic	other non-recycled								
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%		
recyclable %	100%	100%	0%	100%	100%	100%	100%	0%	0%	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
repair / renew %	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
weight grams	24.0	13.8	0.2	28.2	1.8	8.0	10.0	7.8	0.2	206.0	0.2	0.2	16.0	6.0	80.0	20.0	12.0	4.0	0.0	0.0	25.0	3.0	-	-	142.0	4.0	-	7.4	-	-	-	-	-	-	-	-	-		
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	2.1	3.6	2.1	2.4	6.1	-	-	-	-	-	-		
recycled	24.0	13.8	0.0	22.6	0.0	0.0	0.0	0.0	0.0	206.0	0.0	0.0	16.0	0.0	64.0	0.0	0.0	0.0	0.0	0.0	25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
recyclable	24.0	13.8	0.0	28.2	1.8	8.0	0.0	0.0	0.0	206.0	0.0	0.0	16.0	0.0	80.0	20.0	12.0	4.0	0.0	0.0	25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
repair / renew	24.0	13.8	0.2	28.2	1.8	8.0	10.0	0.0	0.0	206.0	0.2	0.2	16.0	6.0	80.0	20.0	12.0	4.0	0.0	0.0	25.0	3.0	0.0	0.0	0.0	142.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
embodied carbon	0.007	0.102	0.001	0.068	0.015	0.021	0.003	0.000	0.000	0.429	0.002	0.001	0.031	0.004	0.288	0.148	0.044	0.014	0.000	0.000	0.032	0.002	0.000	0.000	0.296	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		

COMPLETE PRODUCT	612.4
COMPLETE PRODUCT	612.4
<b>total</b>	<b>515.4</b>
<b>total</b>	<b>580.3</b>
<b>total</b>	<b>604.4</b>
83.8%	recycled
94.8%	recyclable
98.7%	repair / renew
1.83	embodied carbon provisional kg of co2

circular product



**surri adjustable**

	glass lens	reflector	reflector finish	engine body	engine band	iv cable core	iv cable insulation	pcb	LED	heat sink	heat sink finish	label	baffle	baffle paint	shield	case	spring/ ballcatch	screws for springs	screws for fit	clip	outer bezel	outer bezel paint	second outer bezel	second outer bezel p	inner bezel	inner bezel paint	recycled plaster plask	other steel	other aluminium	other recycled plask	other non-recycled
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%	
recyclable %	100%	100%	0%	100%	100%	100%	0%	0%	0%	100%	0%	0%	100%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	100%	100%	100%	100%	0%	
repair / renew %	100%	100%	100%	100%	100%	100%	0%	0%	0%	100%	100%	100%	100%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%
weight grams	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	21.5	2.0	6.0	5.0	3.0	1.0	1.0	4.0	21.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	7.4	3.6	2.1	2.4	6.1

COMPLETE PRODUCT	216.2
COMPLETE PRODUCT	216.2

total	180.5	83.5%	recycled
total	203.4	94.1%	recyclable
total	212.2	94.1%	repair / renew
total	0.53	0.53	embodied carbon provisional kg of co2

**circular product**

**surri fixed**

	glass lens	reflector	reflector finish	engine body	engine band	iv cable core	iv cable insulation	pcb	LED	heat sink	heat sink finish	label	baffle	baffle paint	shield	case	spring/ ballcatch	screws for springs	screws for fit	clip	outer bezel	outer bezel paint	second outer bezel	second outer bezel p	inner bezel	inner bezel paint	recycled plaster plask	other steel	other aluminium	other recycled plask	other non-recycled
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%	
recyclable %	100%	100%	0%	100%	100%	100%	0%	0%	0%	100%	0%	0%	100%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	100%	100%	100%	100%	0%	
repair / renew %	100%	100%	100%	100%	100%	100%	0%	0%	0%	100%	100%	100%	100%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%
weight grams	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	30.0	2.0	6.0	5.0	3.0	1.0	1.0	4.0	24.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	7.4	3.6	2.1	2.4	6.1

COMPLETE PRODUCT	211.7
COMPLETE PRODUCT	211.7

total	187.2	88.4%	recycled
total	195.9	94.0%	recyclable
total	207.7	94.1%	repair / renew
total	0.45	0.45	embodied carbon provisional kg of co2

**circular product**

**surri mini adjustable**

	glass lens	reflector	reflector finish	engine body	engine band	iv cable core	iv cable insulation	pcb	LED	heat sink	heat sink finish	label	baffle	baffle paint	shield	case	spring/ ballcatch	screws for springs	screws for fit	clip	outer bezel	outer bezel paint	second outer bezel	second outer bezel p	inner bezel	inner bezel paint	recycled plaster plask	other steel	other aluminium	other recycled plask	other non-recycled
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%	
recyclable %	100%	100%	0%	100%	100%	100%	0%	0%	0%	100%	0%	0%	100%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	100%	100%	100%	100%	0%	
repair / renew %	100%	100%	100%	100%	100%	100%	0%	0%	0%	100%	100%	100%	100%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%
weight grams	4.4	0.1	10.0	0.0	4.0	5.0	0.0	0.0	0.0	55.0	0.1	0.1	15.0	1.0	2.0	3.0	2.0	2.0	1.0	0.0	20.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.0
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	55.0	0.1	0.1	11.6	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	7.4	3.6	2.1	2.4	6.1

COMPLETE PRODUCT	141.7
COMPLETE PRODUCT	141.7

total	104.0	73.4%	recycled
total	118.4	83.6%	recyclable
total	126.2	89.1%	repair / renew
total	0.21	0.21	embodied carbon provisional kg of co2

**circular product**



suri mini fixed

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heat sink	heat sink finish	label	barrier	barrier paint	shield	capse	spring/bulbcatch	screws for springs	screws for fit	clip	outer bezel	outer bezel paint	second outer bezel	second outer bezel p	inner bezel	inner bezel paint	recycled plaster plate	other steel	other aluminium	other recycled plastic	other non-recycled
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%	
recyclable %	100%	100%	0%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	
repair / renew %	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	
weight grams	4.4	0.1	10.0	2.4	7.4	4.0	5.0	3.4	0.1	55.0	0.1	0.1	15.0	1.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	15	2.1	2.1	2.1	7.4	3.6	2.1	2.4	12.0	
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	0.1	11.6	6.1	0.6	7.4	7.4	3.7	3.6	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	2.1	2.4	6.1	0.74	

COMPLETE PRODUCT	155.7
COMPLETE PRODUCT	

total 102.4  
 total 102.4  
 total 120.2  
 75.5% recycled  
 82.8% recyclable  
 88.6% repair / renew  
 0.27 embodied carbon  
 provisional kg of co2

circular product

timo adjustable

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heat sink	heat sink finish	label	barrier	barrier paint	shield	capse	spring/bulbcatch	screws for springs	screws for fit	clip	outer bezel	outer bezel paint	second outer bezel	second outer bezel p	inner bezel	inner bezel paint	recycled plaster plate	other steel	other aluminium	other recycled plastic	other non-recycled
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%	
recyclable %	100%	100%	0%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%
repair / renew %	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%
weight grams	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.3	0.1	103.0	0.1	0.1	21.5	2.0	15.0	4.0	2.0	1.0	4.0	32.0	1.5	2.1	0.6	2.1	0.6	7.4	3.6	2.1	2.4	6.1	
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	2.1	2.4	6.1	0.74	

COMPLETE PRODUCT	233.2
COMPLETE PRODUCT	

total 198.7  
 total 220.4  
 total 229.2  
 85.2% recycled  
 94.5% recyclable  
 98.3% repair / renew  
 0.59 embodied carbon  
 provisional kg of co2

circular product

tuo adjustable

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heat sink	heat sink finish	label	barrier	barrier paint	shield	capse	spring/bulbcatch	screws for springs	screws for fit	clip	outer bezel	outer bezel paint	second outer bezel	second outer bezel p	inner bezel	inner bezel paint	recycled plaster plate	other steel	other aluminium	other recycled plastic	other non-recycled
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%	
recyclable %	100%	100%	0%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%
repair / renew %	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%
weight grams	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.3	0.1	103.0	0.1	0.1	21.5	2.0	6.0	5.0	4.0	1.0	4.0	26.0	1.5	30.0	2.0	19.0	10	7.4	3.6	2.1	2.4	6.1	
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	2.1	2.4	6.1	0.74	

COMPLETE PRODUCT	373.2
COMPLETE PRODUCT	

total 318.5  
 total 357.4  
 total 369.2  
 85.3% recycled  
 95.8% recyclable  
 98.9% repair / renew  
 0.63 embodied carbon  
 provisional kg of co2

circular product



tipo fixed

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heat sink	heat sink finish	label	baffle	baffle paint	shield	case	spring/ballcatch	screws for springs	screws for fit	circclip	outer bezel	outer bezel paint	second outer bezel	second outer bezel p	inner bezel	inner bezel paint	recycled plaster plate	other steel	other aluminium	other recycled plastic	other non-recycled	COMPLETE PRODUCT	COMPLETE PRODUCT
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%	0%	
recyclable %	100%	100%	0%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	80%	0%	
repair / renew %	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	
weight grams	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	30.0	2.0	-	-	-	-	-	-	26.0	15	30.0	2.0	19.0	10	-	20.0	84.0	-	-		
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	7.4	3.6	2.1	2.4	6.1		
recycled	12.0	6.9	0.0	11.3	0.0	0.0	0.0	0.0	0.0	103.0	0.0	0.0	30.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	26.0	0.0	30.0	0.0	19.0	0.0	0.0	0	84	0			
recyclable	12.0	6.9	0.0	14.1	0.9	4.0	0.0	0.0	0.0	103.0	0.0	0.0	30.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	26.0	0.0	30.0	0.0	19.0	0.0	0.0	20	84	0			
repair / renew	12.0	6.9	0.1	14.1	0.9	4.0	5.0	0.0	0.0	103.0	0.1	0.1	30.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	26.0	1.5	30.0	2.0	19.0	1.0	0.0	20.0	84.0	0.0	0.0		
embodied carbon	0.004	0.031	0.000	0.034	0.007	0.011	0.001	0.001	0.000	0.215	0.001	0.001	0.038	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.034	0.001	0.063	0.001	0.040	0.001	0.000	0.072	0.175	0.000	0.000		

total 322.2 88.1% recycled

total 349.9 95.7% recyclable

total 361.7 98.9% repair / renew

0.54 embodied carbon provisional kg of co2

**circular product**

toto

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heat sink	heat sink finish	label	baffle	baffle paint	shield	case	spring/ballcatch	screws for springs	screws for fit	circclip	outer bezel	outer bezel paint	second outer bezel	second outer bezel p	inner bezel	inner bezel paint	recycled plaster plate	other steel	other aluminium	other recycled plastic	other non-recycled	COMPLETE PRODUCT	COMPLETE PRODUCT
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%	0%	
recyclable %	100%	100%	0%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	80%	0%
repair / renew %	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%
weight grams	30.0	4.0	0.1	2.4	7.4	2.6	3.4	0.1	2.1	11.6	6.1	32.0	1.9	0.6	7.4	7.4	5.0	3.6	3.6	3.6	10.0	0.6	10.0	0.6	10.0	0.6	7.4	3.6	2.1	2.4	6.1		
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	3.4	0.1	2.1	11.6	6.1	32.0	1.9	0.6	7.4	7.4	5.0	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	7.4	3.6	2.1	2.4	6.1		
recycled	30.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	32.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	0.0	123.0	0.0	0.0	0.0	0.0	0	0	0	0		
recyclable	30.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	32.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0	10.0	0.0	123.0	0.0	0.0	0.0	0.0	0	0	0	0		
repair / renew	30.0	4.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	32.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0	10.0	0.0	123.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
embodied carbon	0.009	0.030	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.042	0.000	0.000	0.000	0.018	0.000	0.000	0.000	0.021	0.000	0.238	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

total 199.0 95.9% recycled

total 204.0 98.3% recyclable

total 204.1 98.3% repair / renew

0.40 embodied carbon provisional kg of co2

**circular product**

toto micro

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heat sink	heat sink finish	label	baffle	baffle paint	shield	case	spring/ballcatch	screws for springs	screws for fit	circclip	outer bezel	outer bezel paint	second outer bezel	second outer bezel p	inner bezel	inner bezel paint	recycled plaster plate	other steel	other aluminium	other recycled plastic	other non-recycled	COMPLETE PRODUCT	COMPLETE PRODUCT
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%	0%	
recyclable %	100%	100%	0%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	80%	0%
repair / renew %	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%
weight grams	22.0	3.0	0.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	9.0	0.6	7.4	7.4	2.0	3.6	3.6	3.6	5.0	0.6	5.0	0.6	2.1	0.6	7.4	3.6	2.1	2.4	6.1		
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	9.0	0.6	7.4	7.4	2.0	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	7.4	3.6	2.1	2.4	6.1		
recycled	22.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	0.0	22.0	0.0	0.0	0.0	0.0	0	0	0	0		
recyclable	22.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	5.0	0.0	22.0	0.0	0.0	0.0	0.0	0	0	0	0		
repair / renew	22.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	5.0	0.0	22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
embodied carbon	0.007	0.022	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.017	0.000	0.000	0.000	0.007	0.000	0.000	0.000	0.010	0.000	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

total 61.0 91.7% recycled

total 63.0 94.7% recyclable

total 63.0 94.7% repair / renew

0.11 embodied carbon provisional kg of co2

**circular product**



toto mini

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heat sink	heat sink finish	label	baffle	baffle paint	shield	case	springer/ballcatch	screws for springs	screws for fit	circclip	outer bezel	outer bezel paint	second outer bezel	second outer bezel p	inner bezel	inner bezel paint	recycled plaster plate	other steel	other aluminium	other recycled plastic	other non-recycled	COMPLETE PRODUCT	COMPLETE PRODUCT
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%	0%	
recyclable %	100%	100%	0%	100%	100%	100%	100%	0%	0%	100%	0%	0%	100%	0%	100%	100%	100%	100%	100%	100%	100%	0%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	
repair / renew %	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%
weight grams	22.0	3.0	-	2.4	7.4	2.6	0.3	3.4	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	2.0	3.6	3.6	3.6	8.0	0.0	48.0	0.0	2.1	2.1	0.6	7.4	3.6	2.1	2.4	6.1	
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	7.4	3.6	2.1	2.4	6.1		
recycled	22.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.0	0.0	48.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
recyclable	22.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	8.0	0.0	48.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
repair / renew	22.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	8.0	0.0	48.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
embodied carbon	0.007	0.022	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.038	0.000	0.000	0.000	0.007	0.000	0.000	0.000	0.027	0.000	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

total 111.0 95.3% recycled  
 total 115.0 97.0% recyclable  
 total 155.0 97.0% repair / renew  
 0.21 embodied carbon provisional kg of co2

circular product

toto plus

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heat sink	heat sink finish	label	baffle	baffle paint	shield	case	springer/ballcatch	screws for springs	screws for fit	circclip	outer bezel	outer bezel paint	second outer bezel	second outer bezel p	inner bezel	inner bezel paint	recycled plaster plate	other steel	other aluminium	other recycled plastic	other non-recycled	COMPLETE PRODUCT	COMPLETE PRODUCT	
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%	0%		
recyclable %	100%	100%	0%	100%	100%	100%	100%	0%	0%	100%	0%	0%	100%	0%	100%	100%	100%	100%	100%	100%	100%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	
repair / renew %	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%
weight grams	40.0	6.9	0.1	2.4	7.4	2.6	0.3	3.4	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	5.0	3.6	3.6	3.6	15.0	0.0	281.0	0.0	2.1	2.1	0.6	7.4	3.6	2.1	2.4	6.1		
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	15.0	0.0	281.0	0.0	0.6	2.1	0.6	7.4	3.6	2.1	2.4	6.1		
recycled	40.0	6.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	34.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.0	0.0	281.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
recyclable	40.0	6.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	34.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0	15.0	0.0	281.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
repair / renew	40.0	6.9	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	34.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0	15.0	0.0	281.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
embodied carbon	0.032	0.051	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.183	0.000	0.000	0.000	0.018	0.000	0.000	0.000	0.031	0.000	0.586	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		

total 436.9 98.1% recycled  
 total 441.0 99.2% recyclable  
 total 442.0 99.2% repair / renew  
 0.88 embodied carbon provisional kg of co2

circular product

toto zero

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heat sink	heat sink finish	label	baffle	baffle paint	shield	case	springer/ballcatch	screws for springs	screws for fit	circclip	outer bezel	outer bezel paint	second outer bezel	second outer bezel p	inner bezel	inner bezel paint	recycled plaster plate	other steel	other aluminium	other recycled plastic	other non-recycled	COMPLETE PRODUCT	COMPLETE PRODUCT	
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%	0%		
recyclable %	100%	100%	0%	100%	100%	100%	100%	0%	0%	100%	0%	0%	100%	0%	100%	100%	100%	100%	100%	100%	100%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	
repair / renew %	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%
weight grams	22.0	3.0	4.1	2.4	7.4	2.6	0.3	3.4	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	2.0	3.6	3.6	3.6	5.0	0.0	12.0	0.0	2.1	2.1	0.6	7.4	3.6	2.1	2.4	6.1		
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	7.4	3.6	2.1	2.4	6.1			
recycled	22.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	0.0	12.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
recyclable	22.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.0	0.0	0.0	0.0	2.0	1.0	0.0	0.0	5.0	0.0	12.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
repair / renew	22.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.0	0.0	0.0	0.0	2.0	1.0	0.0	0.0	5.0	0.0	12.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
embodied carbon	0.007	0.022	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.014	0.000	0.000	0.000	0.007	0.004	0.000	0.000	0.010	0.000	0.025	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		

total 49.0 86.3% recycled  
 total 52.0 93.7% recyclable  
 total 52.0 93.7% repair / renew  
 0.09 embodied carbon provisional kg of co2

circular product



### true adjustable

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heat sink	heat sink finish	label	baffle	baffle paint	shield	case	springer/ballcatch	screws for springs	screws for lift	circclip	outer baseel	outer baseel paint	second outer baseel	second outer baseel p	inner baseel	inner baseel paint	recycled plaster plate	other steel	other aluminium	other recycled plastic	other non-recycled	COMPLETE PRODUCT	COMPLETE PRODUCT
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%	0%		
recyclable %	100%	100%	0%	100%	100%	100%	0%	0%	100%	0%	0%	100%	0%	100%	100%	100%	100%	100%	100%	100%	100%	0%	100%	0%	100%	100%	100%	100%	100%	0%	0%		
repair / renew %	100%	100%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	
weight grams	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	21.5	2.0	15.0	-	-	1.0	4.0	19.0	1.5	40.0	2.0	60.0	2.0	35.0	-	-	-	-	-		
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	7.4	3.6	2.1	2.4	6.1		
recycled	12.0	6.9	0.0	11.3	0.0	0.0	0.0	0.0	103.0	0.0	0.0	21.5	0.0	12.0	0.0	0.0	0.0	0.0	0.0	19.0	0.0	40.0	0.0	60.0	0.0	28.0	0	0	0	0	0		
recyclable	12.0	6.9	0.0	14.1	0.9	4.0	0.0	0.0	103.0	0.0	0.0	21.5	0.0	15.0	0.0	0.0	0.0	1.0	4.0	19.0	0.0	40.0	0.0	60.0	0.0	35.0	0	0	0	0	0		
repair / renew	12.0	6.9	0.1	14.1	0.9	4.0	5.0	0.0	103.0	0.1	0.1	21.5	2.0	15.0	0.0	0.0	0.0	1.0	4.0	19.0	1.5	40.0	2.0	60.0	2.0	35.0	0.0	0.0	0.0	0.0	0.0		
embodied carbon	0.004	0.051	0.000	0.034	0.007	0.011	0.001	0.001	0.000	0.218	0.001	0.001	0.042	0.001	0.110	0.000	0.000	0.000	0.004	0.014	0.040	0.001	0.083	0.001	0.125	0.001	0.237	0.000	0.000	0.000	0.000		

total	313.7	88.8%	recycled
total	336.4	95.2%	recyclable
total	349.2	98.9%	repair / renew
		1.01	embodied carbon provisional kg of co2

### circular product

### true fixed

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heat sink	heat sink finish	label	baffle	baffle paint	shield	case	springer/ballcatch	screws for springs	screws for lift	circclip	outer baseel	outer baseel paint	second outer baseel	second outer baseel p	inner baseel	inner baseel paint	recycled plaster plate	other steel	other aluminium	other recycled plastic	other non-recycled	COMPLETE PRODUCT	COMPLETE PRODUCT
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%	0%		
recyclable %	100%	100%	0%	100%	100%	100%	0%	0%	100%	0%	0%	100%	0%	100%	100%	100%	100%	100%	100%	100%	100%	0%	100%	0%	100%	100%	100%	100%	100%	100%	0%	0%	
repair / renew %	100%	100%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%
weight grams	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	24.0	2.0	15.0	-	-	1.0	4.0	19.0	1.5	40.0	2.0	60.0	2.0	35.0	-	-	-	-	-		
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	7.4	3.6	2.1	2.4	6.1		
recycled	12.0	6.9	0.0	11.3	0.0	0.0	0.0	0.0	103.0	0.0	0.0	24.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.0	0.0	40.0	0.0	60.0	0.0	28.0	0	0	0	0	0		
recyclable	12.0	6.9	0.0	14.1	0.9	4.0	0.0	0.0	103.0	0.0	0.0	24.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.0	0.0	40.0	0.0	60.0	0.0	35.0	0	0	0	0	0		
repair / renew	12.0	6.9	0.1	14.1	0.9	4.0	5.0	0.0	103.0	0.1	0.1	24.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	19.0	1.5	40.0	2.0	60.0	2.0	35.0	0.0	0.0	0.0	0.0	0.0		
embodied carbon	0.004	0.051	0.000	0.034	0.007	0.011	0.001	0.001	0.000	0.218	0.001	0.001	0.047	0.001	0.000	0.000	0.000	0.000	0.000	0.004	0.014	0.040	0.001	0.083	0.001	0.125	0.001	0.237	0.000	0.000	0.000	0.000	

total	304.2	90.6%	recycled
total	318.9	95.0%	recyclable
total	331.7	98.8%	repair / renew
		0.88	embodied carbon provisional kg of co2

### circular product

### true twin

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heat sink	heat sink finish	label	baffle	baffle paint	shield	case	springer/ballcatch	screws for springs	screws for lift	circclip	outer baseel	outer baseel paint	second outer baseel	second outer baseel p	inner baseel	inner baseel paint	recycled plaster plate	other steel	other aluminium	other recycled plastic	other non-recycled	COMPLETE PRODUCT	COMPLETE PRODUCT
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%	0%		
recyclable %	100%	100%	0%	100%	100%	100%	0%	0%	100%	0%	0%	100%	0%	100%	100%	100%	100%	100%	100%	100%	100%	0%	100%	0%	100%	100%	100%	100%	100%	100%	0%	0%	
repair / renew %	100%	100%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%
weight grams	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	21.5	2.0	15.0	-	-	1.0	4.0	19.0	1.5	40.0	2.0	60.0	2.0	35.0	-	-	-	-	-		
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	7.4	3.6	2.1	2.4	6.1		
recycled	12.0	6.9	0.0	11.3	0.0	0.0	0.0	0.0	103.0	0.0	0.0	21.5	0.0	12.0	0.0	0.0	0.0	0.0	0.0	19.0	0.0	40.0	0.0	60.0	0.0	28.0	0	0	0	0	0		
recyclable	12.0	6.9	0.0	14.1	0.9	4.0	0.0	0.0	103.0	0.0	0.0	21.5	0.0	15.0	0.0	0.0	0.0	1.0	4.0	19.0	0.0	40.0	0.0	60.0	0.0	35.0	0	0	0	0	0		
repair / renew	12.0	6.9	0.1	14.1	0.9	4.0	5.0	0.0	103.0	0.1	0.1	21.5	2.0	15.0	0.0	0.0	0.0	1.0	4.0	19.0	1.5	40.0	2.0	60.0	2.0	35.0	0.0	0.0	0.0	0.0	0.0		
embodied carbon	0.004	0.051	0.000	0.034	0.007	0.011	0.001	0.001	0.000	0.218	0.001	0.001	0.042	0.001	0.110	0.000	0.000	0.000	0.004	0.014	0.040	0.001	0.083	0.001	0.125	0.001	0.237	0.000	0.000	0.000	0.000		

total	313.7	88.8%	recycled
total	336.4	95.2%	recyclable
total	349.2	98.9%	repair / renew
		1.01	embodied carbon provisional kg of co2

### circular product



vara

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heat sink	heat sink finish	label	baffle	baffle paint	shield	case	spring/ ballcatch	screws for springs	screws for lift	circclip	outer baseel	outer baseel paint	second other baseel	second outer baseel p	inner baseel	inner baseel paint	recycled plaster plate	other steel	other aluminium	other recycled plank	other non-recycled	COMPLETE PRODUCT	COMPLETE PRODUCT
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	100%	0%	0%	100%	80%	0%	0%	0%
recyclable %	100%	100%	0%	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	0%	100%	100%	100%	100%	100%	100%	100%	0%	100%	0%	100%	0%	100%	100%	100%	100%	100%	0%	
repair / renew %	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
weight grams	-	-	-	-	-	-	16.0	12.0	128.0	128.0	11.6	61	19	0.6	7.4	7.4	2.0	3.6	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	2.1	2.4	2.1	2.4	6.1	
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	61	19	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	2.1	2.4	2.1	2.4	6.1		
recycled	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	128.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
recyclable	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	128.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
repair / renew	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	128.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
embodied carbon	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.027	0.000	0.000	0.000	0.000	0.000	0.000	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.123		
<b>total</b>																												<b>128.0</b>	<b>71.9%</b> recycled				
<b>total</b>																												<b>150.0</b>	<b>73.0%</b> recyclable				
<b>total</b>																												<b>150.0</b>	<b>73.0%</b> repair / renew				
<b>total</b>																												<b>0.28</b>	<b>embodied carbon</b> provisional kg of co2				

circular product

via square

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heat sink	heat sink finish	label	baffle	baffle paint	shield	case	spring/ ballcatch	screws for springs	screws for lift	circclip	outer baseel	outer baseel paint	second other baseel	second outer baseel p	inner baseel	inner baseel paint	recycled plaster plate	other steel	other aluminium	other recycled plank	other non-recycled	COMPLETE PRODUCT	COMPLETE PRODUCT
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	100%	0%	0%	100%	80%	0%	0%	0%
recyclable %	100%	100%	0%	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	0%	100%	100%	100%	100%	100%	100%	100%	0%	100%	0%	100%	0%	100%	100%	100%	100%	100%	100%	0%
repair / renew %	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
weight grams	-	-	-	-	-	-	3.4	0.1	-	-	-	21.0	1.0	0.6	7.4	7.4	3.7	3.6	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	2.1	2.4	2.1	2.4	6.1	
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	61	19	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	2.1	2.4	2.1	2.4	6.1		
recycled	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.0	0.0	69.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
recyclable	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.0	0.0	69.0	0.0	0.0	0.0	25.0	0.0	0.0	0.0		
repair / renew	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	30.0	0.0	69.0	0.0	0.0	0.0	25.0	0.0	0.0	0.0	0.0		
embodied carbon	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.041	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.063	0.000	0.144	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
<b>total</b>																												<b>120.0</b>	<b>80.3%</b> recycled				
<b>total</b>																												<b>145.0</b>	<b>97.0%</b> recyclable				
<b>total</b>																												<b>146.0</b>	<b>97.7%</b> repair / renew				
<b>total</b>																												<b>0.25</b>	<b>embodied carbon</b> provisional kg of co2				

circular product

via tall

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heat sink	heat sink finish	label	baffle	baffle paint	shield	case	spring/ ballcatch	screws for springs	screws for lift	circclip	outer baseel	outer baseel paint	second other baseel	second outer baseel p	inner baseel	inner baseel paint	recycled plaster plate	other steel	other aluminium	other recycled plank	other non-recycled	COMPLETE PRODUCT	COMPLETE PRODUCT
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	100%	0%	0%	100%	80%	0%	0%	0%
recyclable %	100%	100%	0%	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	0%	100%	100%	100%	100%	100%	100%	100%	0%	100%	0%	100%	0%	100%	100%	100%	100%	100%	100%	0%
repair / renew %	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
weight grams	-	-	-	-	-	-	3.4	0.1	-	-	-	38.0	1.0	0.6	7.4	7.4	3.7	3.6	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	2.1	2.4	2.1	2.4	6.1	
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	61	19	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	2.1	2.4	2.1	2.4	6.1		
recycled	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	39.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.0	0.0	69.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
recyclable	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	39.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.0	0.0	69.0	0.0	0.0	0.0	35.0	0.0	0.0	0.0		
repair / renew	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	39.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	30.0	0.0	69.0	0.0	0.0	0.0	35.0	0.0	0.0	0.0	0.0		
embodied carbon	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.076	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.063	0.000	0.144	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.125		
<b>total</b>																												<b>138.0</b>	<b>77.7%</b> recycled				
<b>total</b>																												<b>173.0</b>	<b>97.5%</b> recyclable				
<b>total</b>																												<b>174.0</b>	<b>98.0%</b> repair / renew				
<b>total</b>																												<b>0.28</b>	<b>embodied carbon</b> provisional kg of co2				

circular product



vira adjustable

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heatstick	heatstick finish	label	baffle	baffle paint	shield	case	spring/ ballcatch	screws for springs	screws for LH	circclip	outer base	outer base paint	second outer base	second outer base paint	inner base	inner base paint	recycled plaster plate	other steel	other aluminium	other recycled plastic	other nonrecycled	COMPLETE PRODUCT	COMPLETE PRODUCT					
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%							
recyclable %	100%	100%	0%	100%	100%	100%	0%	0%	0%	100%	0%	0%	100%	0%	100%	0%	100%	100%	100%	100%	100%	0%	100%	0%	100%	0%	100%	100%	100%	100%	0%							
repair / renew %	100%	100%	100%	100%	100%	100%	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%							
weight grams	12.0	6.9	0.1	14.1	0.9	4.0	5.0	3.9	0.1	103.0	0.1	0.1	8.0	3.0	40.0	10.0	6.0	2.0	2.0	8.0	16.0	1.5	0.0	0.0	71.0	2.0	-	-	-	-	-	-						
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	7.4	3.6	2.1	2.4	6.1							
recycled	12.0	6.9	0.0	11.3	0.0	0.0	0.0	0.0	0.0	103.0	0.0	0.0	8.0	0.0	32.0	0.0	0.0	0.0	0.0	0.0	16.0	0.0	0.0	0.0	71.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
recyclable	12.0	6.9	0.0	14.1	0.9	4.0	0.0	0.0	0.0	103.0	0.0	0.0	8.0	0.0	40.0	10.0	6.0	2.0	2.0	8.0	16.0	0.0	0.0	0.0	71.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
repair / renew	12.0	6.9	0.1	14.1	0.9	4.0	5.0	0.0	0.0	103.0	0.1	0.1	8.0	3.0	40.0	10.0	6.0	2.0	2.0	8.0	16.0	1.5	0.0	0.0	71.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
embodied carbon	0.004	0.091	0.000	0.024	0.007	0.011	0.001	0.001	0.000	0.215	0.001	0.001	0.016	0.002	0.294	0.074	0.022	0.007	0.007	0.029	0.033	0.001	0.000	0.000	0.148	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
<b>total</b>																											<b>260.2</b>	<b>315.0</b>	<b>315.7</b>	<b>0.96</b>								
																											<b>81.4%</b>	<b>95.1%</b>	<b>98.7%</b>	<b>0.96</b>								

circular product

vira twin

	glass lens	reflector	reflector finish	engine body	engine band	lv cable core	lv cable insulation	pcb	LED	heatstick	heatstick finish	label	baffle	baffle paint	shield	case	spring/ ballcatch	screws for springs	screws for LH	circclip	outer base	outer base paint	second outer base	second outer base paint	inner base	inner base paint	recycled plaster plate	other steel	other aluminium	other recycled plastic	other nonrecycled	COMPLETE PRODUCT	COMPLETE PRODUCT								
recycled %	100%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	80%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	80%	0%	100%	80%	0%										
recyclable %	100%	100%	0%	100%	100%	100%	0%	0%	0%	100%	0%	0%	100%	0%	100%	0%	100%	100%	100%	100%	100%	0%	100%	0%	100%	0%	100%	100%	100%	100%	0%										
repair / renew %	100%	100%	100%	100%	100%	100%	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%									
weight grams	24.0	13.8	0.2	28.2	1.8	8.0	10.0	7.8	0.2	206.0	0.2	0.2	16.0	6.0	80.0	20.0	12.0	4.0	4.0	-	25.0	3.0	0.0	0.0	142.0	4.0	-	-	-	-	-	-	-								
co2 / kg	0.3	7.4	4.1	2.4	7.4	2.6	0.3	0.3	0.1	2.1	11.6	6.1	1.9	0.6	7.4	7.4	3.7	3.6	3.6	3.6	2.1	0.6	2.1	0.6	2.1	0.6	7.4	3.6	2.1	2.4	6.1										
recycled	24.0	13.8	0.0	22.6	0.0	0.0	0.0	0.0	0.0	206.0	0.0	0.0	16.0	0.0	64.0	0.0	0.0	0.0	0.0	0.0	25.0	0.0	0.0	0.0	142.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
recyclable	24.0	13.8	0.0	28.2	1.8	8.0	0.0	0.0	0.0	206.0	0.0	0.0	16.0	0.0	80.0	20.0	12.0	4.0	4.0	0.0	25.0	0.0	0.0	0.0	142.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
repair / renew	24.0	13.8	0.2	28.2	1.8	8.0	10.0	0.0	0.0	206.0	0.2	0.2	16.0	6.0	80.0	20.0	12.0	4.0	4.0	0.0	25.0	3.0	0.0	0.0	142.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
embodied carbon	0.007	0.102	0.001	0.068	0.013	0.021	0.003	0.003	0.000	0.429	0.002	0.001	0.031	0.004	0.588	0.148	0.044	0.014	0.000	0.000	0.032	0.002	0.000	0.000	0.296	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
<b>total</b>																											<b>515.4</b>	<b>590.3</b>	<b>604.4</b>	<b>1.83</b>											
																											<b>83.8%</b>	<b>94.8%</b>	<b>98.7%</b>	<b>1.83</b>											

circular product





erluna

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appendix 10

epd





## appendix 10 epd

Environmental product declarations (“EPD”) help to give transparency on products and help designers to compare between products. We recognise this need and the importance of transparency.

At 14 June 2022 we have full EPD available on request.





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appendix 11

power supply units





## appendix 11

# power supply units

Please note that the data in this document applies to LIGHT FITTINGS ONLY and EXCLUDES power supply units. The reason for this is that our power supply manufacturers cannot as yet supply this information.

Orluna uses European-brand power supply units for all its products. We purchase these products and re-sell them with our light fittings. These fall outside our circular model as they are manufactured in China and being manufactured so far away it is not possible to operate the circular model.

Nevertheless we have made some small progress. We have just concluded an agreement with Osram whereby:

- outer case is will be 80% recycled material
- drivers which accompany Orluna's circular products returned will be collected and recycled appropriately by Orluna
- voltage is calibrated with our downlights to maximise efficiency
- all power supplies have over 90% efficiency

These power supply units will cover around 50% of Orluna power supply unit sales.





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appendix 12  
local build





## appendix 12 local build

All our products are made in at one of our three UK factories located in Watford, Hertfordshire, England.

Local build is core to achieving a circular business. Local build is important for transparency in the supply chain as well as for us to authenticate supplier environmental claims.

We also have a network of local painters, machinists and sub-component suppliers. On-shoring of suppliers helps rebalance local economies.

We publish our supply chain for each component of every product which we supply.





## appendix 12 our supply network

The table below shows our supply network for a typical 80mm downlight. We make as many components as possible with local sub-contractors.

The table shows that Orluna has a full local supply ecosystem which includes local moulding, cutting, painting and assembly.

It should be noted that the UK manufacturing base is no longer a supplier of most raw materials nor engages in high pressure diecasting. These materials and services are therefore sourced from overseas.

where made & travel co2 estimate

	raw material (aluminium, steel polycarbonate)	cutting moulding casting machining	paint drying anodising tempering printing vacuum metal	led population soldering	mechanism assembly	fitting assembly	engine assembly	luminaire assembly	luminaire testing	packing	travelled by sea (km) 6.04gCO2/ton-k0gCO2/ton-km	travelled by road (km) 6.04gCO2/ton-k0gCO2/ton-km	travelled by sea (km) 6.04gCO2/ton-k0gCO2/ton-km	travelled by road (km) 6.04gCO2/ton-k0gCO2/ton-km
glass lens	china	china					uk	uk	uk	uk	4868	0	29.4	0
reflector	china	china	china				uk	uk	uk	uk	4868	60	29.4	4.8
engine body	germany	uk	uk				uk	uk	uk	uk	0	1000	0.0	80
engine band	china	uk	uk				uk	uk	uk	uk	0	60	0.0	4.8
lv cable	china	china		uk			uk	uk	uk	uk	4868	60	29.4	4.8
pcb	china	china		uk			uk	uk	uk	uk	4868	60	29.4	4.8
LED	china	china		uk			uk	uk	uk	uk	6000	60	36.2	4.8
heatsink	china	china	china				uk	uk	uk	uk	4868	60	29.4	4.8
label	china		uk				uk	uk	uk	uk	4868	60	29.4	4.8
outer bezel	china	china	uk			uk		uk	uk	uk	4868	60	29.4	4.8
l-mech baffle	germany	uk	uk		uk	uk		uk	uk	uk	4868	60	29.4	4.8
shield	germany	uk	uk		uk	uk		uk	uk	uk	0	1000	0.0	80
cape	china	china	china		uk	uk		uk	uk	uk	4868	60	29.4	4.8
tick springs	china	uk	uk			uk		uk	uk	uk	4868	60	29.4	4.8
screws for sprin	china	china				uk		uk	uk	uk	4868	60	29.4	4.8
screws for tilt	china	china			uk	uk		uk	uk	uk	4868	60	29.4	4.8
circclip	china	uk	uk			uk		uk	uk	uk	4868	60	29.4	4.8
													418.5	227.2
													<b>total</b>	<b>645.7</b>



## manufacturing waste

Orluna's three factories are in the UK and involve assembly and soldering operations. These factories have 100% renewable power (albeit 24% nuclear) and manufacturing waste is measured.

The only direct manufacturing waste generated at our factories is packaging received from sub suppliers.

We largely avoid subtractive processes (such as machining, laser cutting and stamping) in favour of injection forming or high-pressure diecasting.

## local community

A move away from the distant linear manufacturing model to the local circular model helps address the issue of lack of good quality local employment.

As a circular business, we are a local source of good quality employment with manufacturing taking place within our local community.

We have three factories with "blue collar" manufacturing roles. We have no long-term temporary contracts or zero hour contracts. The average tenure in our factory is 6.5 years.

A close local link with our factory, design and sales helps product development.







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appendix 13

packaging





## appendix 13 packaging

All of Orluna’s final product and sample packaging is 80% FSC mixed use recycled, 100% recyclable, vegetable ink, local with no plastics.

We have worked with our supply chain to improve “hidden” sub-contractor packaging. The table below gives an overview of our progress.

	transport between factories & sub-suppliers							
	final product packaging	engine assembly	fitting assembly	mechanism assembly	led population soldering	cutting moulding casting machining (into our factory)	paint dying anodising tempering printing vacuum metal	raw material (aluminium, steel polycarbonate)
glass lens	recycle	re-use				paper		not known
reflector	recycle	re-use				paper	not known	not known
engine body	recycle	re-use				re-use	re-use	not known
engine band	recycle	re-use				re-use	re-use	not known
lv cable	recycle	re-use			re-use	paper		not known
pcb	recycle	re-use			re-use	plastic		not known
LED	recycle	re-use			re-use	plastic		not known
heatsink	recycle	re-use				paper	not known	not known
label	recycle					paper	not known	not known
outer bezel	recycle		re-use			paper	re-use	not known
l-mech baffle	recycle		re-use	re-use		paper	re-use	not known
shield	recycle		re-use	re-use		re-use	re-use	not known
cape	recycle		re-use	re-use		not known	paper	not known
tick springs	recycle		re-use			paper	paper	not known
screws for spring	recycle		re-use			paper		not known
screws for tilt	recycle		re-use	re-use		paper		not known
circlip	recycle		re-use			paper	paper	not known

re-use	re-used containers circulating between locations
recycle	uk, 100% fsc, 80% recycled, 100% recyclable, recyclable tape, no plastics
paper	non-uk paper or cardboard, no plastics (except plastic tape)
plastic	non-uk paper or cardboard, no plastics (except plastic tape) plus <u>plastic bags used</u>
not known	not known



## appendix 13 re-useable containers

As part of the company adopting its circular model, the bulk of our supply chain was moved to the UK. Part of the benefit of this is that we have been able to implement a system of reusable, circular packaging between suppliers.

Orluna has reusable plastic containers which circulate continuously between Orluna and its suppliers. Suppliers drop off components at Orluna's factories in Orluna's plastic containers. At the same time the supplier picks up empty containers to take back to their factories ready to receive deliveries the next order.

With the exception of the (relatively rare) bezel and baffle anodising process, no UK supplier to Orluna uses any single-use packaging when delivering to, or picking up from, Orluna.

*traditional lighting stock room with excess paper and plastic from sub-suppliers.*



*Orluna stock room with re-useable containers.*



## appendix 13 unnecessary packaging

Before Orluna's circularity transformation, the supply of our reflectors from a sub-supplier was an example of thoughtless and unnecessary packaging.

As part of our packaging audit, we noticed that each and every single reflector was received from our sub-supplier placed in an individual plastic bag. The reflectors in plastic bags were then stacked in four layers with each layer separated by a plastic foam divider within the final corrugated cardboard outer box.

We questioned the supplier why they felt the need to place each reflector within an individual plastic bag. We were told that they had assumed that every customer wanted this in order to protect the reflectors in transport.

We then trialed three deliveries with the reflectors not placed in individual plastic bags and having no dividers. To our delight the reduced packaging resulted in no product damage in transit.



manufacturers

reduced unnecessary packaging between

This was a moment of delight in our circularity journey. This small moment of questioning and reflection has resulted in reducing our consumed plastic bags by tens of thousands every year. We also don't have to pay for someone's time to fill the bags, empty the bags and then for UK disposal or recycling.



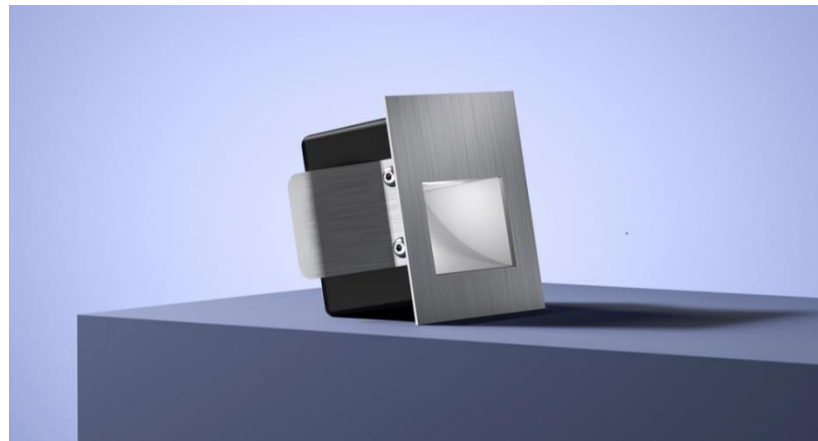
## appendix 13 multipacks

Most of our orders contain many of the same type light fitting. Traditionally these shipments would have individual boxes for each individual light fitting in addition to the outer carton. Each fitting would also be contained in a plastic bag within the individual box.

Nowadays, around 70% of our finished product ships in multipacks.

Multipacks are boxes which have cardboard cut-outs to hold ten lights. In essence, multipacks just use an outer container and three inserts to transport ten lights.

The benefit of multipacks is that they use much less cardboard material than would be used if one used individual boxes for each product plus an outer container. Multipacks are also quicker to pack and inspect.





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appendix 14

our journey





## appendix 14 our journey

Orluna has spent the last four years understanding the impact on the environment and society of light fittings.

This has been a ground-up exercise, led by our Managing Director. We have become more and more engaged (and revolutionary) as we have learnt more.

This long, painful journey has taken us from naivety, to bewilderment, to being overwhelmed through to absolute rage at widespread inaction, obfuscation, and greenwashing.

Nevertheless, with the help of the principals set out in the Ellen MacArthur Foundation, we eventually worked out that the adoption of a fully circular business model was the best full and immediate answer for Orluna.

Orluna is now a fully circular business meaning that all our products are now circular products.





## our conclusions, so far

- 1) invest in local manufacturing – avoid long opaque overseas supply chains
- 2) use recycled materials (less virgin materials and typically less embodied carbon)
- 3) give full business transparency using a detailed numbers-led approach
- 4) include circularity early in product design
- 5) single-use is the enemy
- 6) end-of-life recycling is not enough
- 7) documentation is not enough, action is needed
- 8) the problem is wider than environmental, single use is also a cause of lack of progress for developing countries – circular economy Vs circular society

Our journey now moves to the next step.







erluna

appendix 15

our environmental  
support package





## our environmental support package

It is time to be hopeful.

Most consumer products are made in a far corner of the world through long opaque supply chains. Let's reject this throwaway model.

An immediate move to a circular society is the largest single move to achieving greater sustainability as well as leaving more virgin materials for developing countries and help reduce inequalities.

Furthermore, the repair model is more cost effective in the long term.

Let's make radical and immediate change!

We offer a service where we work with designers to share the manufacturer perspective, to help meet the client's environmental needs. This includes TM66, EPDs as well as CPDs. Please ask by contacting [akilborn@orluna.com](mailto:akilborn@orluna.com)

