

# ARC SERIES

LED HIGHBAY LIGHTING



Electrical Control, Switchgear  
& Energy Saving specialists

[lighting@demesne.ie](mailto:lighting@demesne.ie)



## The Arc® of the future

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High bay lighting is undergoing a revolution, from energy-intensive, unhealthy, cumbersome and "dumb" lighting to intelligent LED.

Arc is redefining high bay lighting, with an elegant and incredibly lightweight design that lasts longer, yielding more from your LED investment. Arc also has the option of on-board intelligence, taking energy savings to a new level and giving you ultimate control over your building for many years to come.

SMART DESIGN  
SMART CONTROL  
APPLICATION KNOW-HOW +  
**ACCELERATED PAYBACK**

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# LIGHT-WEIGHT

## THE LIGHTEST LED HIGH BAY IN THE WORLD

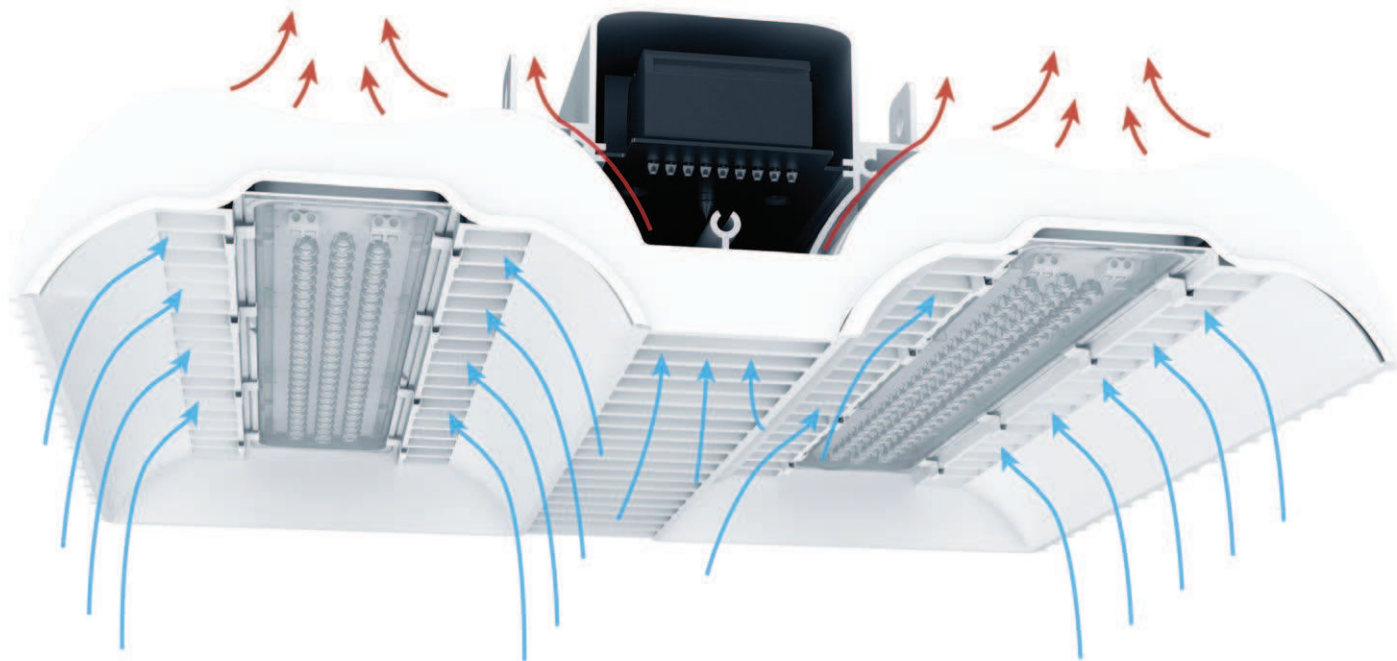
At just 4.3kg or 9.0kg depending on the model, the minimalist footprint and light-weight materials of Arc not only create an elegant architectural design, they substantially reduce installation, shipping and handling costs.

4.3 - 9.0  
kg

## INNOVATIVE THERMAL DESIGN

Through innovative design we have maximised the amount of surface area of the cooling fins, this is where the majority of the heat dissipation function is achieved. This results in maximum cooling of the LEDs which gains efficiency and durability. The finned design ensures that any dust or particle build up is deflected through the product and minimises accumulation which might impact on performance or warranty.

The power supply has its own separate housing, isolated from the heat of the LED's with its own cooling design. This extends the product's lifetime.

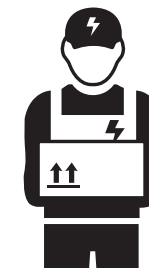


## LIGHT ON INSTALLATION AND HANDLING COSTS

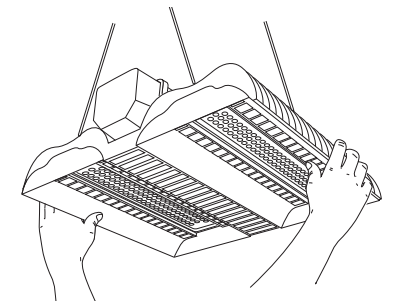
Lower freight costs



Easier storage and handling



One person installation





# LIGHT ON **TOTAL LIFETIME COST**

## LIGHT ON **ENERGY**

The latest LED technology combined with highly effective optical design delivers industry-leading efficiency of between 104 and 116 lm/W.

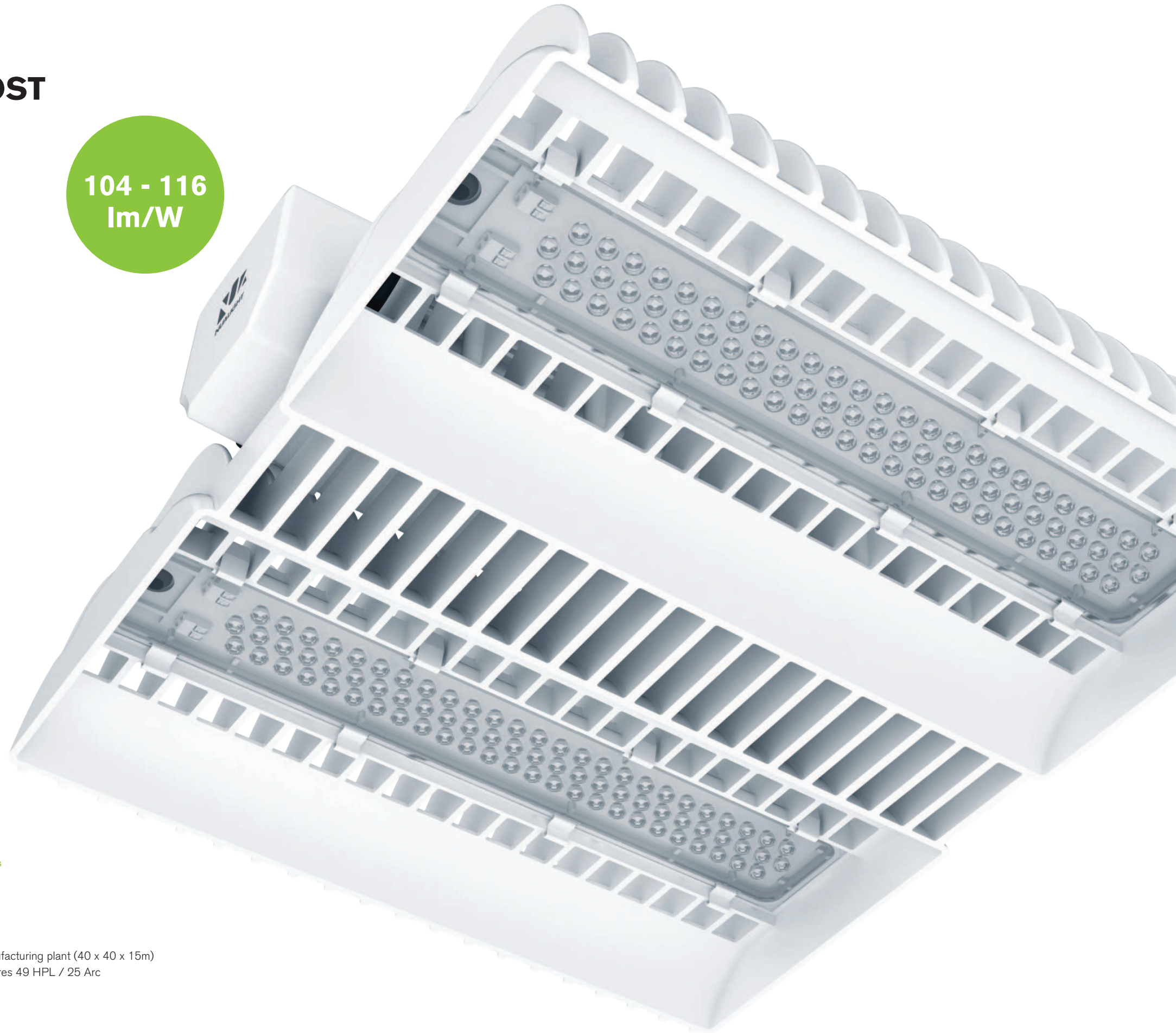
**104 - 116  
lm/W**

## LIGHT ON **MATERIALS AND HANDLING COSTS**

The very light-weight design of Arc reduces initial investment costs, particularly for installation and handling.

## LIGHT ON **FIXTURE COUNT**

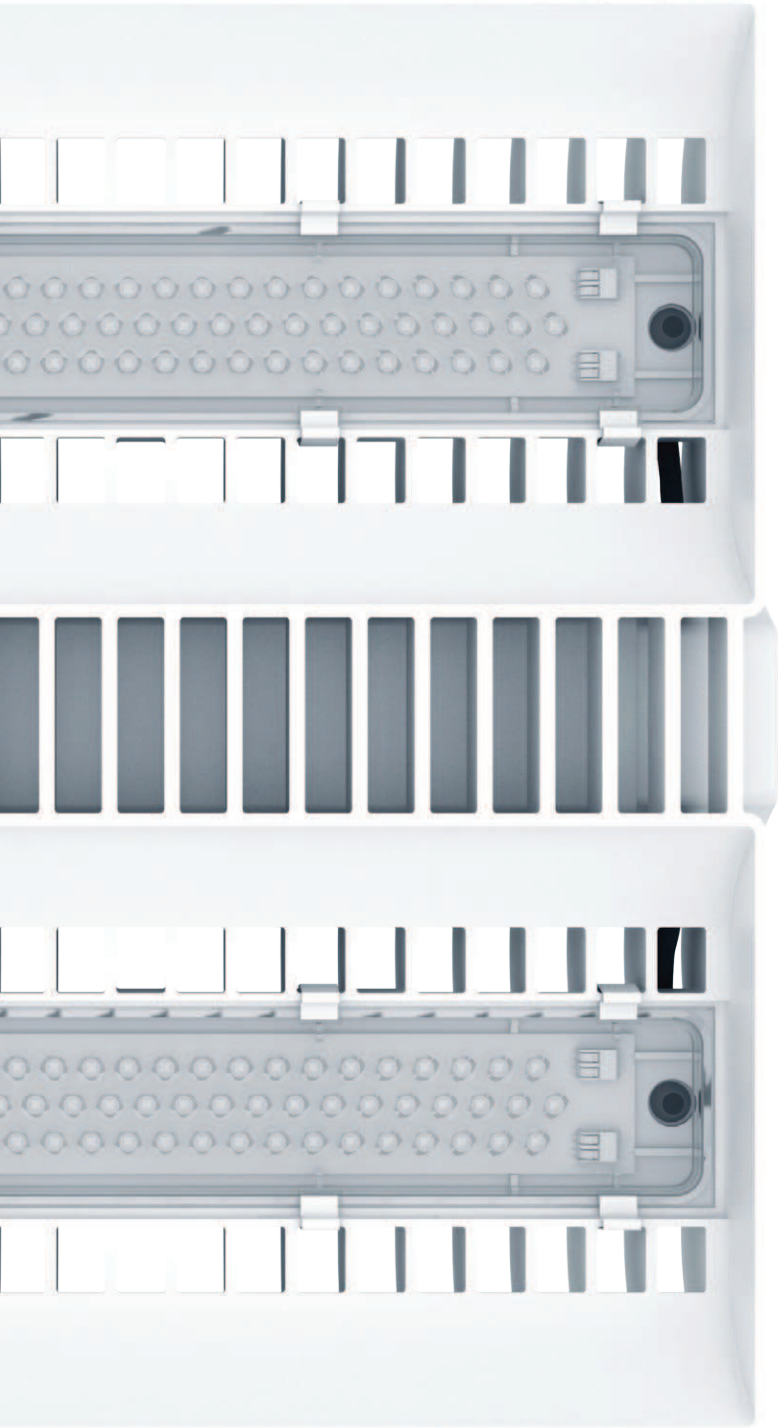
Arc is a highly configurable high bay family, enabling users to choose the optimum model. This, combined with a very uniform light distribution that maximises space between fixtures, facilitates a very lean approach to light planning.



Manufacturing plant (40 x 40 x 15m)  
Fixtures 49 HPL / 25 Arc



# LIGHT FOR **PRECISION AND PRODUCTIVITY**



## MINIMUM **GLARE**

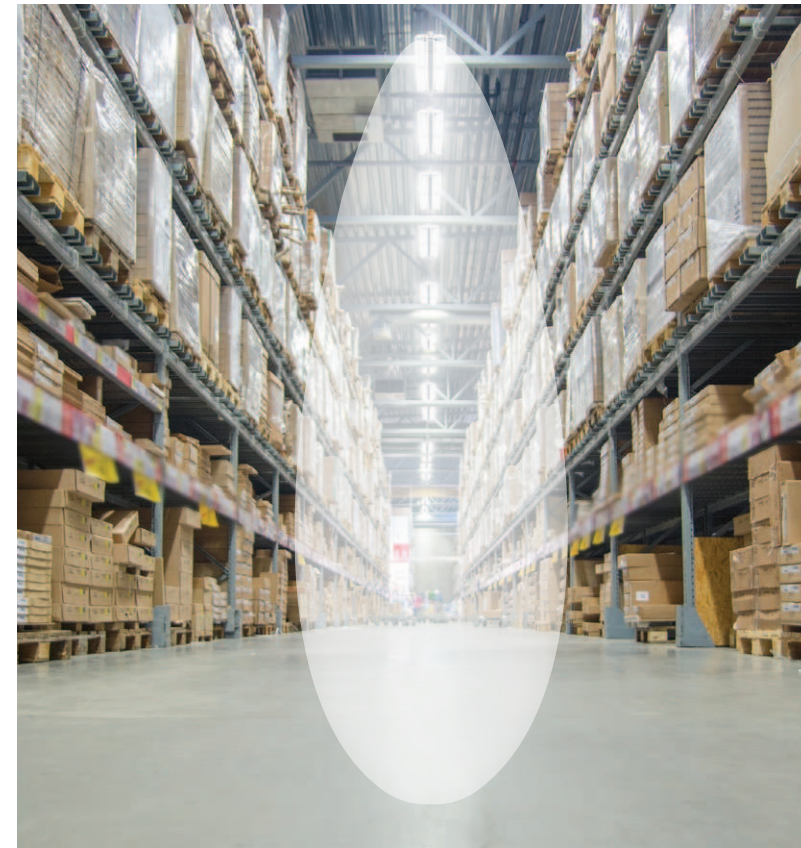
Optics are moulded in a clear shatter resistant polycarbonate (PC), which is treated with an optically clear, abrasion and chemical-resistant protective film that reduces glare. At 8 meters Arc achieves a UGR value of 18-22.

## PRECISION **OPTICS**

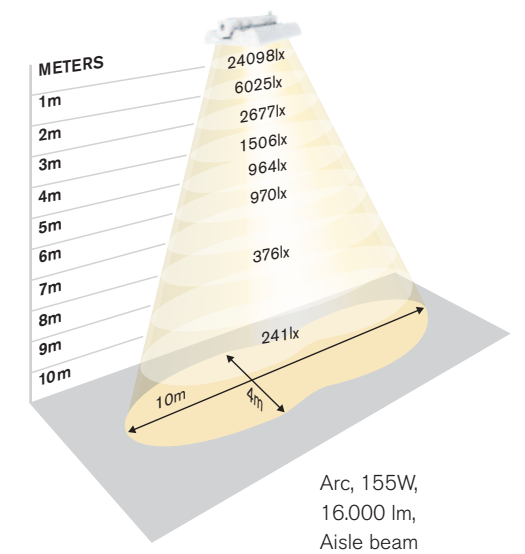
Customised lensed optics, optimised for high-racking and manufacturing environments, that deliver very high uniformity and maximum spacing between fixtures.

## **NATURAL** LIGHTING

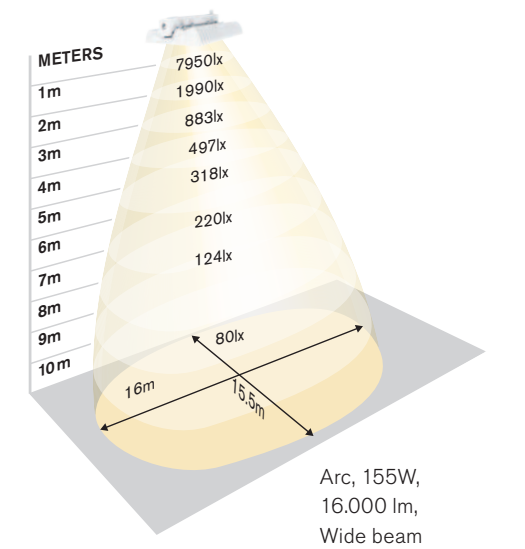
CRI>80 and industry leading colour repeatability with 3 SDCM colour tolerance. Creates a fresh, natural workplace ambience with very good colour visibility.



Aisle beam for high ceilings. Ideal for warehouse applications.



Wide beam ideal for lighting large areas such as manufacturing plants, large retail areas and conference centres.



# LIGHTING FOR SMARTER SPACES

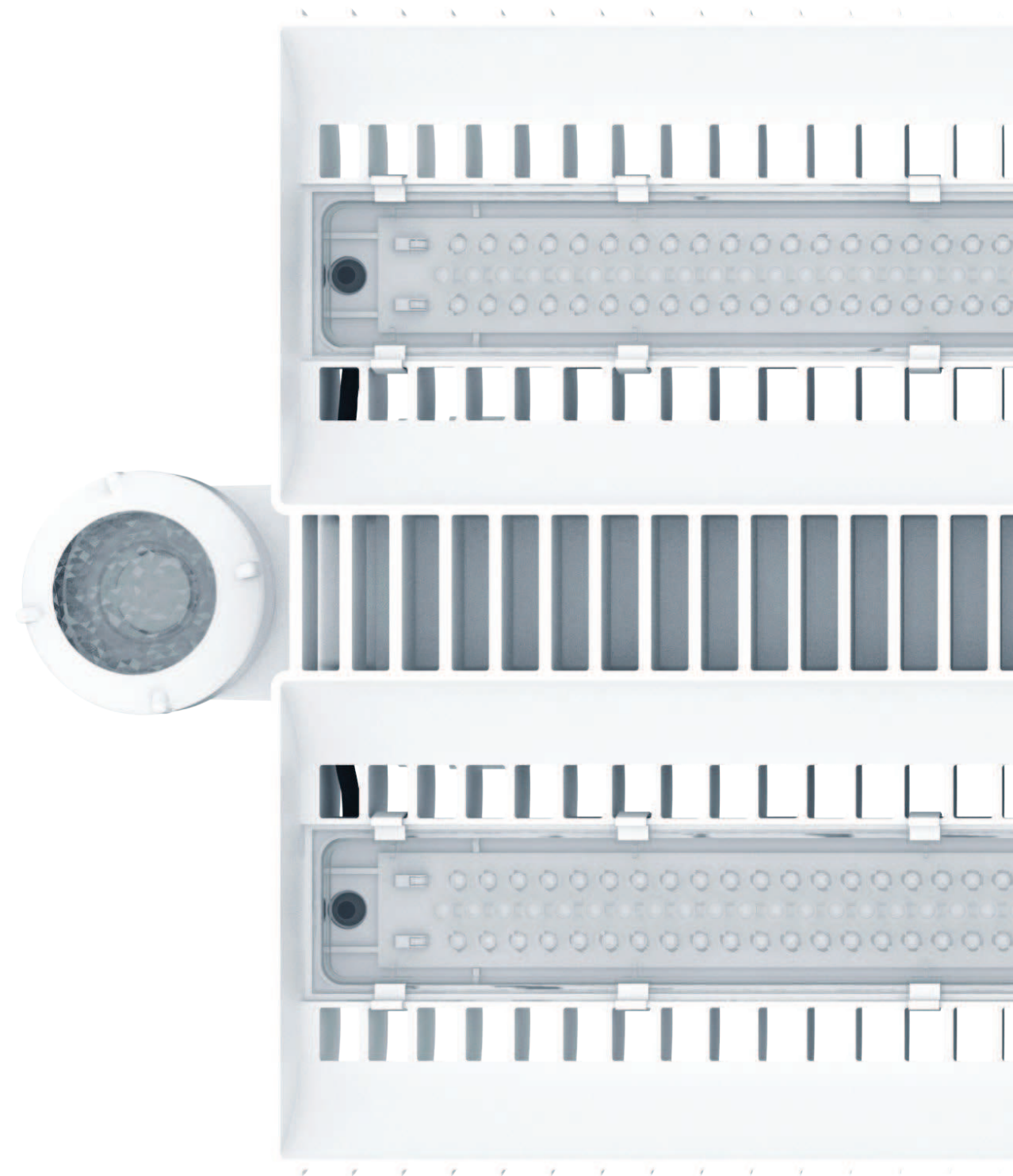
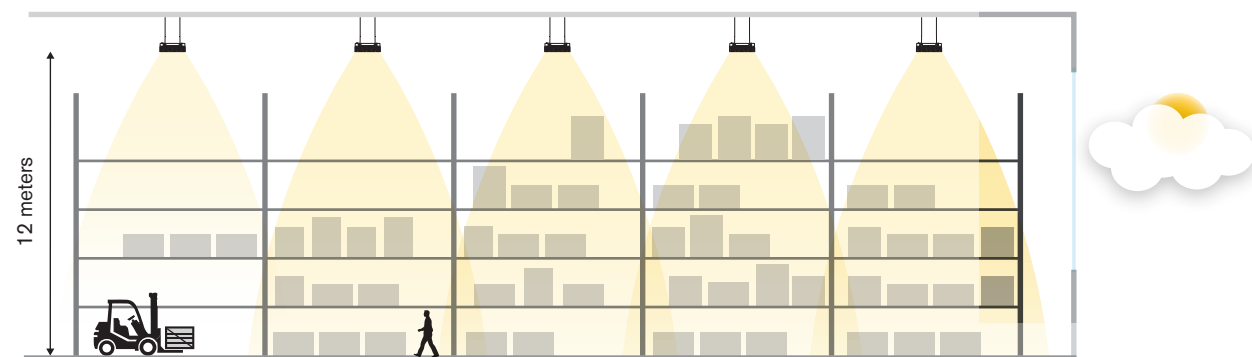
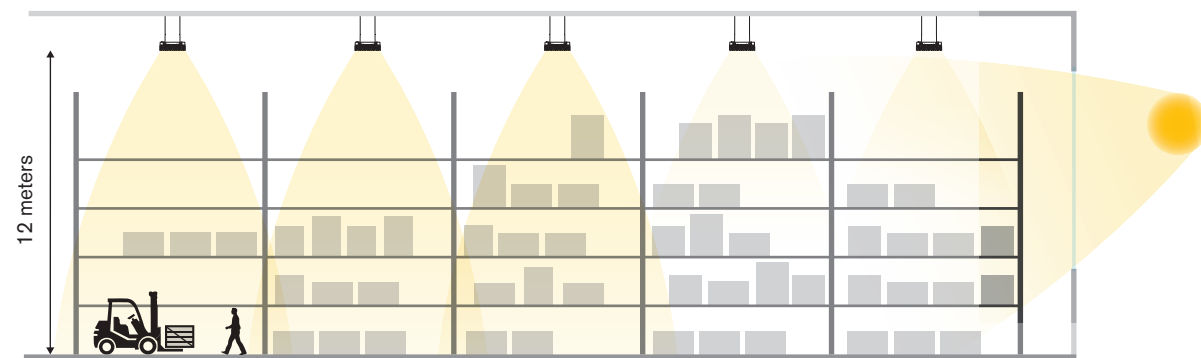
## SAVE UP TO **30% MORE ENERGY** WITH SMART CONTROLS

Large industrial spaces often have periods of inoccupancy, when lighting is unnecessary. By selecting the version of Arc with sensor technology and a DALI driver, daylight harvesting and occupancy dimming can be easily integrated, typically yielding additional energy savings of up to 30% and driving paybacks down to even one year.



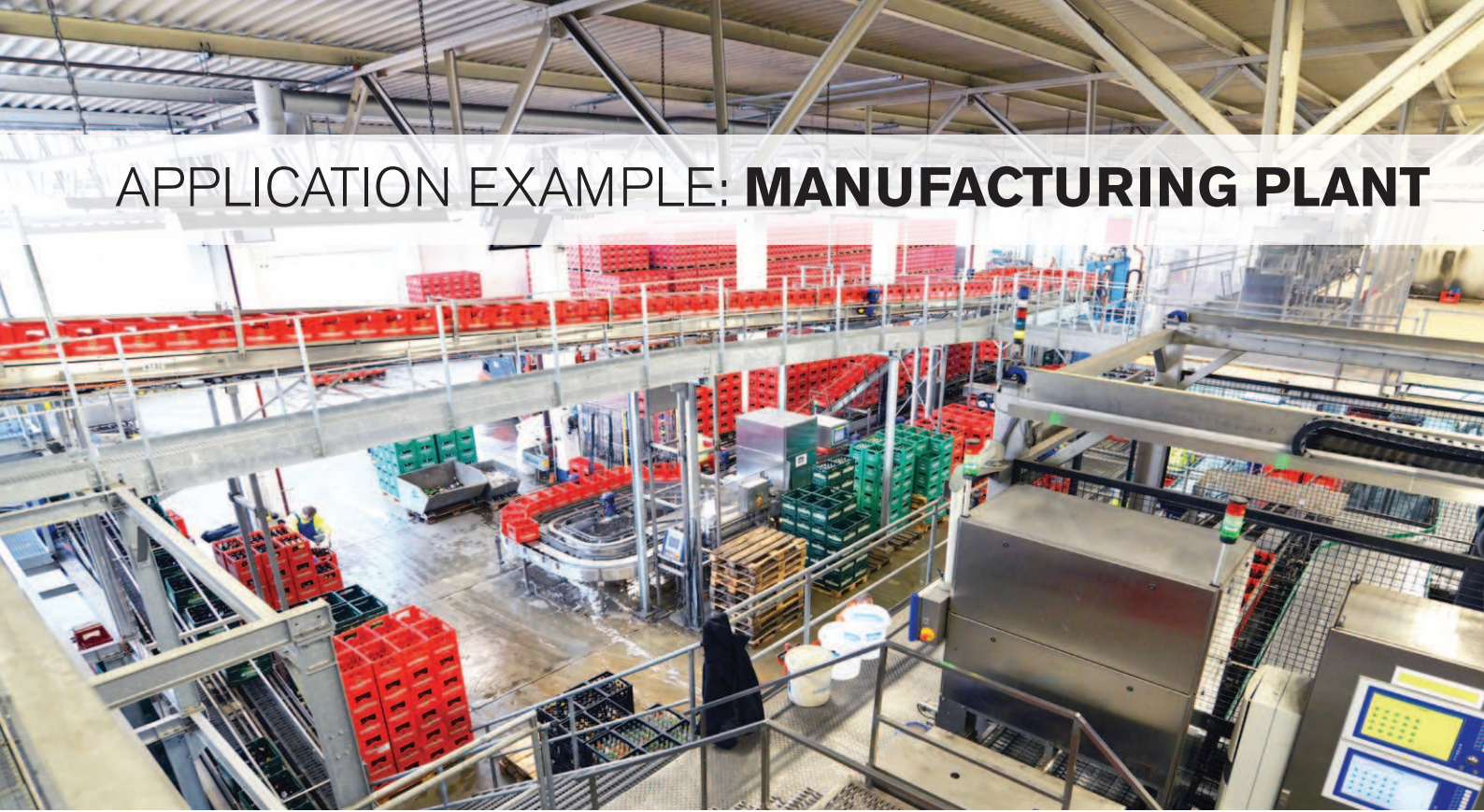
## **EASY** PROGRAMMING

Zones can be programmed very precisely and easily with a remote control.





# APPLICATION EXAMPLE: MANUFACTURING PLANT



## MEETING THE CHALLENGE BRIGHT AMBIENT LIGHTING FOR A PRODUCTIVE WORKING ATMOSPHERE

Manufacturing plants require bright and uniform lighting. Good lighting in manufacturing plants is crucial, especially in demanding situations requiring a high degree of concentration. With the right lighting people will feel active, focused and happier at work. In fact, studies have shown that it enhances overall productivity.



## UPGRADING TO ARC

For this example a wide optic was used. The beam angle of this optic is 60 degrees.



## BENEFITS

- Bright and uniform working space with Arc
- Low glare providing comfort and an enhanced working atmosphere
- Instant on and off switching, no start-up time
- No more maintenance

## SMART CONTROLS FOR FASTER PAYBACK

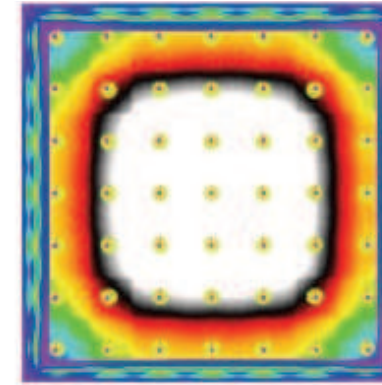
Smart dimming can make a big difference to energy consumption when lighting manufacturing plants with Arc.

For large manufacturing plants with specific zones, Arc's integrated DALI driver makes zonal dimming cost-effective and easy to deploy.

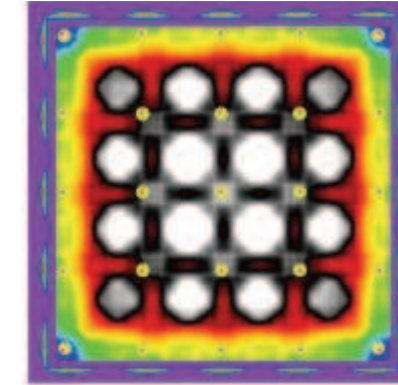
## COMPARISON

The illustrations below show a comparison between high pressure mercury lighting and Arc. A typical manufacturing plant layout was used and the fixtures were placed according to the calculations.

HPL



ARC LED



## REQUIREMENTS

EN 12464-1  
Working plane (on + 0.8 m): 300 lux  
U<sub>o</sub> < 0.6

## SPECIFICATIONS

floor surface 40 x 40 x 15 m (1600 m<sup>2</sup>)  
fixtures used 49 (HPL) / 25 (LED)  
mounting height 12 meters

## LIGHT SOURCE

	HPL	Arc LED	Benefit
Fixture power consumption (incl. ballast)	13,426 W	6,062 W	<b>48% less fixtures</b>
Used fixtures	49 x widebeam reflector HPL	25 x Arc widebeam 27000 lumens LED	
Overall lux level on workplane (0,8 m)	327 lx with U <sub>o</sub> 0,58	306 lx with U <sub>o</sub> 0,62	<b>2x longer lifetime</b>
Lifetime	16,000	> 50,000	
Power	250W	245W	<b>2x efficiency</b>
Luminous flux	12,700lm	27,000lm	
Luminous efficacy	51lm/W	110lm/W	<b>55% savings</b>
Overall power consumption per m <sup>2</sup>	8.39 W/m <sup>2</sup>	3.79 W/m <sup>2</sup>	
Annual electricity use	58,645 kWh	26,479 kWh	<b>55% savings</b>
<b>Annual energy cost</b>	<b>€ 8797,-</b>	<b>€ 3972,-</b>	
<b>Energy cost PIR</b>	<b>€ 8797,-</b>	<b>€ 1759,-</b>	<b>80% savings</b>



## ENERGY SAVINGS CAN BE EVEN HIGHER

There are many variables that determine actual energy savings: type of incumbent technology, condition of existing lighting and overlighting to compensate for lifetime light degradation will all have an impact. The range of energy savings shown on this application page are for guideline purposes only.

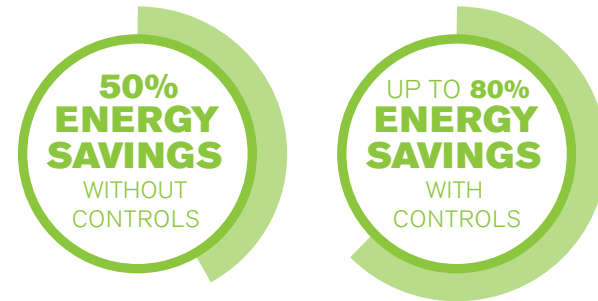


# APPLICATION EXAMPLE: WAREHOUSE



## MEETING THE CHALLENGE HIGH CEILINGS AND FLUCTUATING AMBIENT TEMPERATURES

Warehouse environments need effective and robust lighting. Temperature fluctuations and the risk of collisions call for durability. Shelving and racking, with deep shadowed spaces, need lighting to be as bright and uniform as possible for safety and usability.



## UPGRADING TO ARC

For this example a narrow optic was used. The narrow beam optic is ideal in situations with high ceilings, requiring a substantial amount of light on the floor. The lighting is distributed in a beam not wider than 60 x 20 degrees.



## BENEFITS

- Narrow beam-angle for high ceilings
- Good upward visibility due to high levels of vertical illuminance together with low glare
- Fluctuating ambient temperatures do not effect the 50,000 hour lifetime and performance
- Die-cast aluminium housing with extremely durable polyester powdercoating

## SMART CONTROLS FOR FASTER PAYBACK

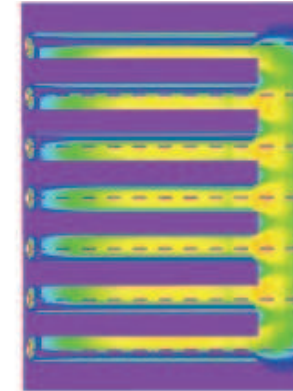
Smart dimming can make a big difference to energy consumption when lighting warehouses with Arc.

For large warehouses with specific zones, Arc's integrated DALI driver makes zonal dimming cost-effective and easy to deploy.

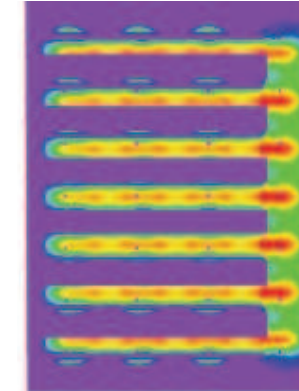
## COMPARISON

The illustrations below show a comparison between fluorescent lighting and Arc. A typical warehouse layout was used and the fixtures were placed according to the calculations.

T8 FLUORESCENT



ARC LED



## REQUIREMENTS

EN 12464-1 sub 1.5.2  
On floor level: 150 lux  
Uniformity  $U_0 < 0.4$

## SPECIFICATIONS

floor surface	41 x 30 x 10 m (1230 m <sup>2</sup> )
fixtures used	77 (T8) 28 (LED)
mounting height	8.5 meters
racking	8 m high
Aisle between racking	2.5 m wide

## LIGHT SOURCE

	T8	Arc LED	Benefit
Fixture power consumption (incl. ballast)	4,466 W	2,364 W	
Used fixtures	77 x 58W T8 deep reflector	28 x Arc Aisle beam 9000 lm	<b>63% less fixtures</b>
Overall lux level on workplane (0,8 m)	150 lx with $U_0$ 0,68	176 lx with $U_0$ 0,60	<b>17% more lux</b>
Lifetime	24,000	> 50,000	<b>2x longer lifetime</b>
Power	58W	80W	
Luminous flux	5200lm	9,000lm	
Luminous efficacy	90lm/W	113lm/W	<b>2x efficiency</b>
Overall power consumption per m <sup>2</sup>	3.63 W/m <sup>2</sup>	1.92 W/m <sup>2</sup>	
Uniformity $U_0$	0.68	0.60	
Annual electricity use	19,507 kWh	10,326 kWh	<b>47% savings</b>
Annual energy cost	€ 8797,-	€ 3972,-	<b>47% savings</b>
Energy cost PIR	€ 8797,-	€ 1800,-	<b>80% savings</b>



## ENERGY SAVINGS CAN BE EVEN HIGHER

There are many variables that determine actual energy savings: type of incumbent technology, condition of existing lighting and overlighting to compensate for lifetime light degradation will all have an impact. The range of energy savings shown on this application page are for guideline purposes only.



# APPLICATION EXAMPLE: LARGE RETAIL

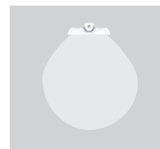


## FRESH, PLEASANT AMBIENCE WITH EXCELLENT VERTICAL ILLUMINATION ON SHELF DISPLAYS

Large retail spaces, such as cash & carry or DIY, require lighting that delivers a very pleasant shopping environment together with excellent vertical illumination for shelves. Daylight harvesting and dimming can also be a significant contributor to driving energy costs down even further. The elegant minimalist form factor of Arc blends into the ceiling structure and fits comfortably into all retail designs.

## UPGRADING TO ARC

For this example a wide-beam optic was used for very high uniformity across the store.



## BENEFITS

- Excellent uniformity and colour quality creates a natural, vibrant shopping experience
- Eliminates expensive lamp replacement programmes
- Elegant, minimalist design blends into the ceiling
- Option to incorporate daylight harvesting and dimming



## SMART CONTROLS FOR FASTER PAYBACK

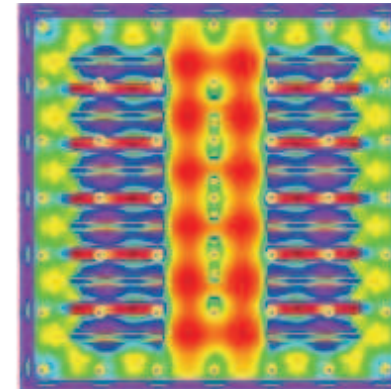
Smart dimming and daylight harvesting can significantly reduce energy consumption in large retail spaces which have periods of low occupancy.

Zones can be programme to ensure that the space always looks bright and welcoming to customers while minimising energy consumption.

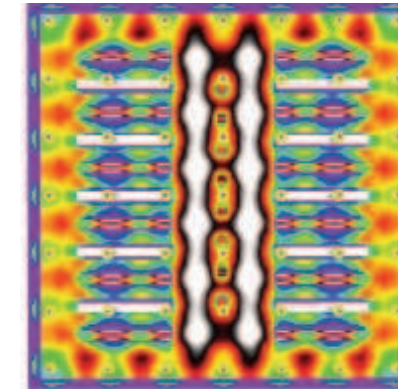
## COMPARISON

The illustrations below show a comparison between HIT metal halide lighting and Arc. A typical large retail layout was used and the fixtures were placed according to the calculations.

HIT (METAL HALIDE)



ARC LED



## REQUIREMENTS

EN 12464-1 sub 5.27.1  
On working level: 300 lux  
Uniformity  $U_0 < 0.4$

## SPECIFICATIONS

floor surface 40 x 40 x 8 m (1280 m<sup>2</sup>)  
fixtures used 49 (HIT G12) 49 (LED)  
mounting height 7 meters

## LIGHT SOURCE

Fixture power consumption (incl. ballast)  
Used fixtures

Overall lux level on workplane (0,8 m)  
Lifetime  
Power  
Luminous flux  
Luminous efficacy  
Overall power consumption per m<sup>2</sup>  
Uniformity  $U_0$

Annual electricity use  
Annual energy cost  
Energy cost PIR

## HIT metal halide

9,212 W  
49 x pendant  
150W HIT G12  
300 lx with  $U_0$  0,76  
6,000  
150W  
8,200lm  
55 lm/W  
5.76 W/m<sup>2</sup>  
0.76  
40,238 kWh  
€ 6036,-  
€ 6036,-

## Arc LED

5,952 W  
49 x Arc Pro wide beam  
120W  
340 lx with  $U_0$  0,74  
> 100,000  
120W  
9,000lm  
108 lm/W  
3.72 W/m<sup>2</sup>  
0.74  
25,998 kWh  
€ 3899,-  
€ 2112,-

## Benefit

**13% more lux**  
**16 x longer lifetime**  
  
2x efficiency  
  
**35% savings**  
**35% savings**  
**65% savings**



## ENERGY SAVINGS CAN BE EVEN HIGHER

There are many variables that determine actual energy savings: type of incumbent technology, condition of existing lighting and overlighting to compensate for lifetime light degradation will all have an impact. The range of energy savings shown on this application page are for guideline purposes only.

# THE VERSATILE LED HIGH BAY SOLUTION

Because spaces vary so widely in size, environment and application, the Arc series offers a choice of 3 optics (narrow, wide and batwing), 3 lengths and 2 light colours.



4.3 kg

Arc 375 x 425 x 130 mm / 4.3 kg



9.0 kg

Arc 375 x 665 x 130 mm / 9.0 kg

	STANDARD	PRO
IP44	IP65	
IK08	IK08	
Temp: -30C to +40C	Temp: -40C to +50C	
L70 >50k hrs	L70 >100k hrs	

	ARC	ARC PRO
Lumen Output	11,000lm	9,000lm
	16,000lm	13,000lm
Lm/W	100lm/W	112lm/W
	103lm/W	108lm/W
Installed Load	110W	80W
	155W	120W

	ARC PRO
Lumen Output	18,000lm
	27,000lm
Lm/W	109lm/W
	110lm/W
Installed Load	165W
	245W



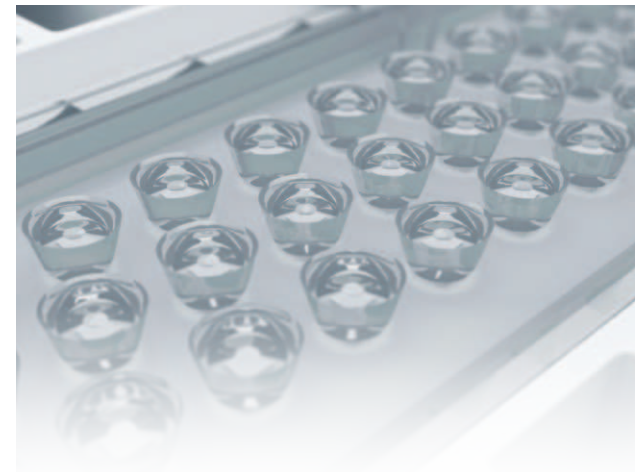
## OPTIONAL INTELLIGENCE

All Arc models are available with on-board intelligence including:

- Integrated PIR occupancy, daylight & temperature sensors
- DALI dimmability
- Remote control setting

## OPTICS

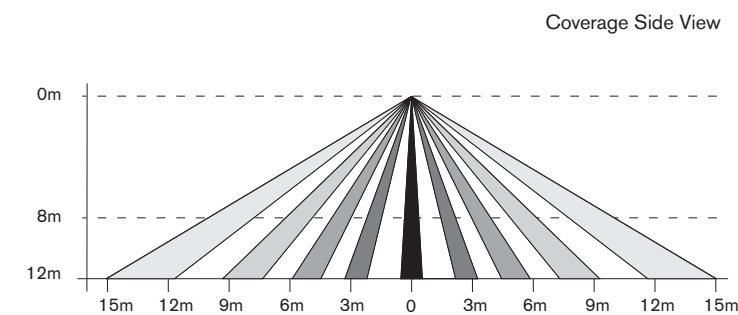
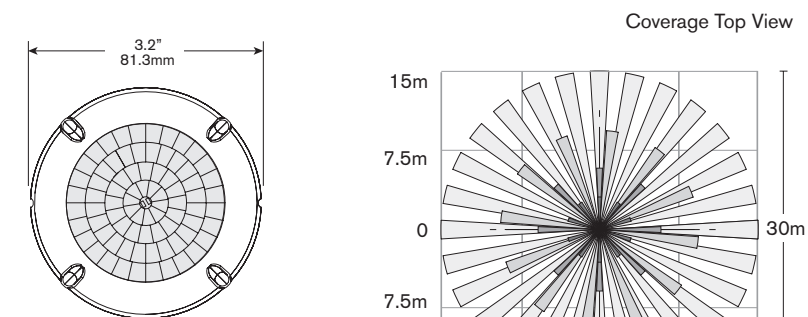
A choice of tailored optics ensures optimised performance for a range of applications.



AISLE BEAM 60° x 20°

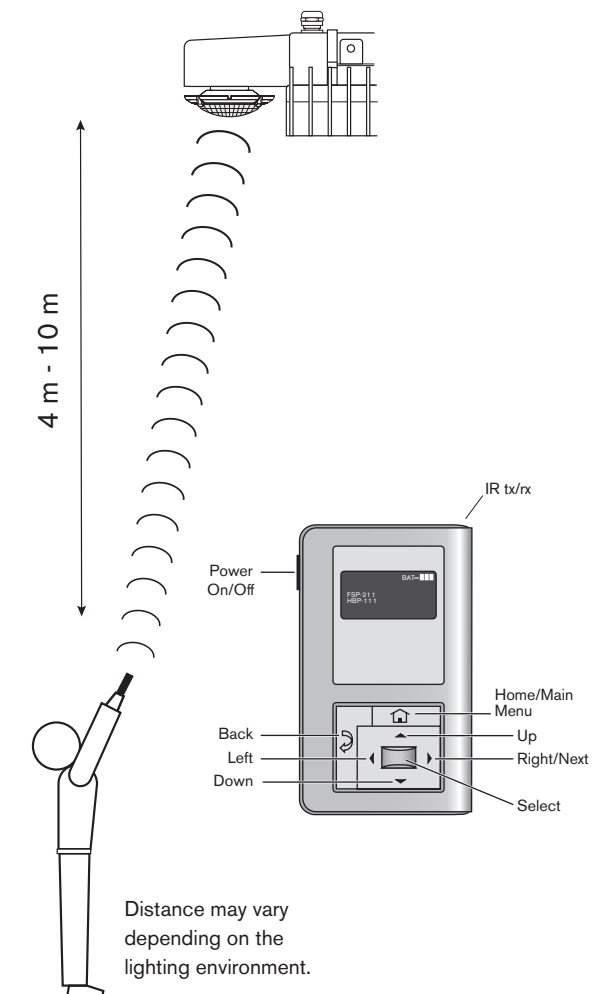
WIDE BEAM 60°

## OPTIMISED SENSORS, EASY PROGRAMMING



### FSP-L7: 360° Coverage

The FSP-L7 has a lens that covers a 30m diameter area at a height of 12m



Distance may vary depending on the lighting environment.

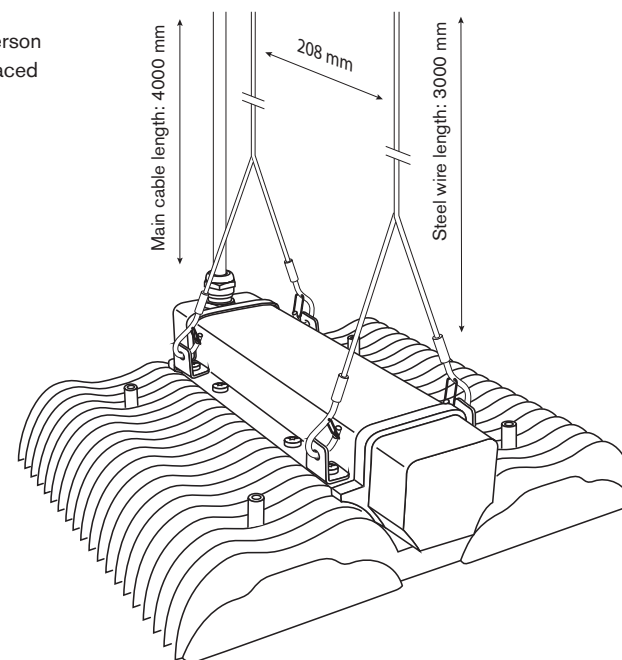
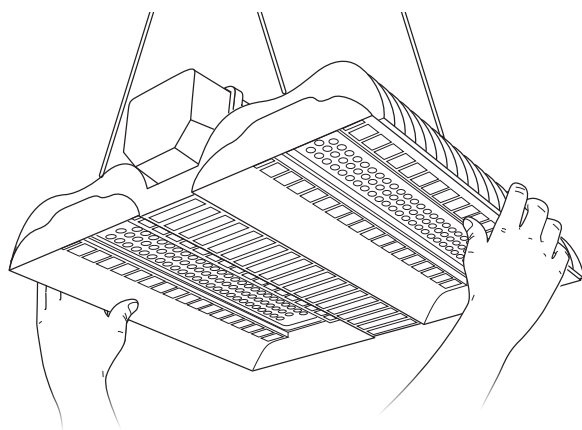




**TIME IS MONEY!**

## SINGLE PERSON **INSTALLATION**

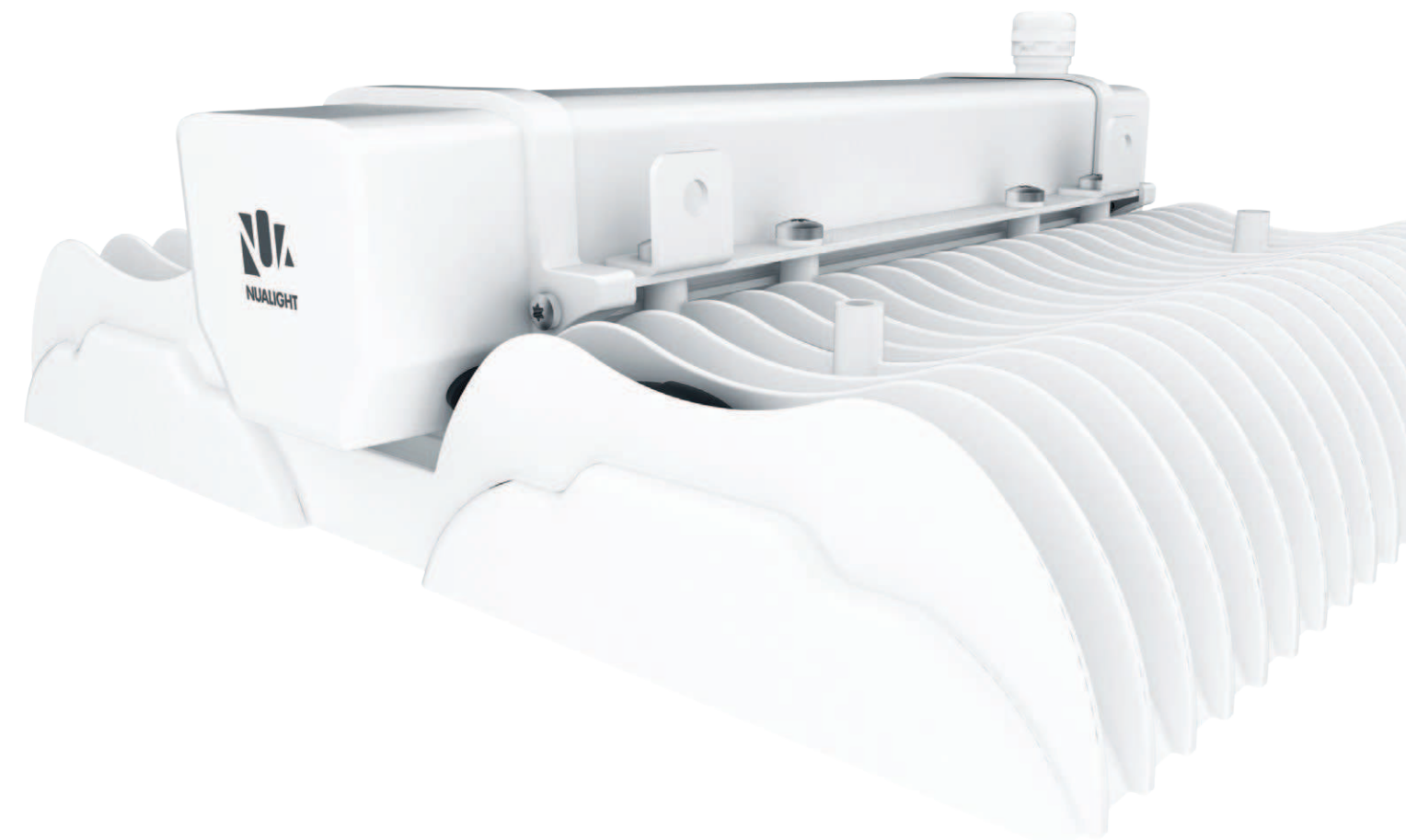
The very light-weight design of Arc makes it easy and safe for one person to install it. The low footprint also means that more fixtures can be placed on forklifts and installation equipment, speeding up the install time.



## **RAPID** INSTALLATION

Griple suspension kits:

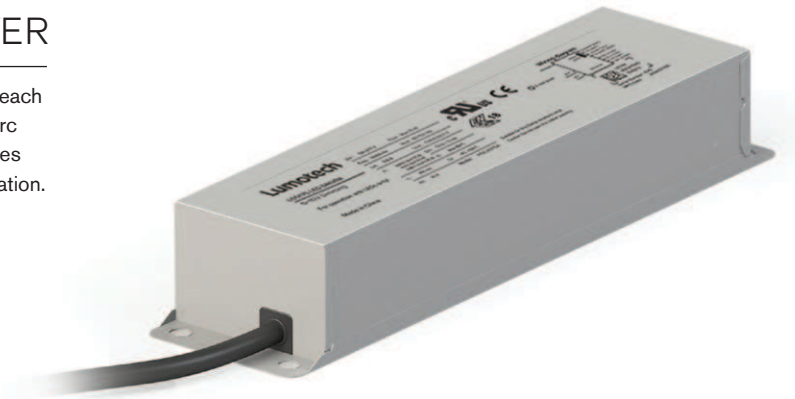
- Fast to install
- Versatile
- Simple to use
- Strong but lightweight
- Safe and aesthetically pleasing to the eye
- Max. pulling force 45kg



# RELIABILITY & PERFORMANCE

## BEST-IN-CLASS DALI DRIVER

The LED driver is vital to the overall performance of each LED fixture. The Lumotech LED driver inside each Arc is engineered and manufactured in Europe and comes with a 5 year warranty due to temperature self-regulation. It delivers exceptional standards of control and is acknowledged as the very best in its class.



## Lumotech

As the parent company of Lumotech, Nualight benefits from added expertise in drivers, bringing an extra dimension to its controls know-how. Lumotech has 35 years of experience in specialist LED controls, sensor technology and control gear.

## FIVE YEAR WARRANTY

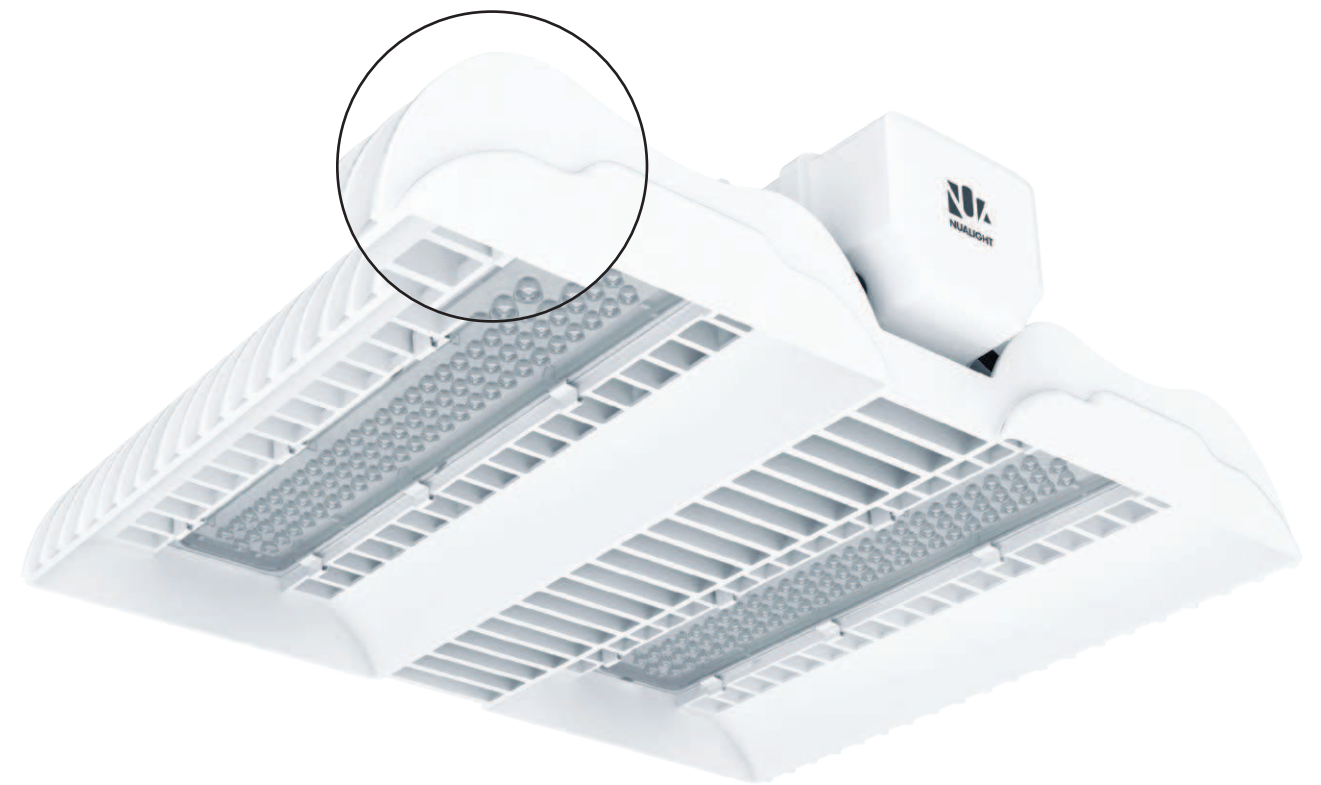
Each Arc is backed by a 5-year warranty on the entire fixture: the LEDs, the optics and the control gear. Arc only features components that are precisely measured and selected, so users know the fixture will deliver long-term reliable performance.



## EUROPEAN DESIGN AND MANUFACTURE

Nualight has R&D facilities and manufacturing in Europe. Our LED drivers and luminaires undergo stringent testing. Performance is measured throughout the lifetime of fixtures, with focus on efficiency, power, harmonics and inrush current.

Die-cast aluminium housing, protected by extremely durable white polyester powder-coating, with high resistance to moisture, oxidation and UV radiation.

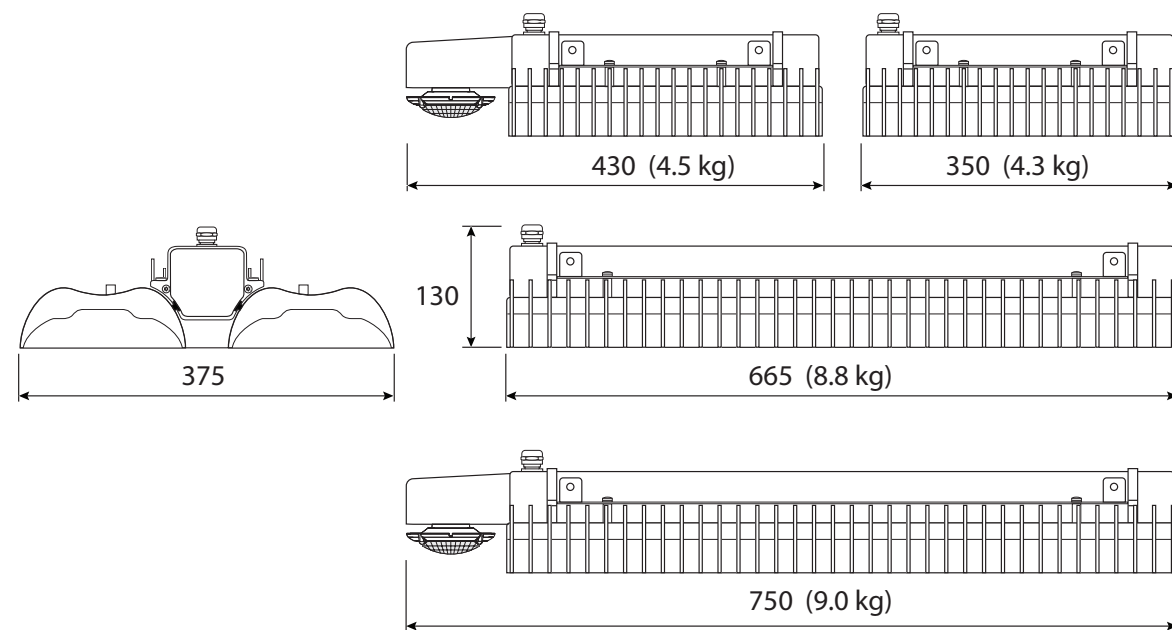




# SPECIFICATIONS

# ORDERING INFORMATION

	Arc°	Arc°Pro
<b>Power consumption:</b>	110 W / 155 W	80 W / 120 W / 165 W / 245 W
<b>Colour temperature:</b>	4000K	4000K
<b>Luminous flux (lm):</b>	12.000 lm / 16.000 lm	10.000 lm / 13.000 lm / 19.000 lm / 26.000 lm
<b>Luminous efficacy (lm/W):</b>	109 lm/W / 103 lm/W	125 lm/W / 108 lm/W / 115 lm/W / 106 lm/W
<b>Power factor:</b>	0.98	0.98
<b>LED lifetime:</b>	50,000 hrs L70	100,000 hrs L70
<b>CRI:</b>	79	79
<b>UGR:</b>	<22	<22
<b>Control:</b>	DALI dimmable	DALI dimmable
<b>Ambient temperature (Ta)*:</b>	-30°C to +40°C	-40°C to +50°C
<b>Beam angle:</b>	Wide beam 60° Aisle beam 60° x 20°	Wide beam 60° Aisle beam 60° x 20°
<b>Classifications:</b>	IP44	IP65
<b>Case dimensions (WxHxD):</b>	375 x 350 x 130 mm 375 x 430 x 170 mm (incl PIR)	375 x 350 x 130 mm 375 x 430 x 130 mm (incl PIR) 375 x 665 x 130 mm 375 x 750 x 130 mm (incl PIR)
<b>Weight:</b>	4.3 kg 4.5 kg (incl PIR)	4.3 kg / 8.8 kg 4.5 kg / 9.0 kg (incl PIR)
<b>Case material:</b>	Aluminium	Aluminium
<b>Case colours:</b>	White	White
<b>PIR version</b>		
<b>Coverage:</b>	360°	360°
<b>Cover area:</b>	30m ø	30m ø
<b>Daylight sensor</b>	Yes	Yes

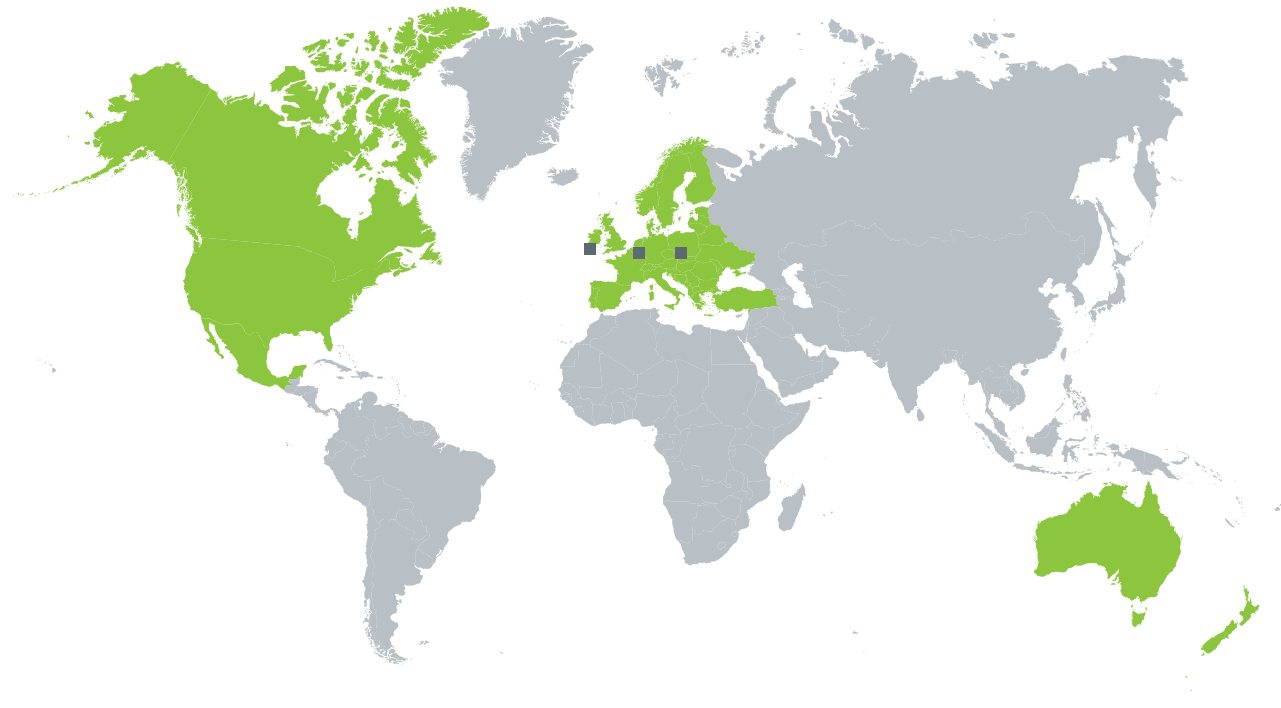


Product type	Power	CCT	IP	Temp.	Dimensions	Order No.
<b>Arc°</b>						
Arc, 110W, 12k lm, DALI, Wide Optic*	110	4000K	44	-30°C to +40°C	375 x 350 x 130 mm	N18673
Arc, 155W, 16k lm, DALI, Wide Optic*	155	4000K	44	-30°C to +40°C	375 x 350 x 130 mm	N18675
Arc, 110W, 12k lm, DALI, Aisle Optic*	110	4000K	44	-30°C to +40°C	375 x 350 x 130 mm	N18677
Arc, 155W, 16k lm, DALI, Aisle Optic*	155	4000K	44	-30°C to +40°C	375 x 350 x 130 mm	N18679
Arc, 110W, 12k lm, PIR, Wide Optic*	110	4000K	44	-30°C to +40°C	375 x 430 x 130 mm	N18672
Arc, 155W, 16k lm, PIR, Wide Optic*	155	4000K	44	-30°C to +40°C	375 x 430 x 130 mm	N18674
Arc, 110W, 12k lm, PIR, Aisle Optic*	110	4000K	44	-30°C to +40°C	375 x 430 x 130 mm	N18676
Arc, 155W, 16k lm, PIR, Aisle Optic*	155	4000K	44	-30°C to +40°C	375 x 430 x 130 mm	N18678

<b>Arc°Pro</b>						
Arc Pro, 80W, 10k lm, DALI, Wide Optic*	80	4000K	65	-40°C to +50°C	375 x 350 x 130 mm	N18634
Arc Pro, 120W, 13k lm, DALI, Wide Optic*	120	4000K	65	-40°C to +50°C	375 x 350 x 130 mm	N18642
Arc Pro, 80W, 10k lm, DALI, Aisle Optic*	80	4000K	65	-40°C to +50°C	375 x 350 x 130 mm	N18638
Arc Pro, 120W, 13k lm, DALI, Aisle Optic*	120	4000K	65	-40°C to +50°C	375 x 350 x 130 mm	N18646
Arc Pro, 80W, 10k lm, PIR, Wide Optic*	80	4000K	65	-40°C to +50°C	375 x 430 x 130 mm	N18632
Arc Pro, 120W, 13k lm, PIR, Wide Optic*	120	4000K	65	-40°C to +50°C	375 x 430 x 130 mm	N18640
Arc Pro, 80W, 10k lm, PIR, Aisle Optic*	80	4000K	65	-40°C to +50°C	375 x 430 x 130 mm	N18636
Arc Pro, 120W, 13k lm, PIR, Aisle Optic*	120	4000K	65	-40°C to +50°C	375 x 430 x 130 mm	N18644
Arc Pro, 165W, 19k lm, DALI, Wide Optic*	165	4000K	65	-40°C to +50°C	375 x 665 x 130 mm	N18650
Arc Pro, 245W, 26k lm, DALI, Wide Optic*	245	4000K	65	-40°C to +50°C	375 x 665 x 130 mm	N18658
Arc Pro, 165W, 19k lm, DALI, Aisle Optic*	165	4000K	65	-40°C to +50°C	375 x 665 x 130 mm	N18654
Arc Pro, 245W, 26k lm, DALI, Aisle Optic*	245	4000K	65	-40°C to +50°C	375 x 665 x 130 mm	N18662
Arc Pro 165W, 19k lm, PIR, Wide Optic*	165	4000K	65	-40°C to +50°C	375 x 750 x 130 mm	N18648
Arc Pro, 245W, 26k lm, PIR, Wide Optic*	245	4000K	65	-40°C to +50°C	375 x 750 x 130 mm	N18656
Arc Pro, 165W, 19k lm, PIR, Aisle Optic*	165	4000K	65	-40°C to +50°C	375 x 750 x 130 mm	N18652
Arc Pro, 245W, 26k lm, PIR, Aisle Optic*	245	4000K	65	-40°C to +50°C	375 x 750 x 130 mm	N18660

\* Gripple Suspension kit included with all versions.





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