

LED evolution



The Natural Selection In LED Lighting

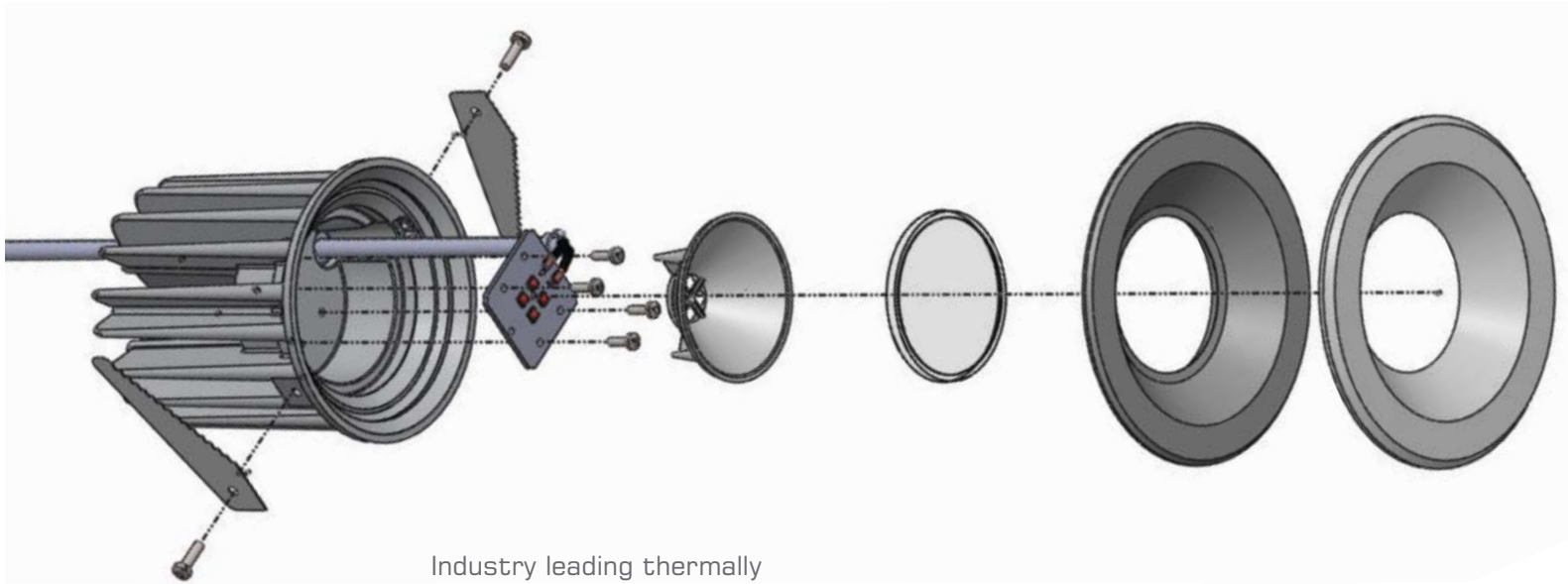


Where LED Lighting Technology & Engineering Excellence Come Together

LED Evolution is a UK based LED lighting design and manufacturing company that brings together decades of engineering expertise and manufacturing skill to produce true high performance LED lighting at surprisingly affordable prices.

Why compromise on poor performance or poor quality LED lighting? **Independently tested and verified by the British Standards Institute and by CREE**, LED Evolution's NT10 and NT20 can deliver optimum efficiency, performance and durability at a total cost of ownership that is unbeatable.

Engineering design

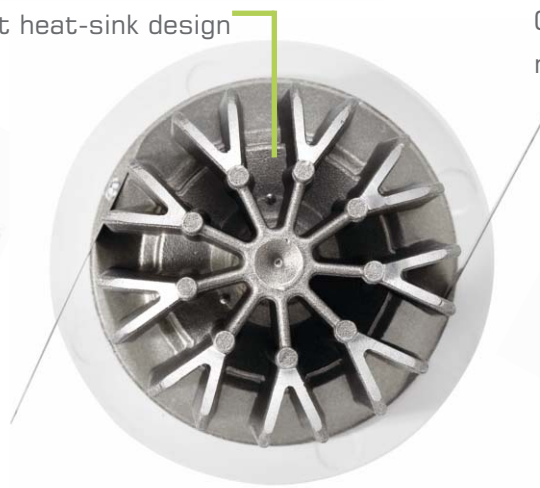


Industry leading thermally efficient heat-sink design

Collimating light mixing reflector



CREE surface mount LEDs



Recessed light source minimising off-axis glare



Independently tested & certified

The NT10 has been independently tested and certified by the BSI in accordance with the 2013 lumen/circuit watt requirements for UK Building Regulations Part L1 (Domestic) and Part L2 (Industrial) both A & B.

Both the NT10 and NT20 ranges have been independently tested by CREE in accordance with their Temp 24 criteria (Thermal, Electrical, Mechanical, Photometric, Optical).

Full test reports are available to download at www.led-evolution.com.

bsi. CREE    

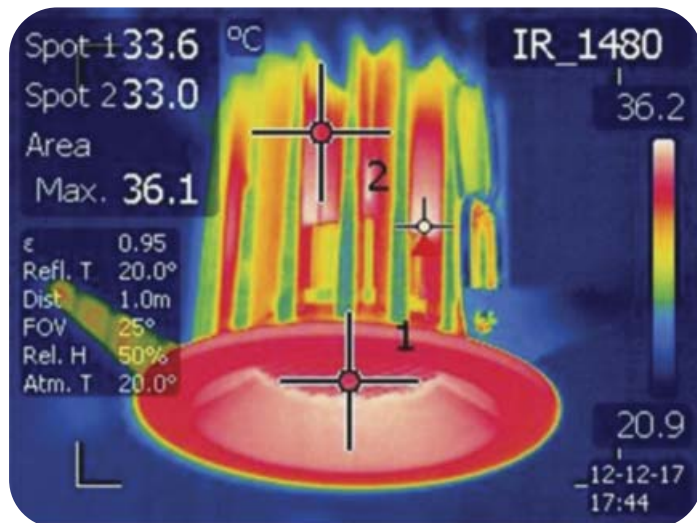


Thermal Efficiency & 100,000 hour Lifetime

NT10

The primary influencing factor prevailing negatively upon LED life and efficiency is high temperature. The NT10 has been designed to operate with an LED junction temperature of less than 60°C and a heat-sink temperature of just 38°C. As a consequence, in tests in accordance with LM-80, CREE have projected a lifetime in excess of 100,000 hours (L70) under normal conditions.

Up to 50% more light output



At 730 lm the NT10 offers up to 50% greater light output than many competitor products making it a true 50W halogen replacement.

That means the highest affordable energy savings with the fewest possible light fittings.

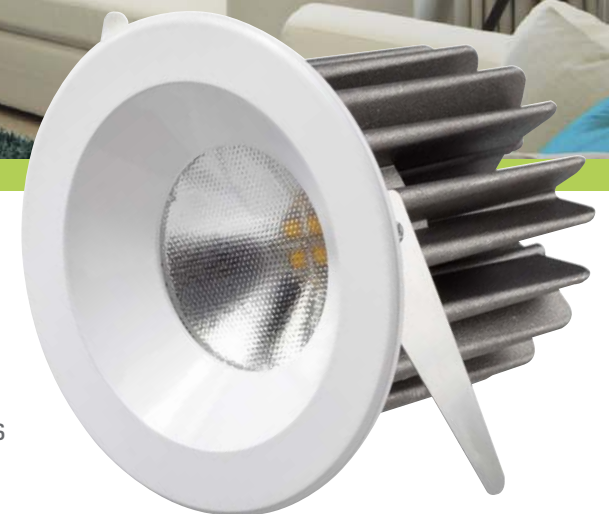
Using the NT10 it is possible to reduce the number of lights required in each location by as much as 25% adding further savings in reduced energy and installation cost.*

*accurate lux comparison calculation in line with CIBSE guidelines must be conducted in each application.



Features

- BSI Part L Certified (greater than 60lm/circuit watt)
- 100,000 hour life (L70)
- Outstanding thermal and optical efficiency
- Available in both fixed and swivel head versions
- Available in a variety of bezel colour and lens angle options
- Five Year Warranty available (subject to registration)
- Phase, 1-10V and DALI dimming options

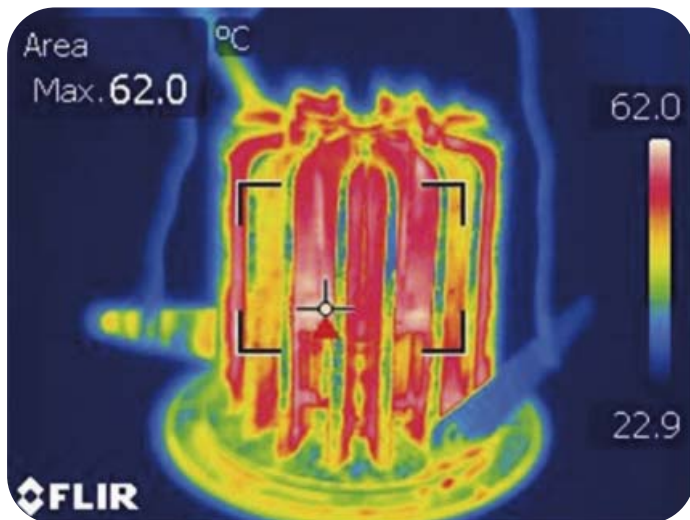


Thermal Efficiency & 70,000 hour Lifetime

NT20

The primary influencing factor prevailing negatively upon LED life and efficiency is high temperature. The NT20 has been designed to operate with an LED junction temperature of less than 65°C and a heat-sink temperature of just 62°C. As a consequence, in tests in accordance with LM-80 CREE have projected a lifetime in excess of 70,000 hours (L70) under normal conditions.

True compact fluorescent replacement



The NT20 is available with lumen output in excess of 1500 lm making it a real alternative to CFL in many applications.

Longer lifetime, full dimming control, reduced heat output and lower maintenance are just a few of the NT20 benefits.

With LED Evolution's custom adaptor, even retrofit is now possible.



Features

- BSI Part L Compliant (greater than 60lm/circuit watt)
- 70,000 hour life (L70)
- Outstanding thermal and optical efficiency
- Available in both fixed and swivel head versions
- Available in a variety of bezel colour and lens angle options
- Five Year Warranty available (subject to registration)
- Phase, 1-10V and DALI dimming options



The benefits of LED Evolution...

.....versus competitor LED products

Since its inception the LED lighting industry has been subjected to ambitious and unrealistic performance claims from some manufacturers. LED Evolution product specifications have been independently tested and verified by CREE in accordance with their Tempo 24 test criteria and the test reports are available to view on our web-site. So you can rest assured that LED Evolution products will perform exactly as stated.

...versus compact fluorescent lamps (CFL)

The NT20 offers considerable energy savings compared to CFL use and page 12 provides a guide as to what is potentially achievable. Additionally, unlike CFLs, the NT20 is fully dimmable throughout its range offering complete versatility and further opportunities to save energy during times of low usage requirement.

The typical lifetime of a CFL is 8,000-10,000 hours compared with 70,000 hours (L70) for the NT20 unit offering considerably reduced maintenance. Considering that CFLs are often sited in high ceiling applications, the savings in man hours and equipment hire can be considerable.

The high CRI (colour rendering index) and uniformity of light, ensured by LED Evolution's 2-step bin selection of LEDs, creates an environment that is both comfortable and aesthetically pleasing without the lighting colour variations sometimes seen in aging CFLs. The NT20 produces less heat than CFLs, contains no mercury and benefits from instant turn on.

...versus halogen lamps

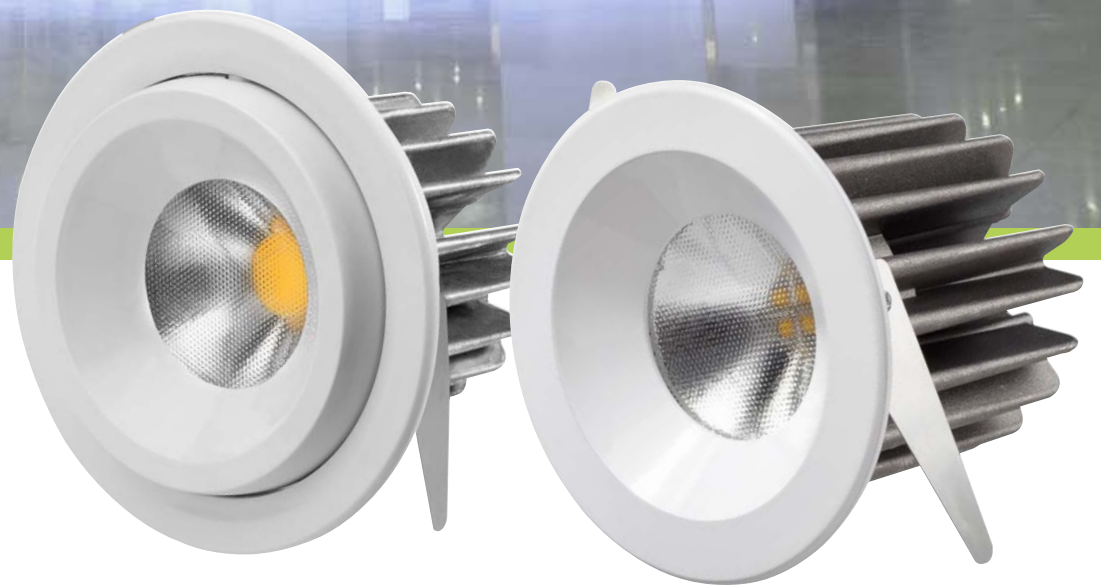
The NT10 offers substantial energy savings when compared to halogen bulb use and page 12 provides a guide as to what is potentially achievable. The savings don't just come from the reduced energy consumption. The typical lifetime of a halogen bulb is 5,000 hours compared with 100,000 hours (L70) for the NT10 unit offering considerably reduced maintenance and avoiding unsightly burnt out bulbs.

Even when compared to many competitor products, the NT10 offers up to 50% more light output making it a true 50W halogen replacement. That means the highest affordable energy savings with the fewest possible fittings. In fact, using the NT10 it is possible to reduce the number of lights by as much as 25% (accurate lux comparison required).

IP65 rated and available in fire rated and emergency light versions, the NT10 is the natural choice for halogen unit replacement.

LED Evolution's NT10 and NT20 luminaires are compatible with many Lutron Crestron and Mode lighting control systems. Contact us for full details.

LED Evolution's lighting application team offer a variety of architectural lighting solutions compatible with our products and custom designed to ensure that we can fulfil most customer application requirements. Contact our application team for further details.



Energy Saving Data

LED lighting technology can offer astonishing energy savings of over 80% in some cases. It is not difficult to run a mental calculation that replacing a 50W Halogen downlight with a 10W LED downlight with comparable light output will give you savings of that order.

However, not all 10W LED downlights consume 10W of power and it is important that manufacturer claims are checked carefully along with key criteria such as the efficiency of the driver (power supply), light output and running temperature of the light units, all of which can have a dramatic impact on performance and lifetime of the product.

A number of variables can significantly alter the performance of an LED light source thereby affecting energy efficiency. Performance factors such as lumen output, heat dissipation and driver efficiency can all contribute to higher than expected energy consumption and lower than expected light output.

Based on LED Evolution's independently verified data, estimates can be made of the energy and maintenance savings available along with installation payback periods.

Typical examples are shown in the tables here and you can visit our website at www.led-evolution.com to calculate savings estimates using your own installation data.

Energy Saving Examples

	Halogen Lamps & Fittings	CFL Light & Fittings
Number Lamps / Lights required	30	30
Power rating per lamp (watts)	50W	36W
Cost per lamp (£)	£2.99	£7.32
Cost per lamp fitting (£)	£8.99	£36.79
Cost per driver / power supply (£)	£5.99	-

LED Evolution Replacement Units

Power rating per lamp unit (watts)	9.2W	23.2W
Cost per lamp unit (£)	£48.78*	£67.13
Cost per driver / Power Supply (£)	£19.48*	£27.27

Usage Data

Usage - days per year	365 Days	365 Days
Usage - hours per day	10	24 (Retail)
Unit energy cost (£)	£0.15	£0.15



	Halogen	LED Evolution	CFL	LED Evolution
Total installation cost	£539.10	£2,047.80	£1,323	£2,832
Installation power usage	1,875W	325W	1,080W	733W
Total power consumed per year	6,844KWh	1,185KWh	9,46KWh1	8,760KWh
Total energy cost per year	£1,026.56	£177.78	£1,419.12	£962.68
Energy saving per year		£848.79**		£456.44**
		83% Saving		32% Saving
Payback period		21 Months		40 Months

*Based on list pricing

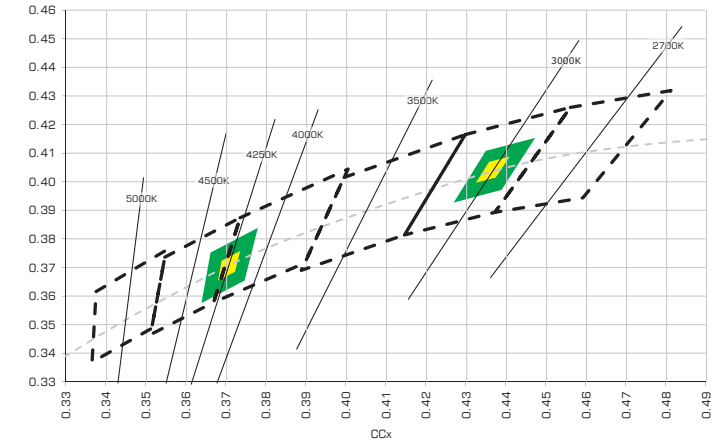
**Halogen / CFL lamp replacement and maintenance costs not included



Technical Specification NT10

Power:	9.6W		
Lumen Output (lm):	3000K:- 40° - 620	60° - 612	EL - 607
	4250K:- 40° - 729	60° - 718	EL - 705
Lumen Circuit Watt (lm/w):	3000K:- 40° - 60.3	60° - 60.6	EL - 60.4
	4250K:- 40° - 69.6	60° - 70.4	EL - 70.6
CRI:	70CRI, 80CRI and 90CRI versions available		
Life (L70):	100,000 hours (see LM-80 test data)		
Beam Angle Options:	17°, 26°, 38°, 54°, 40°, 60° & 5 x 2 Elliptical		
Warranty:	5 Years (subject to product registration)		
Fire Rating:	1.5 Hours fire rated version available soon		
Environmental Rating:	IP65		
Bezel Options:	White, Chrome, Nickel & Brushed Steel (other colours on request)		
Power Supply Options:	Phase, 1-10V and DALI dimming options		

LED Specification

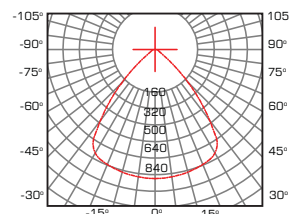
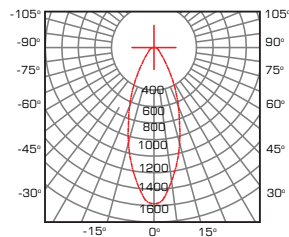
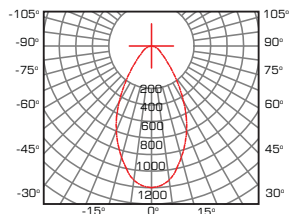
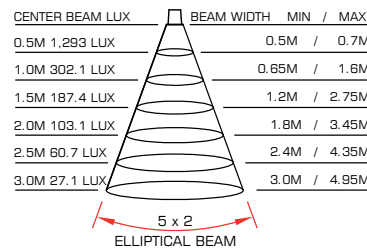
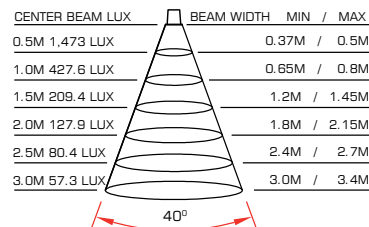
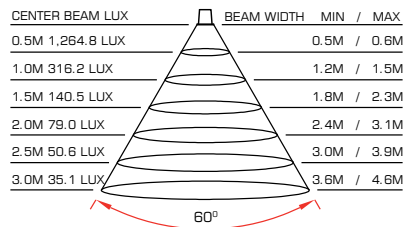


LED Evolution follows the ANSI recommendation that lamp manufacturers select LEDs from within a 4 step ellipse of any correlated colour temperature (CCT) target point.

LEDs are selected within 4 bins of the target CCT point on the chart (above) in standard manufacturing. A special manufacturing option selected from 4 sub-bins (representing a 2 step ellipse variation) is also available.

All LEDs used in manufacturing are logged against the product serial numbers for traceability.

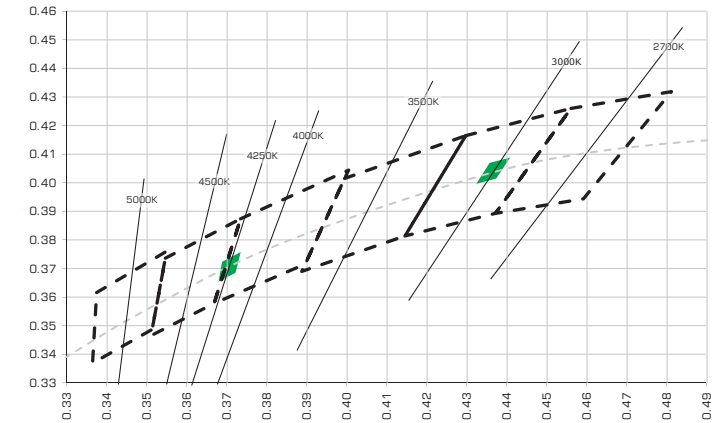
Photometric Data NT10



Technical Specification NT20

Power:	23.4W		
Lumen Output (lm):	3000K:- 40° - 1302	60° - 1285	} 5,000K and 6,000K are also available upon request
	4250K:- 40° - 1535	60° - 1508	
Lumen Circuit Watt (lm/w):	3000K:- 40° - 55.5	60° - 54.7	
	4250K:- 40° - 69.2	60° - 65.3	
CRI:	80CRI and 90CRI versions available		
Life (L70):	70,000 hours (see LM-80 test data)		
Beam Angle Options:	17°, 26°, 38°, 54°, 40°, 60° & 5 x 2 Elliptical		
Warranty:	5 Years (subject to product registration)		
Fire Rating:	1.5 Hours fire rated version available (swivel version n/a)		
Environmental Rating:	IP65		
Bezel Options:	White, Chrome, Nickel & Brushed Steel (other colours on request)		
Power Supply Options:	Phase, 1-10V and DALI dimming options		

LED Specification

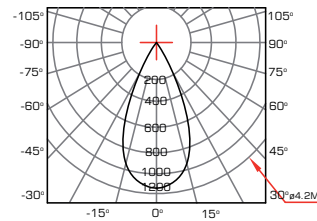
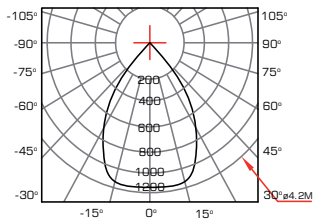
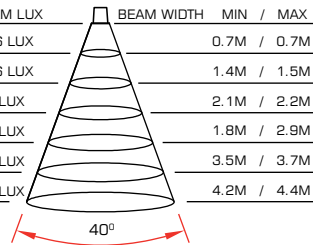
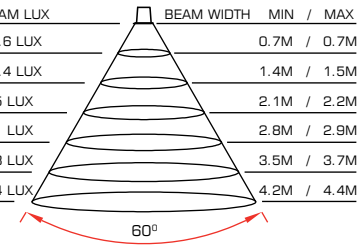


LEDs are selected from within a 2 step ellipse (i.e. 4 sub-bins) of the target CCT point on the chart (above) in standard manufacturing.

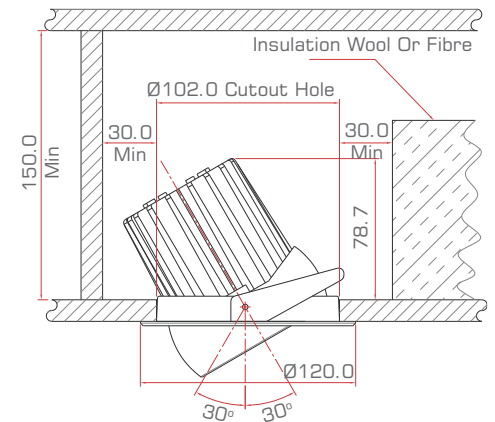
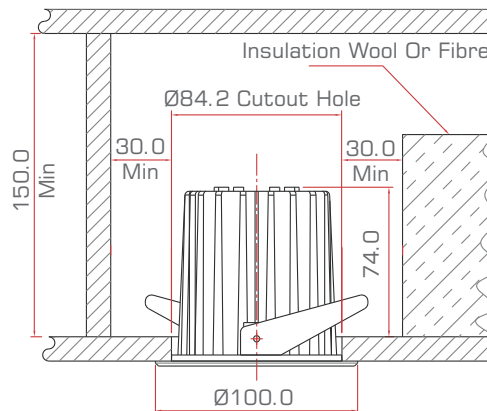
Photometric Data NT20

CENTER BEAM LUX	BEAM WIDTH	MIN	MAX
0.5M 4657.6 LUX		0.7M	0.7M
1.0M 1164.4 LUX		1.4M	1.5M
1.5M 517.5 LUX		2.1M	2.2M
2.0M 291.1 LUX		2.8M	2.9M
2.5M 186.3 LUX		3.5M	3.7M
3.0M 129.4 LUX		4.2M	4.4M

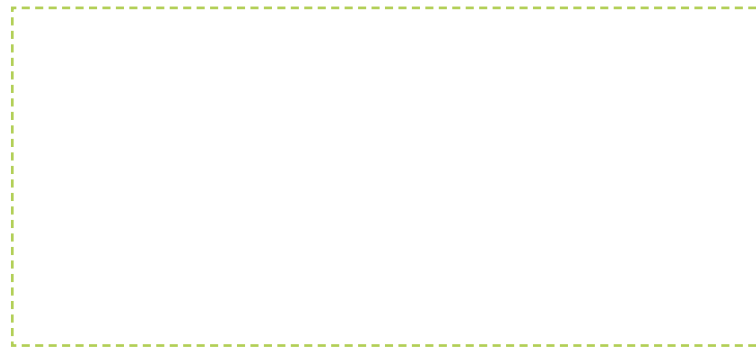
CENTER BEAM LUX	BEAM WIDTH	MIN	MAX
0.5M 4657.6 LUX		0.7M	0.7M
1.0M 1416.6 LUX		1.4M	1.5M
1.5M 834.4 LUX		2.1M	2.2M
2.0M 447.9 LUX		1.8M	2.9M
2.5M 257.4 LUX		3.5M	3.7M
3.0M 167.3 LUX		4.2M	4.4M



Dimensions NT10 & NT20 Dimensions Tilt & Swivel



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