

External Lighting Plan for Planning Application

The Lodge, Arborfield Court, Swallowfield Rd, Arborfield, RG2 9JS

Planning Application: 250232

Lighting assessment for the external lighting of The Lodge.

The external lighting design for The Lodge has been made with consideration for the surrounding area and wildlife, at the same time as balancing the need to be able to see whilst accessing the property.

Due to the properties location there is no light from street lighting or other properties. On dark nights there is practically no visibility, if only relying on ambient light.

Some external lighting is therefore needed to provide safe access to and from the property.

Proposal

No external lighting is proposed to the Southeast of the property as there is no access in/out of the property on this side.

On the Northeast and Northwest of the property there is only a need for minimal lighting for access in the immediate vicinity of the building. It is proposed to achieve this with narrow beam downlights mounted within the soffits; these will create a focused corridor of light against the building.

To the Southwest of the property is the main vehicle and pedestrian access to the building. This requires a larger coverage of light to ensure visibility for all access. On this side of the property the downlights will be supplemented with standard shrouded wall lights with low wattage bulbs. This will create a low intensity pool of light out from the property, though still restricting direct upward light.

Environmental impact mitigation

To reduce the impact of the lighting on wildlife and the wider environment all light fittings are selected to ensure the light is shone down, with minimal upward spill. All lights used are as low power as possible and have a colour temperature of 2700K. This keeps the light as 'warm' and natural as possible.

As well as there being no lighting to the Southeast of the property, the lights on the Northeast and Northwest of the property will be controlled by Passive IR motion sensors with a 1-minute timer and time switches to reduce the time they are on to only when the area is being used.

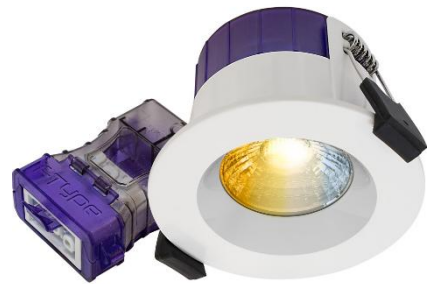
On the Southwest of the property all lights will be controlled on an automatic schedule and except for the porch lights will also have Passive IR motion sensors with a 1-minute timer.

All lights are turned off overnight once all residents are home.

Lighting Fixtures

Downlights:

- Luceco F-type Ultra – 4W, 2700K, 60deg, 465lm
- Regressed fitting to reduce glare
- Power adjustable **4W** / 6W
- Colour temperature adjustable **2700K** – 6000K
- Datasheet and photometrics at end of report



Wall Lights:

- Downlight fitting with no upwards light
- Recessed lamp reducing glare
- Light bulb used
 - Radium LED Star PAR16
 - 6.5W, 3000K, 575lm
 - Datasheet and photometrics at end of report



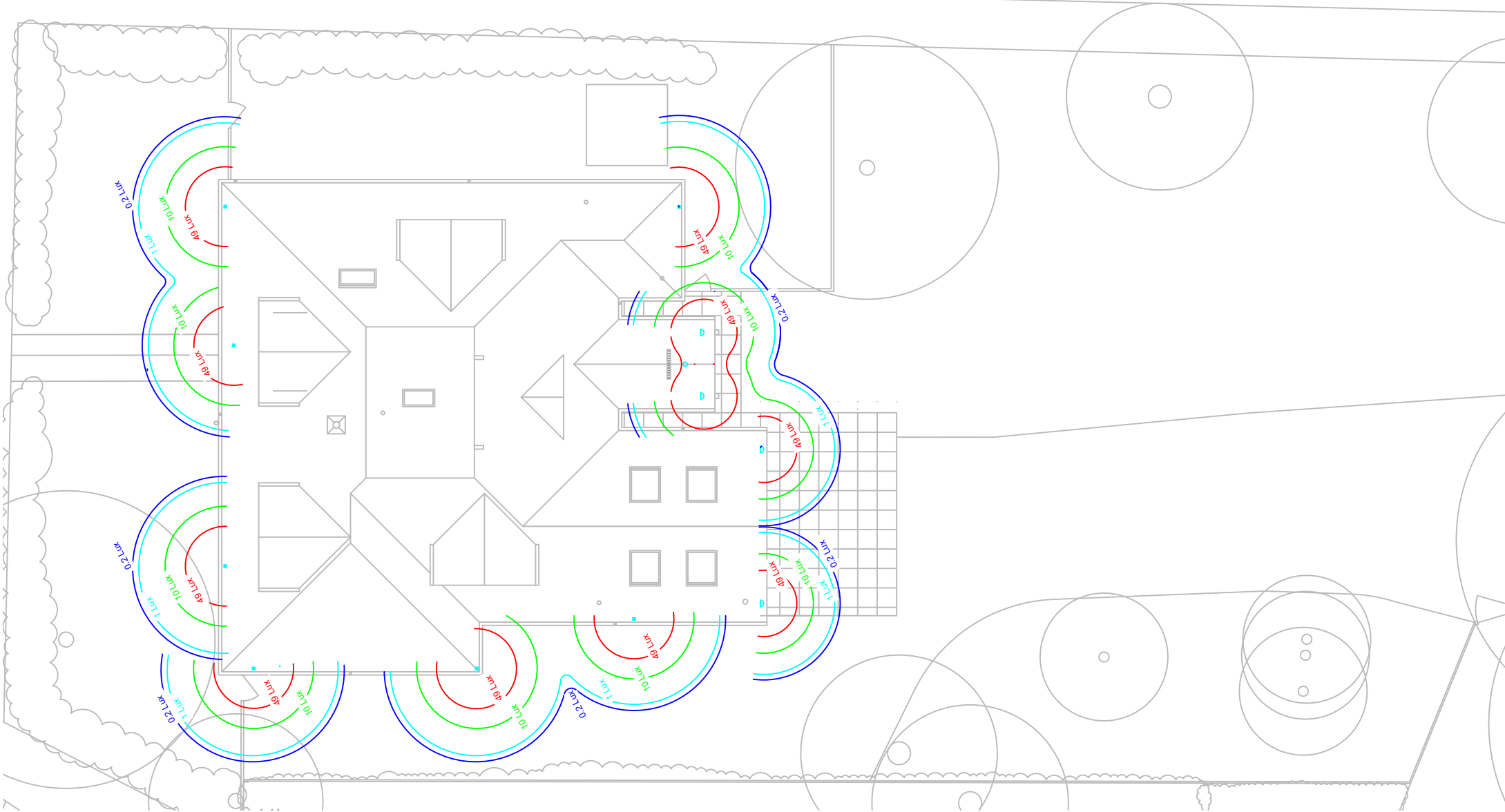
Ceiling Lamp:

- Hanging lantern within the porch
- Any upwards light is contained within the porch structure
- Light bulb used:
 - Philips Master Glass LED bulb
 - 5.9W, 2200-2700K, 806lm
 - Datasheet and photometrics at end of report

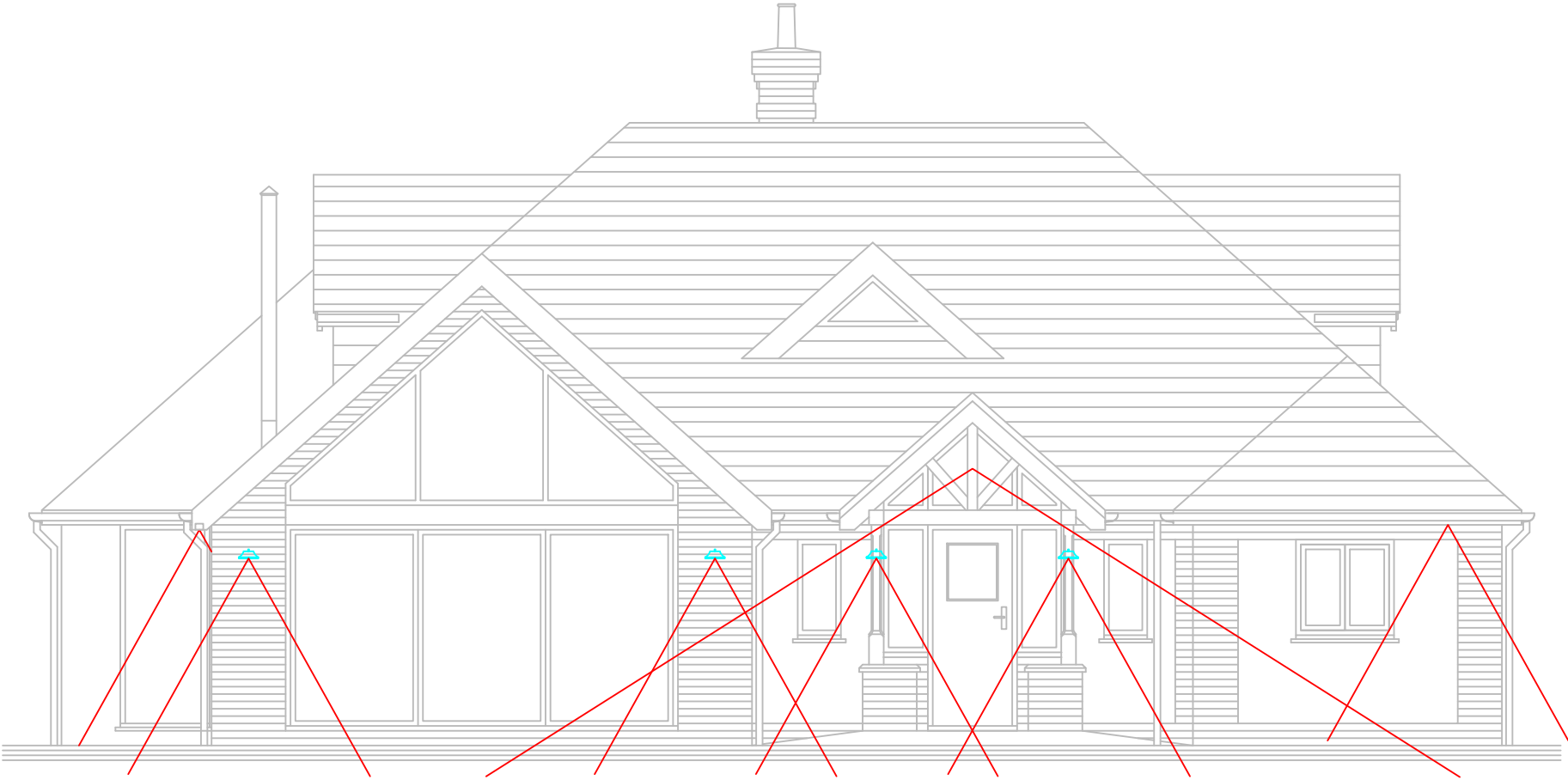


	49 Lux
	10 Lux
	1 Lux
	0.2 Lux

			
Type	Soffit Downlight	Wall lamp	Ceiling lamp
Lamp	Luceco Ftype Ultra	Radium LED Star PAR16	Philips Master Glass LED
Product code	UTR6WCCT	RL-PAR16 80 DIM 930/60°	MAS LEDBulbDT5.9
Lamp Flux (lm)	465	575	806
Colour Temp. (K)	2700	3000	2700



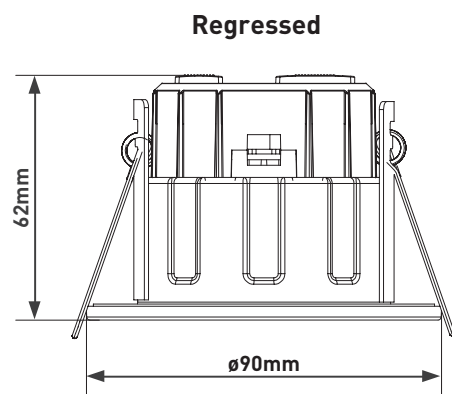
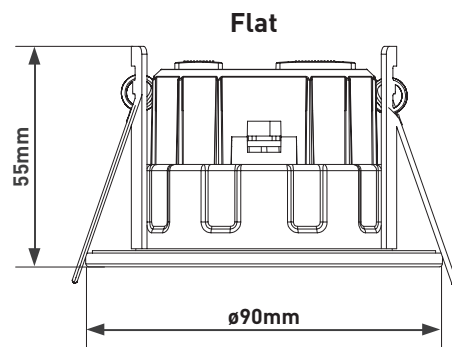
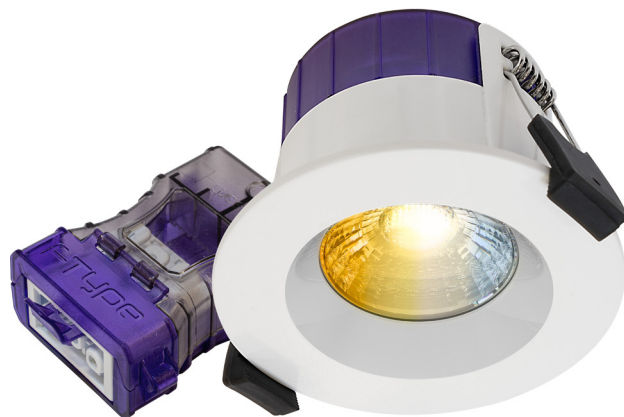
Useful Light (Beam Angle)



FTYPE ULTRA POWER CHANGE 4W/6W & 4COLOUR CCT FIRE RATED DOWNLIGHT & CONNECTOR

Product Features

- Power Selectable 6W/4W & Colour Selectable 2700K/3000K/4000K/6000K.
- Choose the preferred colour temperature to suit your space. For example choose a warmer white (2700K/3000K) to create a more relaxed comfortable feel. Choose a cooler white (4000K/6000K) for rooms which are more task focused.
- Patent pending toolless Easy Access ClipFit connector with true 1st/2nd Fix installation. QuickView Cable Window - check wire connections after locking lid shut. UK Patent Pending No. 2305019.8.
- Removable VDE certified push-fit terminal block improves wire access – ideal with stiff cable. 18th edition 500V insulation resistance testing compatible.
- Supplied with removable Matt White slim bezel -ideal for when decorating and painting ceilings.
- Available in Flat & Regressed in Polished Chrome, Brushed Steel & Matt Black bezel finish.



CAT NO.	WATTAGE	COLOUR CHANGE TEMPERATURE	LUMINAIRE LUMEN	USEFUL LUMENS
	4W	2700K	465 / 710lm (2700K)	372 lm (2700K)

UTR6WCCT

CAT NO.	BEZEL TYPE	LUMINAIRE LUMENS PER WATT	CRI	BEAM ANGLE	FREQUENCY (V/Hz)	CURRENT	POWER FACTOR	AMBIENT TEMP RATED LIFE (°C)
UTR6WCCT	Regressed	116 lm/W (2700K)	>80	60°	220-240 / 50-60	22mA / 30mA	>0.9	25°C

Test report

Light measurement results

Print date 4/21/2025

Measurement Conditions

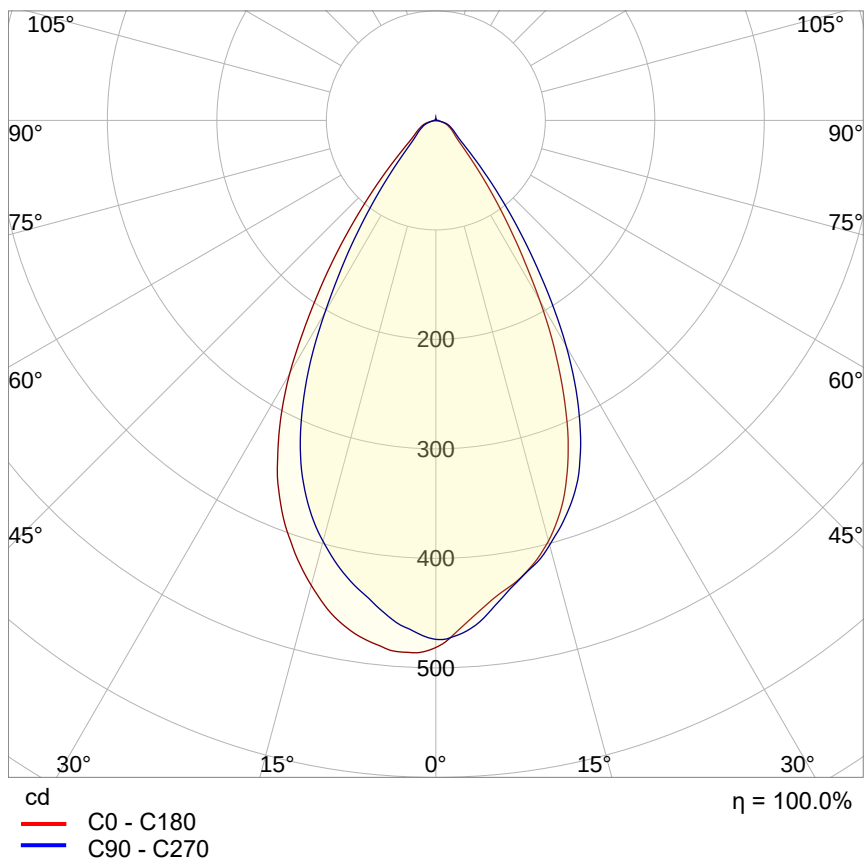
Tested c-planes	9 – distance {C_PLANES_RES}°
Tested gamma angles	181 – {H_PLANES_RES}°
Input Power	4.0 W

Tested Light Source	FType Ultra 4W 465LM 2700K
Basic Luminous Shape	SPOT
Item No.	
Manufacturer	Luceco

Main Light Measurement Results

Output – Total Lumen (Up% / Down%)	465 lm – 0.26% / 99.74%
Efficiency	116 lm/W
Peak Intensity	486 cd
Correlated Color Temperature, CCT	2700 K
Color Rendering Index	CRI 0.0

Polar light distribution diagram

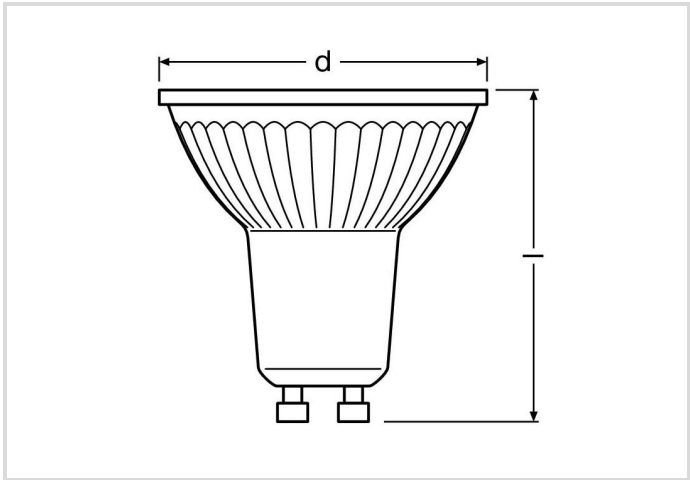


LED Star PAR16

RL-PAR16 80 DIM 930/60°/GU10

Radium

Product Datasheet Date: 28.10.2025



F

3000K

25 000h

General Data

Article No.	44020758
Code	RL-PAR16 80 DIM 930/60°/GU10
Product EAN	4008597207587
Box quantitiy (pcs.)	10
EAN Box	4008597407581
Gross weight of box in kg	0.58
Length of box in m	0.273
Width of box in m	0.113
Height of box in m	0.07
Product weight	38 g
Product status	Active

Electric Parameters

Wattage	6.5 W
Weighted energy consumption in 1000 hours	7 kWh
Lamp power	6.5 W
Power factor	≥ 0.5
Nominal voltage	220-240 V

Electric Parameters

Voltage type	AC
Nominal current	59 mA
Nominal current (mA)	59 mA
Inrush current	2,9 A
max. no. of lamps at 10A automatic fuse	72
max. no. of lamps at 16A automatic fuse	114

Light Application Parameters

Luminous flux	575 lm
Rated luminous flux according to IEC 62612	575 lm
Luminous intensity	700 cd
Beam angle	60 °
Efficacy	88 lm/W
Total mains efficacy	104 lm/W
Color temperature	3000 K
Color coordinate X	0,434
Color coordinate Y	0,403
Color rendering index	≥ 90
Color rendering index nominal	90
Color Stability	≤ 5 sdc _m

Service Life

Average life	25000 h
Mean service life	25000 h
No. switching cycles	[100000]
Guarantee	5 years

Specification

Energylabel (G -> A)	F
Diameter	50 mm
Length	54 mm
Length	54 mm
Burning position	any
Mercury content	0.0 mg
Material	Glass
Photobiological safety according to EN 62471	RG1

LED Star PAR16

RL-PAR16 80 DIM 930/60°/GU10

Radium

Specification

Lamp shape	Reflector
Base	GU10
Colour	White

Notes on Operation

Degree of protection (IP)	IP20
Burning position	any
Mode of operation	230 V
Ambient temperatures	-20 ... +40 °C

Information especially for EPREL

Lighting technology	LED
Mains/Non mains connectable	MLS
Directional or non-directional light	DLS
Color tunable light source	No
Type of color temperature	SINGLE_VALUE
Color stability MacAdams EPREL	5
Displacement factor EPREL	0.50
Life factor EPREL	0,9
Flicker	1.0
Stroboscopic effect	0.4
EPREL ID number	1946146

Miscellaneous

Similar products	43919837, 43820119, 44020761, 44020759, 43920776, 44122574
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Notes

PAR16-LED for exchange with halogen lamps, neutral white light, glass bulb, dimmable, base GU10. LED light does not contain UV or IR radiation.

Please, refer to www.radium.de/recycling for notes on disposal of burned-out lamps as well as lamp breakage.

The "lifespan L70" described for LED lamps indicates the number of hours when the luminous flux has decreased to 70% of its initial value.

The optimal field 'info about service life' contains the frame conditions according to standards based on which the specific service life has been determined. So, for example, "12B50, 50Hz" means that the mean service life (B50) has been determined with a 12h switching cycle at mains (frequency 50Hz), "3B50, HF" is based on a 3h switching cycle at electronic control gear (high frequency).

Base

GU10

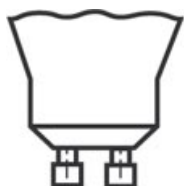
IEC/EN 60061-1

sheet 7004-121-1

LED Star PAR16

RL-PAR16 80 DIM 930/60°/GU10

Radium



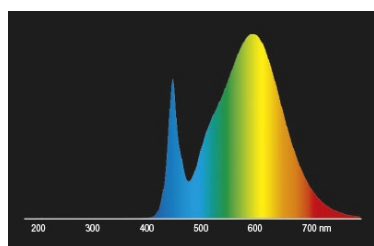
Spectrum

As daylight is a mixture of direct sunlight and light from the sky, the spectral distribution changes all the time due to the time of the day and the weather. The standard illuminant D65 corresponds to daylight with colour temperature of about 6500K.

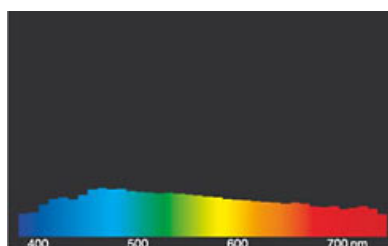
The colour of coloured LEDs depends on the chemical elements within the light generating chip. The coloured light is generated directly and does not need filtering.

White LEDs are either RGB (red + green + blue chip in one LED = light colour white) or blue LED-chips with yellow/orange phosphor in the resin.

Visible region from 380 to 780 nm; height of graph corresponding with relative spectral emission (400mW/klm)per 10nm.



LED Retrofit retrofit lamps 3000K



daylight(D 65)

Special features



General notes

For LED replacement of halogen and incandescent lamps, we recommend direct replacement (1: 1) at the respective burning position. For new systems, the number of lamps in the circuit operated at control gear such as transformers or dimmers can be obtained from corresponding compatibility lists (if available). If there is no specification for the type of device or lamp required, for safety reasons, the replacement power shall be assumed as taht of the original halogen type (eg "RL-MR16 35" -> 35W, independent of the real power consumption).

The technical design data in accordance with DIN and IEC. The producer does not take any responsibility for damage to persons or property in case of unsuitable operation or handling of the product. Operating data and dimensions are valid within the usual tolerances. Related lamp types (different bases, mains voltages) may be available on request. Sale and delivery are effected in accordance with the Radium Terms of Delivery and Payment valid on the day of conclusion of contract. Packing units offer economical advantages to the purchase and logistic department. Please match your quantity volume accordingly. For orders of a minimum quantity (clefts) with a lamp model the amount lower than the volume of each packaging unit, we will invoice 10 % additional charge per lamp type. Technical changes and terms of delivery are reserved. Manipulation of any kind to packaging or product is not permissible as this will violate Radium brand rights. Furthermore, technical properties of the product can change to its disadvantage or even destruction. Therefore, Radium cannot be responsible for consequential damages.

® = Registered trademark

Subject to change without notice. Errors and omissions excepted.

Safety instructions

To ensure full light efficiency and product life, the permissible temperature ranges must be observed and dry environment ensured. When operated with existing control gear, their compatibility with the lamp must be checked.

All technical data without guarantee.

Test report

Light measurement results

Print date 10/28/2025

Laboratory and Equipment

Test lab

n/a - serial: n/a sensor serial: n/a

Measurement date

10/28/2025

Measurement Conditions

Tested c-planes

9 – distance {C_PLANES_RES}°

Tested gamma angles

361 – {H_PLANES_RES}°

Input Power

NaN W

Tested Light Source

RL-PAR16 60Degree

Basic Luminous Shape

PANEL

Item No.

Manufacturer

Radium Lampenwerk GmbH

Main Light Measurement Results

Output – Total Lumen (Up% / Down%)

287 lm – 4.243% / 95.76%

Efficiency

NaN lm/W

Peak Intensity

313.7 cd

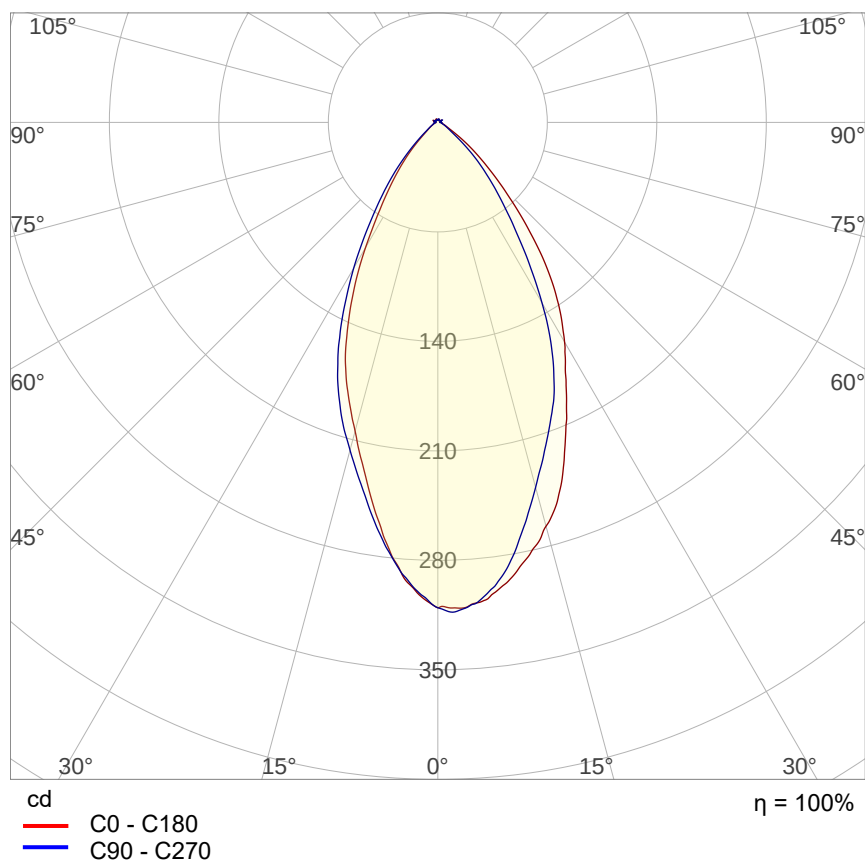
Correlated Color Temperature, CCT

2700 K

Color Rendering Index

CRI 0

Polar light distribution diagram





MASTER Glass LED bulbs

MAS LEDBulbDT5.9-60W E27 CRI95A60CL G UK

Featuring a classic heritage design, these filament MASTER glass bulbs combine the familiar shapes of incandescent glass LED bulbs with the benefits of long-lasting LED technology. Ideal for creating a cosy atmosphere for customers, these glass LED bulbs provide excellent quality of light. MASTER glass bulbs can be dimmed for different lumen levels and colour temperatures (dimmable glass led bulbs). They also deliver significant energy savings, using 30% less energy compared to normal LED bulbs. By offering a lifetime of 25,000 hours, these dimmable glass LED bulbs also reduce maintenance costs.

Product data

General Information	
Cap base	E27
Nominal lifetime	25,000 h
Switching Cycle	20,000
Lighting Technology	LED
Flux measurement reference	Sphere
Light Technical	
Colour Code	922-927 [CCT of 2200K-2700K]
Beam angle (nom.)	300 degree(s)
Luminous Flux	806 lm
Colour designation	Warm Glow (WG)
Correlated Colour Temperature (Nom)	2200 2700 K
Luminous efficacy (rated) (nom.)	136 lm/W
Colour consistency	<6
Colour rendering index (CRI)	95
LLMF at end of nominal lifetime (nom.)	70 %

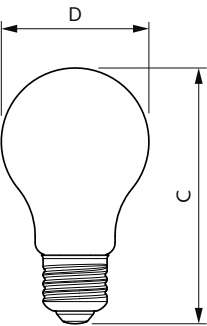
Photobiological safety according to EN 62471 RG1	
Operating and Electrical	
Input frequency	50 to 60 Hz
Power Consumption	5.9 W
Lamp current (nom.)	40 mA
Wattage equivalent	60 W
Starting time (nom.)	0.5 s
Warm-up time to 60% light	0.5 s
Power Factor (Fraction)	0.6
Voltage (nom.)	220-240 V
Temperature	
T-Case maximum (nom.)	70 °C

MASTER Glass LED bulbs

Controls and Dimming	
Dimmable	Only with specific dimmers
Mechanical and Housing	
Lamp Finish	Clear
Bulb material	Glass
Bulb shape	A60
Net Weight (Piece)	0.032 kg
Approval and Application	
Energy Efficiency Class	D
Energy consumption kWh/1,000 hours	6 kWh
EPREL Registration Number	1969959
EU RoHS compliant	Yes
EyeComfort	Yes
Flickering value (PstLM)	0.9
Stroboscopic effect	0.4
Ambient temperature range	-20 to +45 °C

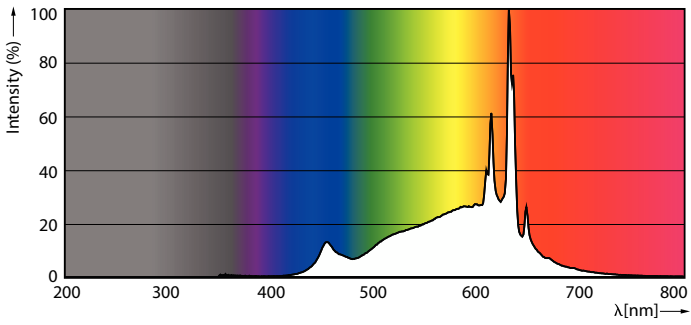
Application Conditions	
Can it be used in closed luminaires	No
Product Data	
Order product name	MAS LEDBulbDT5.9-60W E27 CRI95A60CL G UK
Full product name	MAS LEDBulbDT5.9-60W E27 CRI95A60CL G UK
Full EOC	872016931095700
Order code	31095700
Material no. (12 NC)	929003798602
Numerator – quantity per pack	1
EAN/UPC – Product/Case	8720169310957
Numerator – packs per outer box	10
EAN/UPC - Case	8720169310964

Dimensional drawing

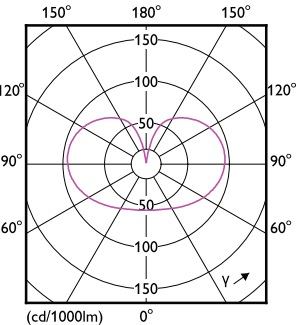


Product	D	C
MAS LEDBulbDT5.9-60W E27 CRI95A60CL G UK	60 mm	108 mm

Photometric data



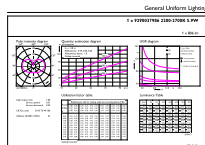
Spectral Power Distribution Colour - MAS LEDBulbDT5.9-60W E27 CRI95A60CL G UK



Light Distribution Diagram - MAS LEDBulbDT5.9-60W E27 CRI95A60CL G UK

MASTER Glass LED bulbs

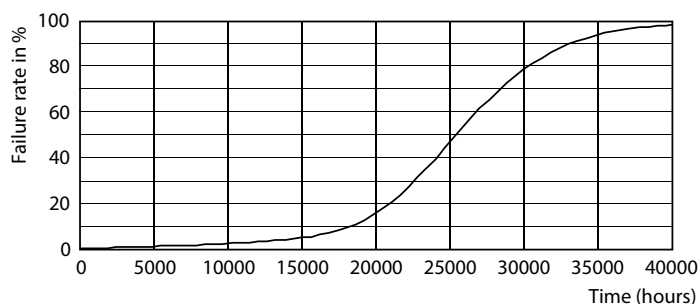
Photometric data



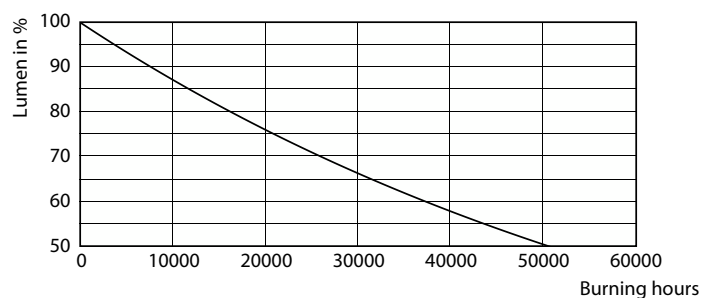
Parameter	Estimate	Standard Error	z	P
Intercept	1.000	0.000		
Age	0.000	0.000	0.00	1.000
Gender	0.000	0.000	0.00	1.000
Education	0.000	0.000	0.00	1.000
Income	0.000	0.000	0.00	1.000
Health	0.000	0.000	0.00	1.000
Marital	0.000	0.000	0.00	1.000
Religion	0.000	0.000	0.00	1.000
Occupation	0.000	0.000	0.00	1.000
Residence	0.000	0.000	0.00	1.000
Time	0.000	0.000	0.00	1.000
Constant	1.000	0.000	0.00	1.000

General uniform lighting - MAS LEDBulbDT5.9-60W E27 CRI95A60CL G UK

Lifetime



Life Expectancy Diagram



**Lumen Maintenance Diagram - MAS LEDBulbDT5.9-60W E27 CRI95A60CL
G UK**



Test report

Light measurement results

Print date 5/9/2025

Measurement Conditions

Tested c-planes	3 – distance {C_PLANES_RES}°
Tested gamma angles	181 – {H_PLANES_RES}°
Input Power	5.9 W

Tested Light Source	MAS LEDBulbDT5.9-60W E27 CRI95A60CL G UK
Basic Luminous Shape	SPHERICAL
Item No.	
Manufacturer	Philips

Main Light Measurement Results

Output – Total Lumen (Up% / Down%)	806 lm – 50.97% / 49.03%
Efficiency	137 lm/W
Peak Intensity	76.7 cd
Correlated Color Temperature, CCT	2700 K
Color Rendering Index	CRI 95.0

Polar light distribution diagram

