

Lighting | Technical information

GET lighting control products are compatible with many lamp types. Please check the table below for suitability.

Lamp type		Dimmer					Switch						
		Rotary	Electronic	1000w	Smart	ULTI	Plate/ Toggle	Time delay	Key card	Card switches	PIR	Photocell	ULTI
Incandescent													
GLS, Candle, Decorative, Golfball, striplight etc	MV	●	●	●	●	●	●	●	●	●	●	●	●
Halogen - GU10, G9, R7s, Halogen replacements	MVH	●	●	●	●	●	●	●	●	●	●	●	●
Halogen - MR16, G4, MR11, GU4, GU5.3.	LVH	●	●	●	●	●	●	●	●	●	●	●	●
Fluorescent CFL													
Tubular, compact double D 2 pin/4 pin		-	-	-	-	-	●	●	●	●	●	●	●
CFLi													
Stick, Candle, Spiral, Golfball, GX53, GU10, Energy saving pendant	MV	-	-	-	-	-	●	●	●	●	●	●	●
Dimmable CFLi	MV	●	-*	-*	-*	●*	●	●	●	●	-	●	●
Linear													
Mini batten, T4, T5	MV	-	-	-	-	-	●	●	●	●	●	●	●
T8 magnetic ballast HPF, LPF	MV	-	-	-	-	-	●	●	●	●	●	●	●
T8 / High output T5 HF	MV	-	-	-	-	-	●	●	●	●	●	●	●
HID													
Mercury Vapor	MV	-	-	-	-	-	●	●	●	●	●	●	●
Self-Ballasted Mercury Vapor	MV	-	-	-	-	-	●	●	●	●	●	●	●
Metal Halide	MV	-	-	-	-	-	●	●	●	●	●	●	●
High Pressure Sodium	MV	-	-	-	-	-	●	●	●	●	●	●	●
Low Pressure Sodium	MV	-	-	-	-	-	●	●	●	●	●	●	●
Light Emitting Diode													
LED with Driver	MV	-	-	-	-	-	●	●	●	●	●	●	●
LED Replacement													
GU10, MR16	MV	-*	-*	-*	-*	-*	●	●	●	●	●	●	●

Notes*
The availability, types and styles of dimmable CFLi's and LED's will increase significantly with the progressive withdrawal of Incandescent lamps from the marketplace. Check with the Technical Support helpline (Tel 0121 565 7770) or website to determine if your lamp is compatible with GET controls.

- N.B.
MV = Mains voltage
MVH = Mains voltage halogen
LVH = Low voltage halogen
● = compatible
-* = not compatible

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Lighting range standards

	Mains Halogen Downlighters	Low Voltage Dichroic Downlighters	Low Voltage Cabinet Lights
Operating Voltage	230/240V AC 50Hz	12V AC 50Hz	12V AC 50Hz
Max Lamp Rating	50W	50W	20W

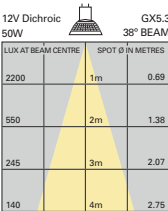
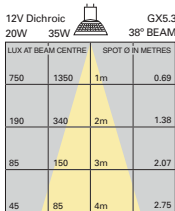
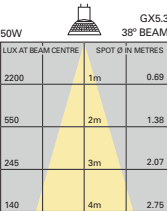
Standard Compliance	EN 60598-1:1997	EN 60598-1:1997	EN 60598-1:1997
Lamp Type	GU10 Closed Halogen ES50	MR16 Dichroic Closed Type	G4 Capsule Lamp



Beam Diagrams

Halogen lamps (mains)

MR16 dichroic lamps (low voltage)



Electronic Transformer data

MODEL	65VA		105VA		150VA		200VA	
	GTR65P	GTR65	GTR105P	GTR105	GTR150P	GTR150	GTR200P	GTR200
Primary (V)	230-240V		230-240V		230-240V		230-240V	
Secondary (V)	11.4 - 11.6V		11.4 - 11.6V		11.4 - 11.6V		11.4 - 11.6V	
Power	65VA		105VA		150VA		200VA	
Output (Hz)	40KHz - 43KHz		40KHz - 43KHz		40KHz - 43KHz		40KHz - 43KHz	
Current (A)	5.4A		8.8A		13A		17.4A	
LED Indicator	Yes	No	Yes	No	Yes	No	Yes	No
Output wires	2 x 300mm silicon insulated		2 Pairs		4 Pairs		4 Pairs	
Short Circuit Protection	Manual Reset	Auto Reset	Manual Reset	Auto Reset	Manual Reset	Auto Reset	Manual Reset	Auto Reset
Overload Protection	Manual Reset	Auto Reset	Manual Reset	Auto Reset	Manual Reset	Auto Reset	Manual Reset	Auto Reset
Thermal Protection	Resettable	Yes	Resettable	Yes	Resettable	Yes	Resettable	Yes
Max Case Temp	85°C		85°C		85°C		85°C	
Power Factor	0.98		0.98		0.98		0.98	
Cable Size max.	1.5mm²		1.5mm²		1.5mm²		1.5mm²	
Max Dimensions	124mm x 30mm x 40mm		147mm x 30mm x 40mm		206mm x 44mm x 56mm		206mm x 44mm x 56mm	
Case material	Polycarbonate UL94 V0		Polycarbonate UL94 V0		Polycarbonate UL94 V0		Polycarbonate UL94 V0	
Weight	107g	97g	121g	112g	280g	270g	300g	290g
Guarantee	10 Years	5 Years	10 Years	5 Years	10 Years	5 Years	10 Years	5 Years



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Ingress protection system

EN 60529

The resistive performance of fittings to solids and liquids is indicated by the IP (Ingress Protection) prefix followed by two numbers. The first number indicates the measure of protection against the ingress of solids. The second number indicates the measure of protection against the ingress of liquids.

First identification number

Protection against the ingress of solids

Number	Measure of protection	Test
IP2X	Against foreign bodies > 12mm Ø	Ball 12mm Ø and finger test
IP3X	Against foreign bodies > 2.5mm Ø	Steel wire 2.5mm Ø
IP4X	Against foreign bodies > 1.0mm Ø	Steel wire 1.0mm Ø
IP5X	Against harmful dust deposits (dust proof)	Talcum powder – particles 1 µm Ø
IP6X	Against any entry of dust (dust light)	Talcum powder – particles 1 µm Ø

Second identification number

Protection against the ingress of liquids

Number	Measure of protection	Test
IPX1	Against falling drops of water	Water falling vertically
IPX2	Against falling drops of water	Water falling up to 15° from vertical
IPX3	Against falling drops of water (rain proof)	Water falling up to 60° from vertical
IPX4	Against splashed water (splash proof)	Water from all directions
IPX5	Against jets of water (jet proof)	Water from all directions projected by a nozzle
IPX6	Against heavy seas or powerful water jets	Water from all directions projected by a nozzle
IPX7	Against prolonged immersion effects, but not for continuous underwater application	Immersion in water > 1m for 30 minutes
IPX8	Against prolonged submersion (pressure water-tight)	Immersion in water > 1m max for 30 minutes – max. depth tested indicated after symbol

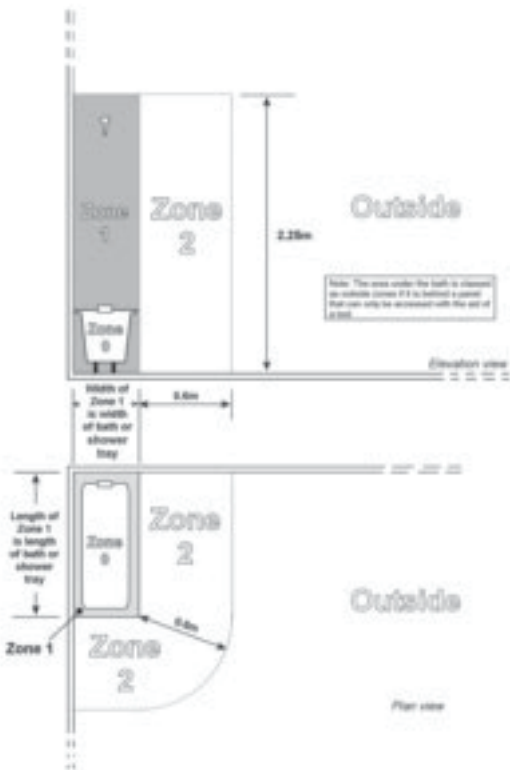
Current-using equipment and accessories in locations containing a bath or shower

These illustrations and the advice opposite are based on BS 7671:2008 the IEE Wiring Regulations 17th Edition, Section 701. For full details please look in this document.

For lighting installed in Zone 1 and 2 all luminaires must be at least IPX4, or IPX5 if water jets are used for cleaning.

All circuits for current-using equipment and accessories must be protected by RCD's of 30mA rating.

SELV (12V ac) luminaires must have the SELV source (transformer) outside the zones e.g. in the ceiling void.



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Light and Colour rendering

The colour appearance will depend on the spectral emission of the light source and the ability of a light source to render colours naturally, without distorting the hues. An even balance of light and colour define the atmosphere of a room and by the warmth or coldness influences a persons mood.

The colour characteristics of a lamp are governed by two separate criteria: colour appearance and colour rendering.

Colour temperature

The colour appearance of a light source characterised by the colour temperature Kelvin (K), the higher the temperature of the lamp the whiter its light.

Colour rendering

The effect that Fluorescent and other types of lamp have on the appearance of coloured objects is indicated by the general colour rendering index (Ra) scale of eight standard test colours.

Measured on a scale of 0 to 100, where 100 is the equivalent of daylight, higher values indicate better colour rendering. Values of 100-90 are very good, 90-80 good and those below 80 should not be used where colour rendering is a key factor.

LUX (lux)

The amount of light falling on a surface. Offices are typically lit to between 600 and 800 lux at desktop height.

1 Lux = One lumen per square metre, unit of illuminance.

Lamp types

Tungsten Halogen

This light source is more efficient and compact and can therefore be directed to specific areas, producing a bright, white light brighter than incandescent lamps of the same wattage.

They are dimmable with all forms of modern dimmer control.

Linear Fluorescent

Up to 5 times more efficient and lasting up to 8 and even 15 times longer than incandescent. However, unlike halogen and tungsten these lamps require ballasts that control the current. Dimming can be achieved with many forms of electronic ballast. High output T5 diameter lamps are becoming the standard for commercial installations.

Compact Fluorescent Lamps

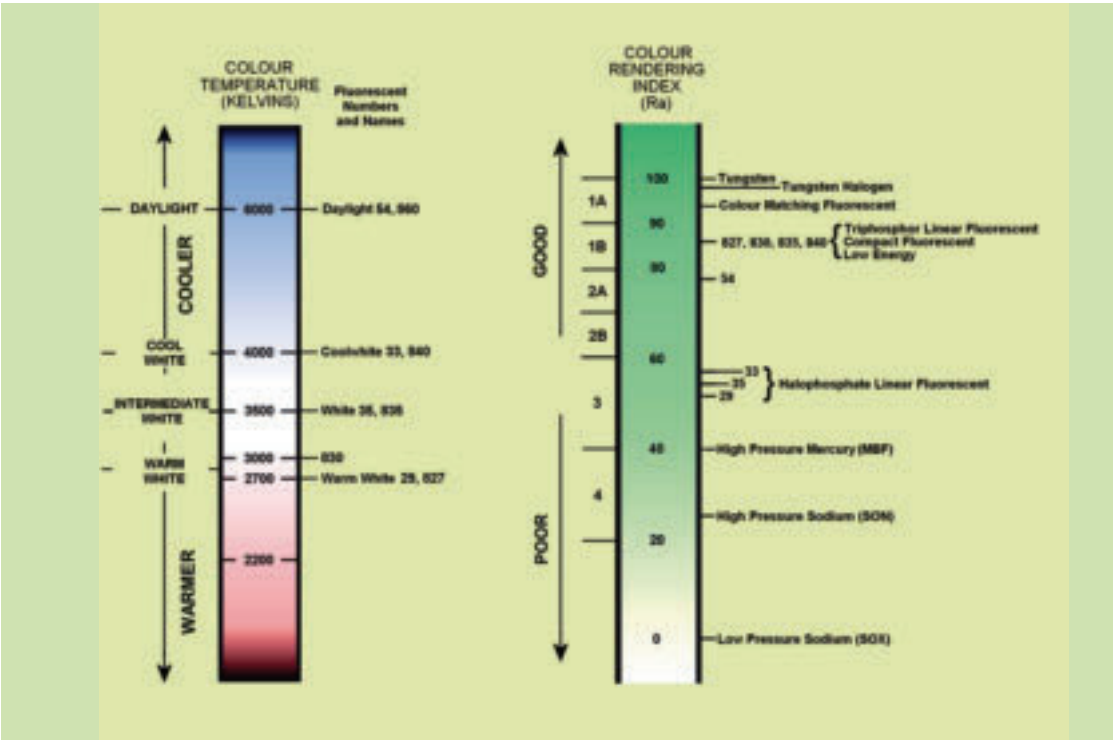
CFL's have the same characteristics and advantages of linear fluorescents, but are folded into compact shapes. Many wattages are available, from 5W to 80W.

External Ballast high frequency (Non retrofit) – Compact in size the 2 pin and 4 pin CFL's require a separate ballast.

Integral Ballast high frequency CFLi or low energy lamps – These lamps have internal electronic ballasts and can be used as direct replacements for GLS, candles and other lamps. They are central to achieving domestic lighting Carbon Emission Reduction Targets. The availability, types and styles of CFLi's and of dimmable versions will increase significantly with the progressive withdrawal of Incandescent lamps from the marketplace.

LED

Light Emitting Diode lamps can last for up to 50,000 hours. All LED light sources require some form of current control; either built into the lamp, such as in retrofit GU10's, or an external driver. For actual illumination the minimum wattage of retrofit lamps should be at least 3 Watts. LED lighting is currently in its infancy but is likely to eventually become a dominant light source. The availability of controllable LED's is currently poor but will become more prevalent.



Luminaire classification

Quality

All fittings produced by GET are manufactured and tested under a quality assurance system in accordance with EN ISO 9002: 1994, and are designed to comply with EN 60598

Compliance

The European Norm Electromechanical Certification (ENEC) has been adopted as a common mark of conformity with European Standards. A mark issued by any single national approbation bodies implies compliance with all seventeen international bodies. The ENEC mark now replaces the national test house symbol, and is appended by a number indicating from which test house the approbation originated.



CE marking

CE marking indicates compliance with the requirements of:

- 1. Low voltage directive for electrical safety (73/23/EEC as amended by 93/96/EEC)
- 2. EMC directive for electro magnetic compatibility (89/336/EEC as amended by 92/31/EEC)

Radio supression

EN 55015, EN 61000 & EN 61547

Fittings comply with radio interference supression and electromagnetic compatibility (EMC) regulations.

Feature symbols

Voltage

Fittings and transformers are supplied primarily for operation on 230/240V 50Hz. For alternative electrical specifications contact our Technical Support Department.

Electrical protection

Class 1 – fittings comply with class 1 (I) earthed electrical requirements i.e. functional insulation in all parts and earth termination.

Class 2 – fittings comply with class 2 (II) double insulated electrical requirements i.e. complete insulation in all parts without earth termination. In the event of an electrical fault, no dangerous voltage can reach touchable metal parts.

Class 3 – fittings comply with class 3 (III) triple insulated electrical requirements i.e. designed to connect to an external low voltage supply which is the same as the internal operating voltage requirement. In the event of an electrical fault, no dangerous voltage can develop.

Inflammability of surface protection

EN 60598



Suitable for mounting in or on furniture made or semi-incombustible or normally combustible materials such as wood.



Fittings made for mounting in or on furniture made of materials of unknown properties.

Equivalent wattages for energy saving lamps

Energy saving lamps last up to 8 times longer than standard lamps.

Standard	Energy Saving
15 Watts	4 Watts
30 Watts	7 Watts
40 Watts	9 Watts
60 Watts	11 Watts
70 Watts	13/15 Watts
100 Watts	20 Watts