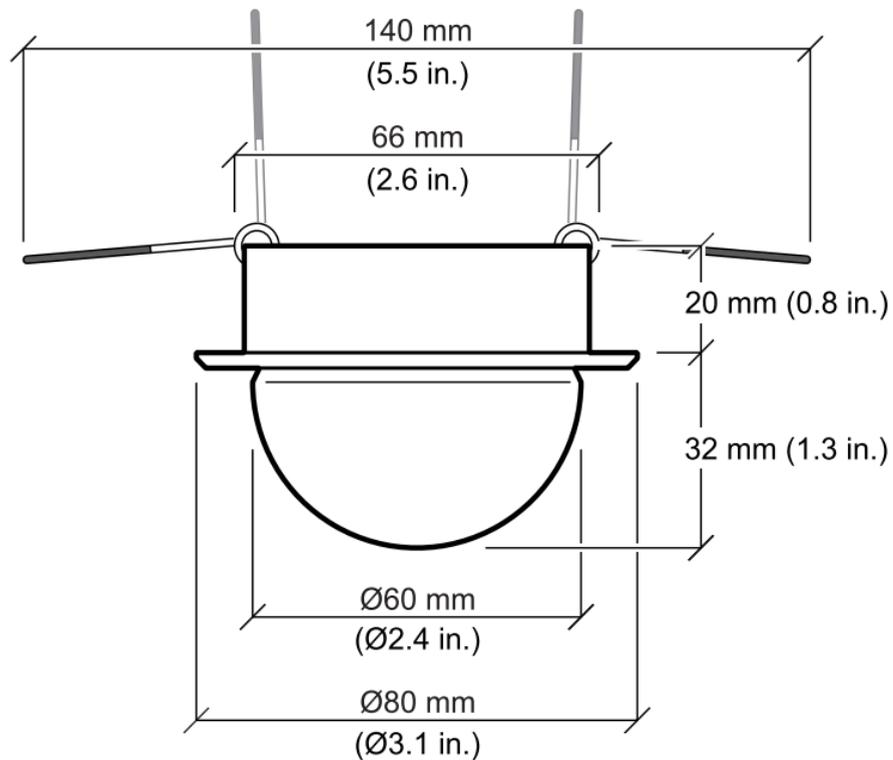


SGM[®] LD-5
LED DOME



LD-5 LED Dome dimensions



*Measurements in millimeters
and inches (in brackets).
Drawing not to scale.*

LD-5 LED DOME USER MANUAL REV. 2

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This edition applies to firmware version 1 or later.

English edition

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Safety information



WARNING! Read the safety precautions in this section before installing, powering or operating this product.

The LD-5 is intended for professional use only. It is not suitable for household use.

Review the following safety precautions carefully before installing or operating the device.

- Do not open the device; there are no user-serviceable parts inside.
- Ensure that power is cut off when connecting the device and its power supply unit to the AC mains supply.
- Ensure that the power supply units are electrically connected to earth (ground).
- Do not apply power if the device or mains cable is in any way damaged.
- Do not immerse the fixtures in water or liquid.
- Install only in accordance with applicable building codes.
- Do not paint, cover, or modify the device, and do not filter or mask the light.
- Installation must be performed by a qualified electrician.

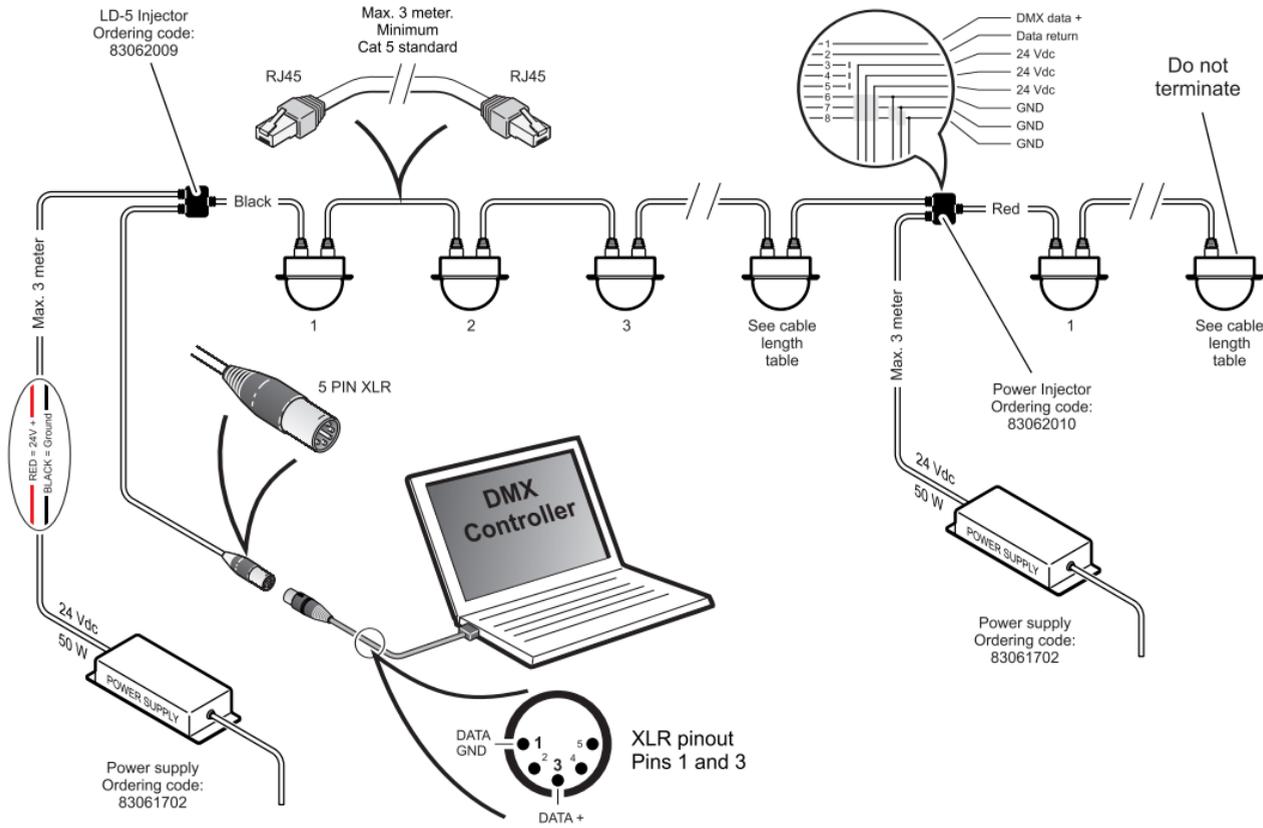
Overview

The LD-5 LED Dome is a DMX-controllable effect light incorporating red, green & blue (RGB) color mixing. It is designed for permanent indoor installation and is ideal for pixel arrays or similar daisy-chained arrays of multiple LD-5s or similar DMX controllable effect fixtures. LD-5 LED Domes have an LED life expectancy of 50,000 hours.

Preparing for installation

Each LD-5 LED Dome must be connected—directly or indirectly (in the case of a daisy chain of connected LD-5s)—to an LD-5 *power supply unit* (sold separately - P/N 83061702) that is connected to mains supply and a DMX-compatible control device (not supplied). The first fixture in a daisy chain, or a single LD-5, is connected to the power supply and DMX controller via an *injector* (sold separately P/N 83062009).

Subsequent LD-5s in the daisy chain are connected using standard CAT5 (or a higher standard) patch cables (not supplied)—attached using the RJ45 connections on the rear of each LD-5—through which power and control signals are sent.



A single power supply can drive multiple LD-5s, but note that the strength of the current falls between each LD-5 and the degree of this drop is also dependent on the length of the cable. The following table provides some guidelines, but for additional guidance, contact SGM or your local distributor.

Number of LED Domes per power supply	
Number of LED Domes	Maximum length of CAT5 patch cable between LED Domes
15	3 metres (10 feet)
20	2 m (6.5 ft)
25	1.5 m (5 ft)
30	1 m (3.3 ft)
35	0.5 m (1.5 ft)

As the table indicates, the greater the distance between each LD-5, the fewer fixtures per power supply, and vice versa; if you increase the number of LD-5s, you effectively reduce the corresponding maximum distance between them. For daisy chains with many fixtures, or larger distances between each fixture, additional power supply units can be used to boost the power via injector cables (both sold separately).

The maximum cabled-distance between a power supply unit and the first LD-5 LED Dome, and between successive LD-5s, is 3 metres (10 feet).

The theoretical maximum number of LD-5s in a controllable daisy chain is 170, but additional fixtures can be controlled in an installation using multiple DMX universes and separate daisy chains, each of up to 170 fixtures. Each fixture uses three DMX control channels, and the maximum number of channels in a DMX universe is 512 ($3 \times 170=510$ channels).

Note that the last fixture in a daisy chain must not be terminated.

Power supply unit

The LD-5 power supply unit (transformer) can operate on any 100–240 V, 50/60 Hz AC mains power supply and supplies 24 V DC to LD-5 LED Domes via an injector (for the first power supply in a daisy chain of LED Domes - P/N 83062009) or power injector (for subsequent booster power supplies in a daisy chain of LED Domes - P/N 83062010). Splicing or connecting a power supply unit to mains supply, injector or power injector must be carried out by a qualified electrician.

Power supply units must be grounded/earthed and be able to be isolated from AC power. The AC power supply must incorporate a fuse or circuit breaker for fault protection.

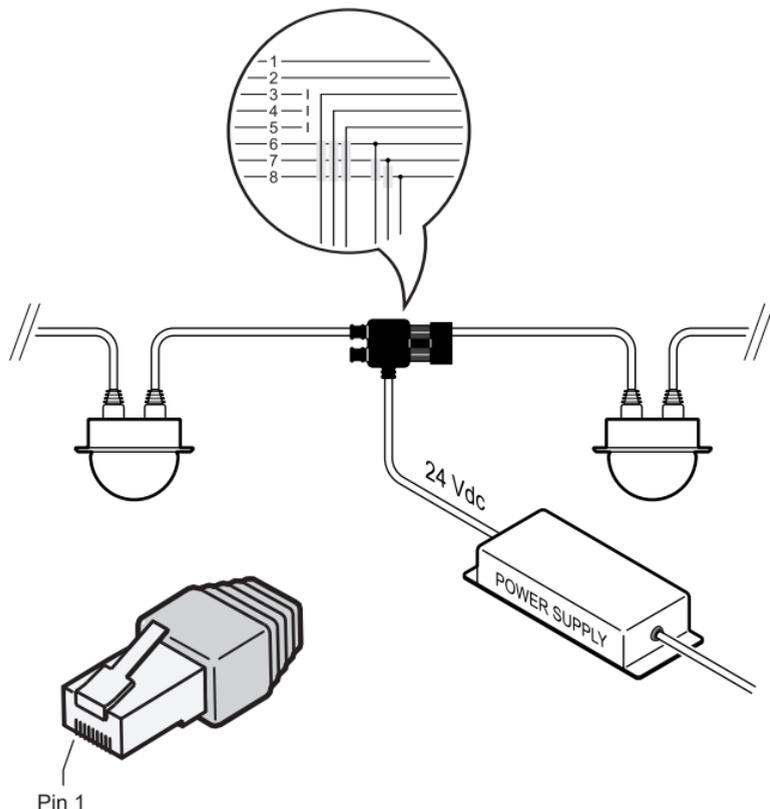
Do not open a power supply unit to replace the supplied power cable, or connect the device to an electrical dimmer system, as this can damage it.

Boosting power using an additional power supply unit and a power injector

When boosting the power to a section of a daisy chain using an additional power supply unit (P/N 83061702) and a power injector (P/N 83062010), the same 3 metre (10 feet) maximum cabled-distance between the power supply and the next LD-5 LED Dome applies.

The injector should remove any need for splicing or crimping, but note that the DMX control signal on pins 1 and 2 continues unbroken to each fixture in a daisy chain. Boosted power is supplied on pins 3-8.

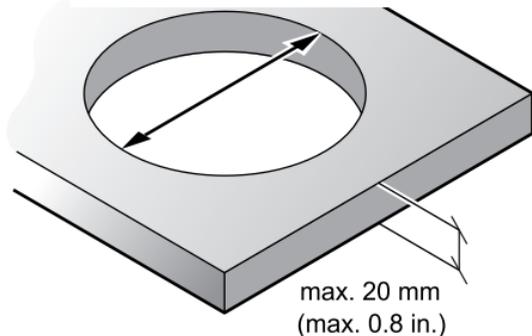
When patching or crimping power and control cables it is important to note that the LD-5 LED Dome uses *unbalanced* DMX, that is to say that DMX control only uses pins 1 and 3 of the XLR connectors and pins 1 and 2 of the CAT5 RJ45 connectors (Pins can be identified on an RJ45 connector by placing it so that the copper connectors face downwards; pin 1 is on the left side.)



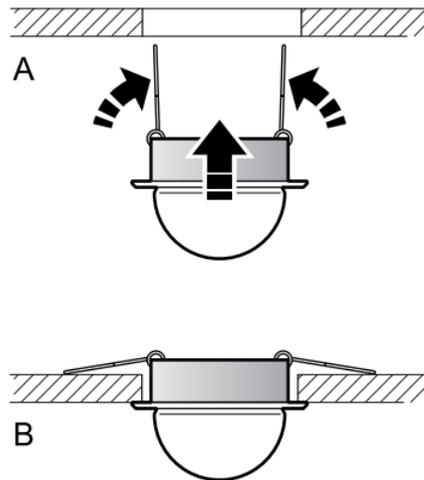
Installing an LD-5 LED Dome

The LD-5 can be installed in any orientation. A hole of the appropriate size must be cut in the mounting surface prior to mounting the LD-5. When mounting LD-5's in a wall or ceiling space, draw and attach the injector and patch cables and connect these before you insert the LD-5 LED Domes.

Ø min. 66 mm - max. 80 mm
(min. 2.6 in. - max. 3.1 in.)



*Measurements in millimeters
and inches (in brackets).*



DMX control

LD-5 LED Domes can be controlled using any DMX512-compatible DMX controller that supports the size of your installation. For chains or arrays of LD-5s we recommend the use of a controller that has pixel mapping functionality.

About DMX

Each individual LD-5 can be controlled using signals sent by a DMX controller over three channels. The first channel used to receive data from a DMX control device is known as the DMX address. Each LD-5 sets its own DMX address automatically. The first LD-5 is set to DMX address '1', and the next fixture sets itself to '4', and so on in increments of three channels per fixture. For example, if an LD-5 has a DMX address of 7, then it uses channels 7, 8 and 9. The following fixture in the DMX chain will have a DMX address of 10. It is not possible to otherwise manually set or force the DMX address of an LD-5 LED Dome.

DMX protocol

LD-5 LED Dome - 3 channel DMX - RGB			
Channel	Value	Percent	Function
1	0-255	0-100	Red 0-100%
2	0-255	0-100	Green 0-100%
3	0-255	0-100	Blue 0-100%

Service

There are no user-serviceable components in the device.

Do not open the LD-5, as doing so is likely to damage it.

Consult your SGM dealer if the device operates abnormally, is defective or otherwise in need of service or repair.

Specifications

PHYSICAL - LD-5 LED DOME

Length x depth x height	80 x 80 x 52 mm (3.1 x 3.1 x 2.1 in.)
Height of dome over mounting surface.....	32 mm (1.3 in.)
Height of base behind mounting surface	20 mm (0.8 in.)
Weight82 grams (2,89 ounces)

LIGHT SOURCE

Illumination source.....	1 x RGB SMD LED
Expected LED lifetime (at 70% luminous output)	50,000 hours

CONSTRUCTION

Housing	Aluminium body with translucent plastic dome cover
Body finish	Electrostatic powder coating

INSTALLATION

Orientation	Any
Diameter of mountig hole	66-80 mm (2.6-3.1 in.)
Maximum thickness of mounting surface	20 mm (0.8 in.)
Maximum cabled-distance from power supply unit to LD-5 LED Dome	3 metres (10 feet)
Maximum cabled-distance between daisy-chained LD-5 LED Domes.....	3 metres (10 feet)

OPERATING CONDITIONS

Ambient temperature range (T_a) -10° to 40° C (14° to 104° F)
Maximum relative humidity 98%

PROGRAMMING AND CONTROL

Control interface USITT DMX 512-A
DMX channel requirements 3 channels per LD-5 LED Dome (self-addressing)

CONNECTIONS - LD-5 LED DOME

Power and control input and output..... RJ-45

CONNECTIONS - LD-5 INJECTOR

DMX control.....5-pin XLR male

LD-5 POWER SUPPLY ELECTRICAL

DC power out..... 24 V / 50 W
AC mains power in 100-240 V AC, 50/60 Hz

ORDERING INFORMATION

LD-5 Power Supply UnitP/N 83061702
LD-5 InjectorP/N 83062009
LD-5 Power Injector.....P/N 83062010

* Specifications subject to change without notice

User's notes



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