

DARAY[®]

Medical



SL300 LED

Minor Surgery Light
Manual

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1. General information

These instructions cover the single head examination lights of SL300LED series - wall, ceiling or mobile mounted. These are the following light types:

- Single head wall-mounted light SL300LEDW
- Single head ceiling-mounted light SL300LEDC
- Single head mobile-mounted light SL300LEDM

Due to the design and lighting properties of the SL300LED they are especially suited for use as the main source of light in diagnostics, minor surgery and examination rooms.

Features

- High light intensity,
- Very high durability of the lamp light source -LED diode
- Lack of radiated heat from the light emitted by the lamp
- Excellent colour rendering of objective
- Removable sterilizable handle for the light-head positioning
- Convenient manoeuvrability and wide range of movement

2. Technical data of the examination SL300LED lights

Supply voltage	230 V; 50/60 Hz
Power requirement	58 W
Light intensity at the distance of 1m (E_c)	50,000 lux
Colour temperature	4,000 K
Colour rendering index R_a	89
Light spot diameter d_{10}	23cm
Light spot diameter d_{50}	11 cm
Depth of illumination L_1+L_2	110 cm
Total radiant flux density (wavelength range 360 -780 nm)	230 W/m ²
Class of protection against electric shock	I
Protection provided by enclosure	IP 20
Mass	15kg
Fuse type	Fuse cartridge 1A/250V T

For dimensions and movement range, see figures 1 - 2

The product complies with the safety requirements PN-EN 60601-1:1999.

3. Design (Fig. 1)

The SL300LED series is made up of a head (1) with a light source in the form of monochromatic LED diodes, mounted on the counterbalancing arm (2) movable in the vertical plane. The light-head is made of high thermal resistant plastic with both high durability and mechanical strength. The light-head is equipped with a removable sterilizable handle (3), to adjust both the head position and the light beam direction.

The light-head is fitted with a switch (4) to turn the light on and off.

Illumination of the object by multiple light sources allows the light intensity to be increased, improves visibility and reduces shadows.

Individual types of the SL300LED lights differ in the design of the suspension arms, depending on the mounting of the light in the room (wall or ceiling-mounted light).

The light's suspension is provided by counterbalancing arms (2) and primary arms (5) allowing the light-heads to be easily positioned as required.

The ceiling-mounted and wall-mounted lights are provided with power pack installed under the shield of the mounting assembly. The mobile-mounted light houses the power pack within the base.

4. Operation

Wall and ceiling - mounted lights are switched on by two switches. The main power switch (user supplied), installed on the wall, is used to switch the mains supply on. The second switch is located over the sterile handle.

Mobile mounted lights are switched on by of two switches. The main power switch located on the front of the transformer, this is to be switched to position "I". The green LED will then illuminate to indicate that there is power. The second switch is located over the sterile handle.

The light can be left with the main switch 'on' and the light-head switch 'off' indefinitely

The removable sterilizable handle, attached to the light-head is designed for positioning the light-head as required to aim the light beam at the operating field.

The handle is mounted to the light-head pin by means of a simple button catch. To remove the handle (e.g. for sterilization), depress the button. To replace the handle, put it over the pin until the button snaps into place.

4.1 Maintenance and sterilization

WARNING

The light is not a waterproof device. It must not be splashed with fluids. Avoid ingress of water. Do not use organic solvents for washing.

NOTICE:

Intensive and prolonged UV radiation has a degrading influence on plastics and lacquers. It is recommended to protect the light-head against direct exposure to UV rays (i.e. germicidal lights, direct sun exposure).

The following recommendations should be followed during maintenance of the light:

- Lacquer-finished surfaces and transparent elements should be cleaned only from outside.
- Use water solutions of general-purpose detergents for cleaning,
- To prevent penetration of liquid into the light inside, drain off excess of liquid from a sponge or cloth used for cleaning,
- To disinfect washed surfaces, use mild solutions on the hypochlorite or ammonia base.
- Wipe the washed surfaces dry with soft cloth.

To sterilize the light head handle, proceed as follows:

- Remove the handle,
- Wash the handle with water with addition of detergent,
- Rinse the handle with distilled water,
- Sterilize the handle using water steam at 134°C (the duration of sterilization should be as required for the method used).

Frequent sterilization of replaceable handle of light-heads leads to usual abrasion (wear and tear). If material consumption ('fatigue') has caused cracking and colour change, replace the handle.

NOTICE:

Do not leave the handle in water solutions longer than the required time for washing or sterilization.

5. Installation instructions

NOTICE:

The lights or sets should be installed by suitably qualified personnel.

5.1 Shipment package

The lights are delivered to the customer disassembled into the following subassemblies:

- Light-head with counterbalancing arm and horizontal rotary arm
- Power pack with mounting assembly
- Fasteners.

The shipment package also contains the following items:

- Template, used to make mounting holes for wall-mounted and ceiling-mounted lights,
- Spare fuse cartridge

For the mobile you will receive:

- Light head with the counterbalancing arm
- Upper pipe of the stand
- Lower pipe of the stand
- Base with the power supply

5.2 Installation of the ceiling-mounted lights

NOTICE:

Ceiling-mounted lights require a double-pole switch to be installed in the supplying line.

Selection of the light installation point on the ceiling should be made taking into account instructions given in fig. 5.

The ceiling strength should be sufficient for mounting the light of up to 25 kg mass, with a moment exerted at a point of mounting not exceeding 180 Nm. Mounting methods depends on the ceiling design. Screws with expanding sleeves or M10 studs are generally used for mounting.

NOTICE:

The fixing elements are not subject of delivery

5.2.1 Installing the power pack with the mounting assembly directly to the ceiling (figs. 6 and 7)

To install the light:

- Apply the template, supplied with the light, to a selected place and mark spacing of mounting holes (2),
- Mounting bolts (4 pcs) should protrude from the ceiling for at least 40 mm but no more than 60 mm,
- Power supply conductors should protrude from the ceiling for at least 200 mm.

To mount the light directly to the ceiling, proceed as follows (see item. 8):

Unscrew M4 screw (1) and move cover (2) away.

Bring the mounting assembly close to the mounting bolts, pass the power supply conductor (3) through the opening and mount the mounting assembly by means of nuts (4) and washer.

Level the light applying a level at points shown in fig. 8 and adjusting the levelling nuts.

Connect the power supplying conductors to the terminal block and earthing conductor (green-yellow - 5) to terminal (6).

Replace cover (2) and secure it by means of screw (1).

5.2.2 Installing the light or the ceiling sets with the lengthening element

The ceiling mounted lights can be installed in rooms of a height from 2.5 to 3.7 m. To select the correct extension element, make sure the lowest stable element of the light is at the appropriate height from the floor.

The recommended lengths of the vertical arm, for the rooms of various heights are given in the table:

Room height [m]	Vertical arm length [mm]
2.50 - 2.70	255
2.71 - 2.90	455
2.91 - 3.10	655

3.11 - 3.30	855
3.31 - 3.50	1055
3.51 - 3.70	1255

5.2.3 Installing the light in rooms with suspended ceiling

If a room has a suspended ceiling, it is possible to mount the light to the ceiling with the use of the special extension element of appropriate length 'L' (fig.9)

Cross-sectional area of the supplying conductors should be not less than 1.5mm^2 .

Length of the conductor end protruding from the ceiling should be $L+200\text{mm}$.

Pass the conductors through the special extension element. Four M10 nuts should be positioned at a distance of 3-5 mm from the suspended ceiling. Lower surfaces of the nuts should be positioned horizontally in the same plane. To mount the light on the suspended ceiling prepared as above, proceed as described under 5.2.1.

5.2.4 Light adjustment (fig. 10)

With the power pack and mounting assembly mounted as described under 5.2.1:

- Bring the horizontal rotary arm close to the power pack mounting assembly.
- Connect conductors of both assemblies paying attention to conformity in the yellow-green conductor connection (details 'X' and 'Y').
- Slide over the mask ring and connect both assemblies with the bolts.

With the light completely mounted, apply a level at a point shown in fig. 10 and check levelling of the light within full range of the horizontal arm movement. Act similarly in case of the ceiling set.

Check the light movement range according to fig.1.

NOTICE:

A poorly levelled light can spontaneously change its position in relation to the examination field.

5.3 Installation of the wall - mounted lights

When the light is to be mounted on the wall, a place of mounting should be selected.

Installation of the light should be preceded by building expertise to verify if the wall strength is sufficient for mounting the light of up to 25 kg mass, with a moment exerted at a point of mounting not exceeding 180 Nm.

Method of mounting depends on the wall structure. Screws with expanding sleeves or M10 mounting bolts are generally used for mounting.

To install the wall-mounted light:

- Apply the template to a selected place of the wall and mark mounting openings,
- Mounting bolts (3 pcs) should protrude from the wall for at least 40 mm but no more than 60 mm,
- Supplying conductors should protrude from the wall for at least 200 mm.

5.3.1 Preparation of the wall - mounted light for operation

- Put the horizontal rotary arm close to the power pack with the mounting assembly.
- Connect the conductors of both assemblies paying attention to conformity in the yellow-green conductor connection.
- Slide over the mask ring and connect both assemblies with the bolts.

5.3.2 Final adjustment of the wall suspension

Unscrew M4 screw and move cover away. Put the light on the mounting bolts, pass the supplying conductor through openings in the mounting assembly disk and mount the light using washers and three M10 nuts.

Level the light adjusting the nuts on the mounting bolts and applying a level to the horizontal rotary arm. The light should move smoothly round its axis and should stop at any points of its movement path.

Connect the supplying conductors to terminal block and the earthing conductor (green-yellow) - to terminal. Replace cover and secure it using screw.

Switch the light on and check its range of movement according to fig. 2.

5.4 Assembly of the mobile (Fig. 4)

When shipped, the power supply is pre-mounted on the base.

Draw the 24V cable through both pipes of the stand (this is easiest in a horizontal position).

In the lower part of the stand pipe, connect the cables with the pin and socket connectors.

Slide the upper stand pipe over the relevant base pipe and connect suspension arms with bolts supplied.

5.5 Fuse replacement

NOTICE:

Switch off the light supply before replacement of fuses.

NOTICE:

Replacement of fuses must be carried out by authorized personnel.

The fuse activation may generally occur only in case of failure in the light electric circuit. Replacement of the fuse should only be performed after clearing the failure by qualified and authorized personnel.

Access to the fuses in the wall and ceiling - mounted lights is possible after unscrewing the bolt, fastening the power pack cover, and moving it along the outrigger pipe till the moment the board with fuses is exposed. Screw out the fuse socket and replace the fuse cartridge. Replace the cover carrying out the above procedure in the reverse order.

Access to the fuses in the mobile mounted light can be accessed after unscrewing the screws and lifting the cover away until the fuse board is exposed. Unscrew the fuse holder and replace the fuse. Replace the cover carrying out the above procedure in the reverse order.

5.6. Preventive inspections

5.6.1 Service

At regular intervals, at least once a year, a qualified person authorized by DARAY must check all functions of the light, the supply conductors and the mains fuses in order to provide safe and effective operation.

To be controlled:

- Condition of housings and conductors' insulation
- Durability of electrical connections in terminal strips
- Working correctness of the mains switch and fuses
- Cleanness of the light and the power supply interior

6. Storage and transport

Environmental conditions for transport and storage:

Temperature	-20°C to 70°C
Relative humidity	10 - 95%
Atmospheric pressure	500 - 1060 hPa

The examination light should be transported and stored in factory supplied packaging. The package should be marked:

1. "HANDLE WITH CARE, FRAGILE"
2. "KEEP DRY"

In case the light is transported in temperature below zero, remember to stabilize it for 24 hours after transport.

Recommended operational conditions:

Temperature	+10°C to +40°C
Relative humidity	30 - 95%
Atmospheric pressure	700 - 1060 hPa

7. List of recommended spare parts

	Part	Order
1.	Fuse cartridge	Contact DARAY
2.	Sterile handle	Contact DARAY

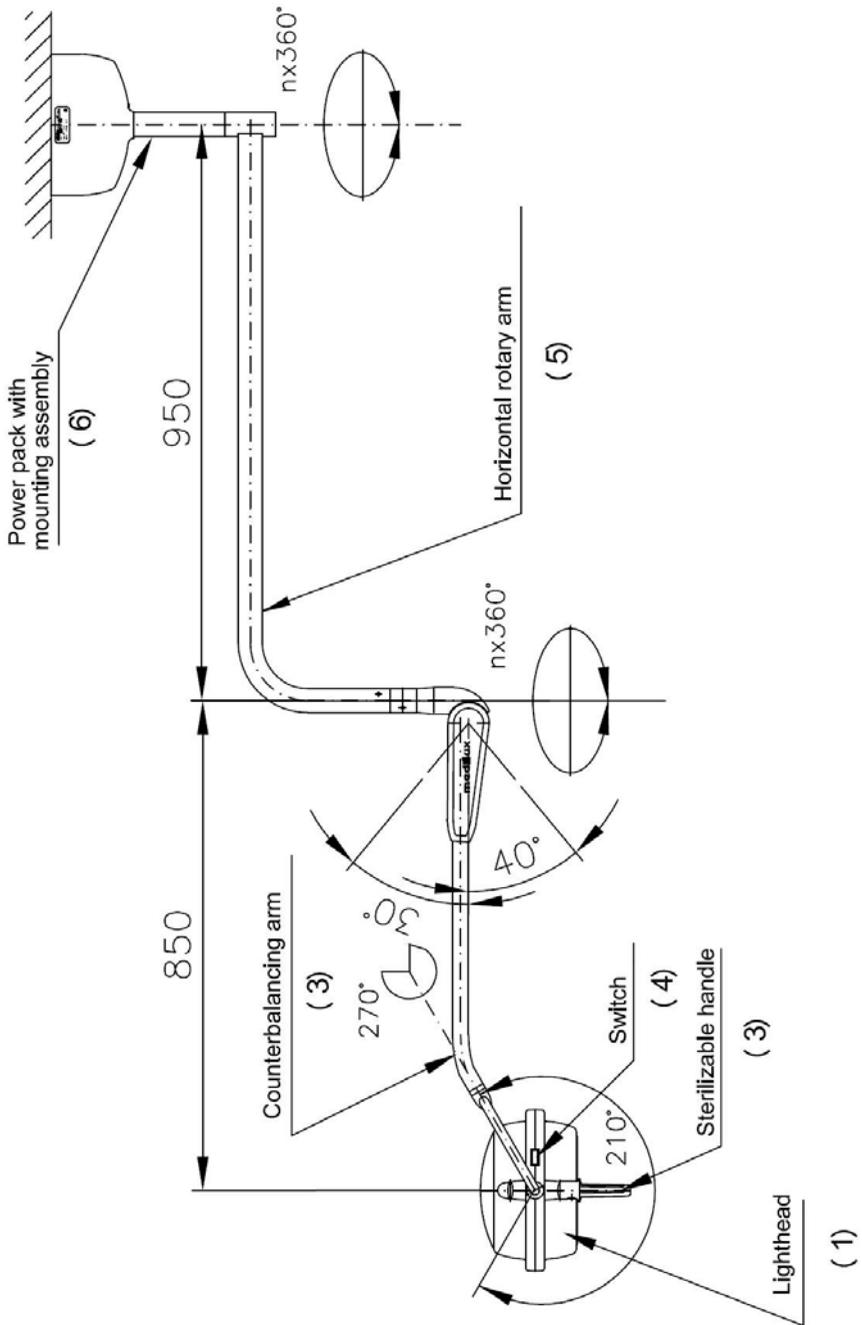
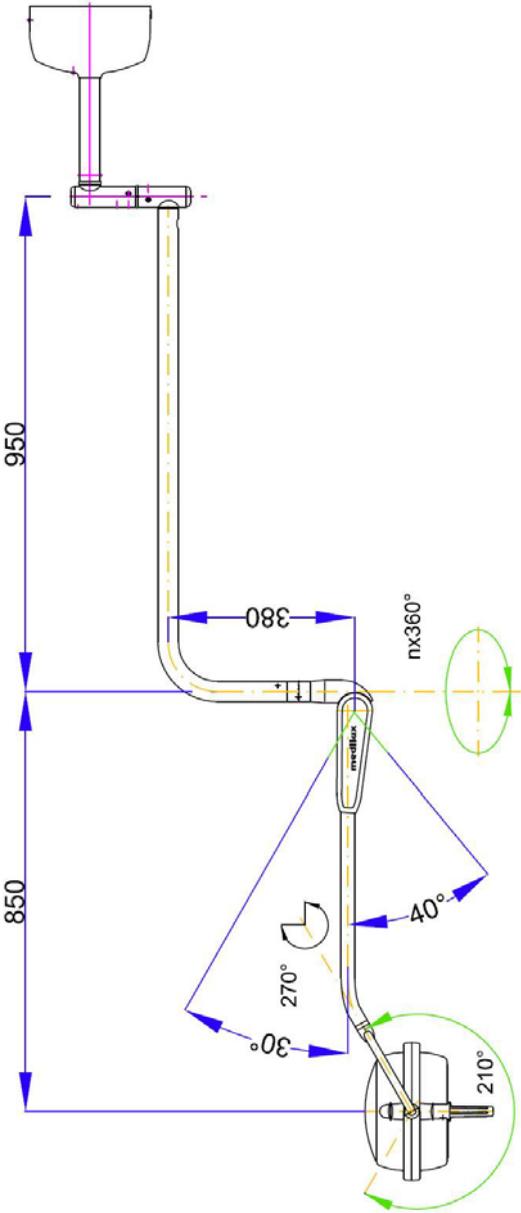


Fig. 2 SL300LEDW

Fig.2



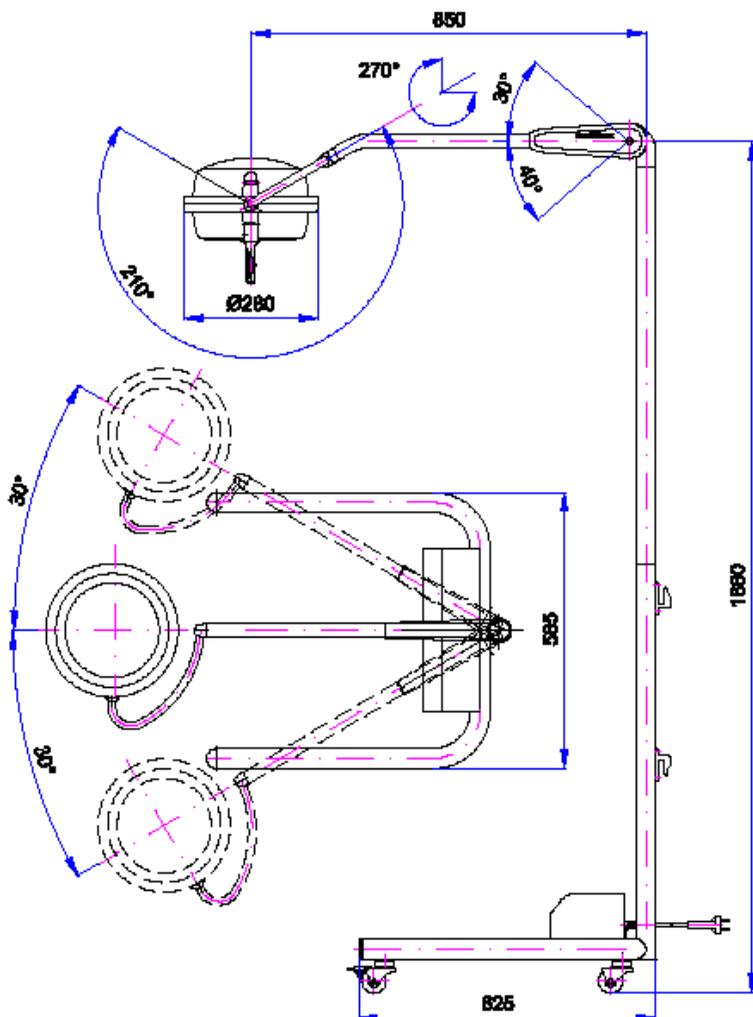


Fig.3 SL300LEDM

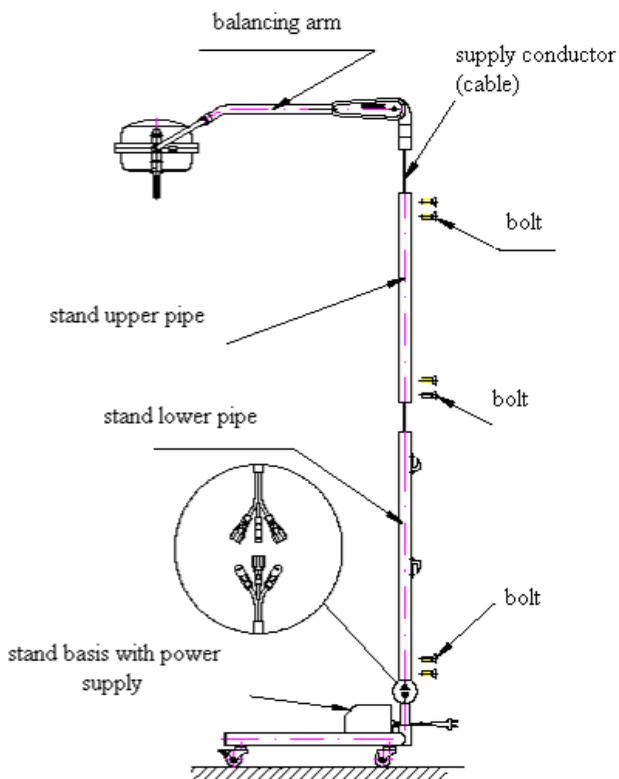


Fig.4 SL300LEDM

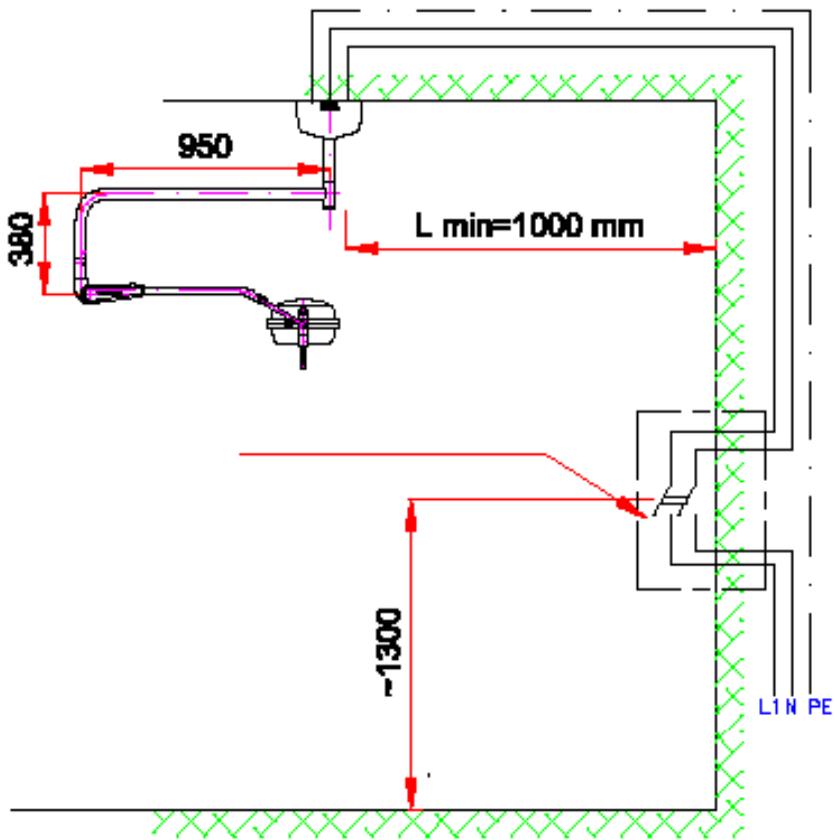
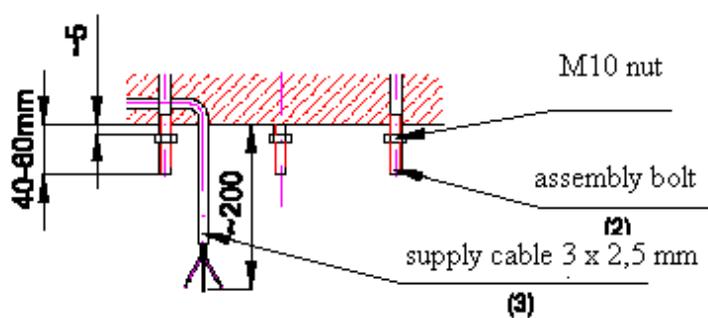
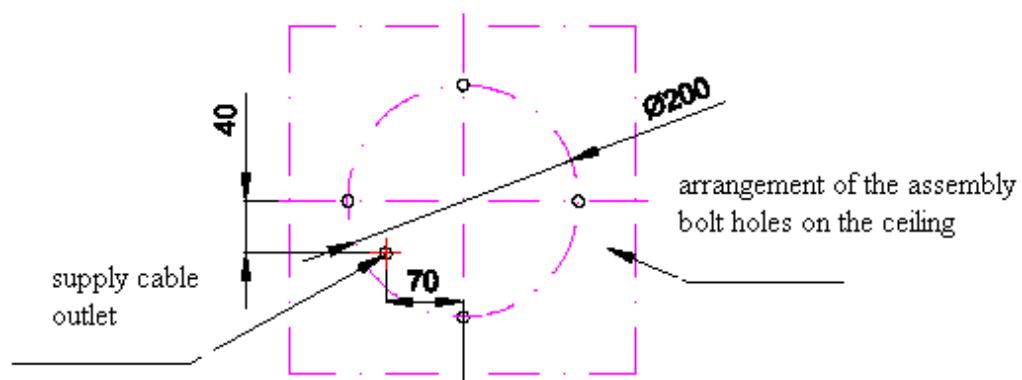


Fig.5 Location of ceiling mount in relation to the switch

Fig.6



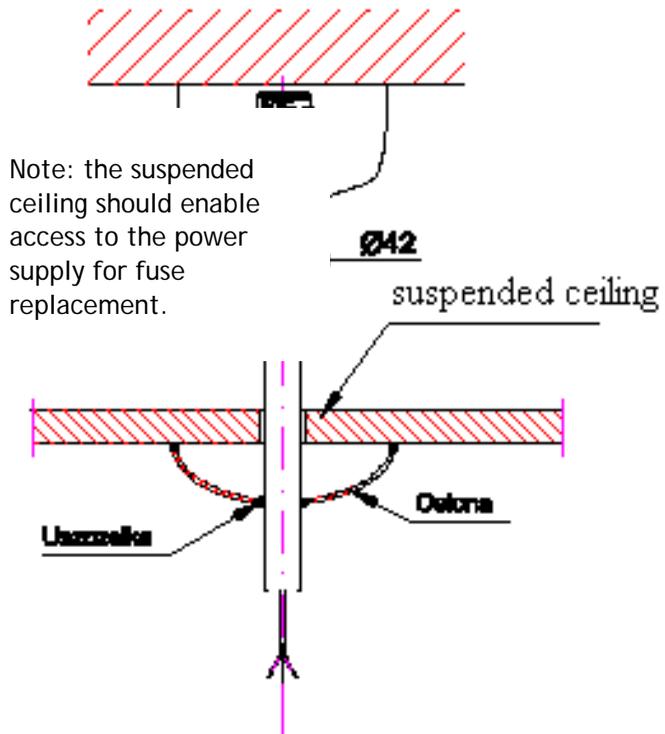
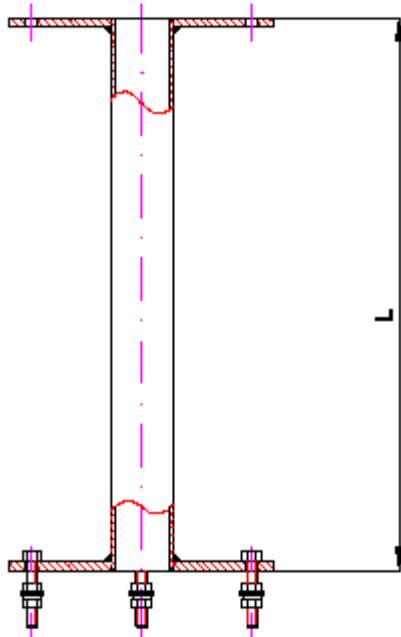


Fig.8



Note: the length L is dependant on individual customer requirements.

Fig.9 Special lengthening piece for suspended ceilings

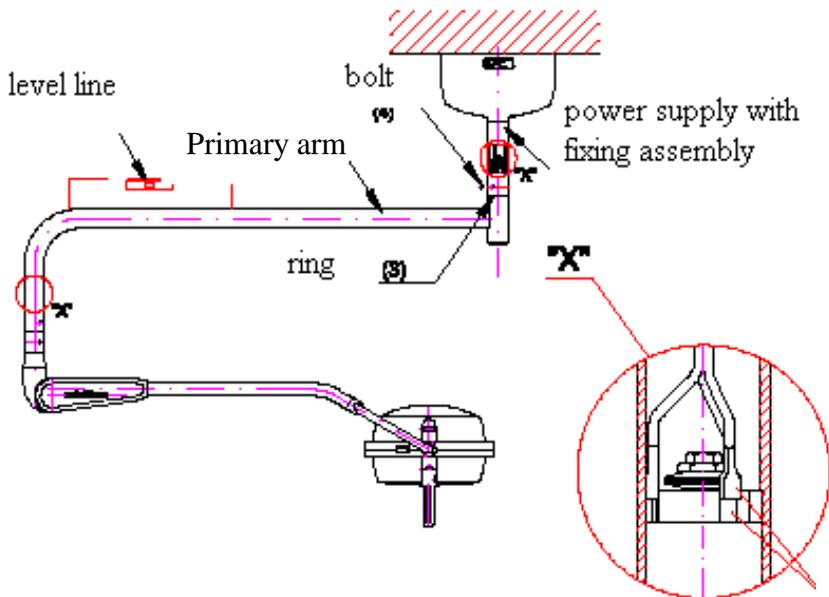


Fig.10 Connecting the SL300LED to the primary arm

IMPORTANT!
Before returning your item, you must call us on 0844 375 9000

We want you to be completely satisfied with your purchase. If you need to return goods purchased from DARAY Ltd, please read the following information carefully.

The DARAY Ltd returns policy provides guidance on when you can return goods we have supplied, and what you can expect from us once you do.

TYPE OF RETURN	REMEDY
DAMAGED GOODS Goods which are physically damaged on delivery	We must be notified within 24 hours of receipt.
Dead On Arrival (DOA) Goods which do not work	Goods which do not work on arrival or develop a fault within 28 days, we will advance replace the item.
GOODS DEVELOPING A FAULT Goods which have developed a fault within the warranty period.	If the fault develops after 28 days, but within the warranty period, we will initiate the returns procedure.
NON WARRANTY Goods which have developed a fault outside the warranty period.	If a fault develops outside the warranty period, we will initiate the returns procedure charges may be applicable.
OTHER Any situation which is not covered by any of the above.	We will always try to help, but we cannot normally offer a refund.

For additional clarification, please refer to our terms and conditions at www.daray.co.uk/terms.

In a small number of cases, we may determine that a replacement would not work any better than the original product we supplied. In such cases we will only offer a refund rather than a replacement for qualifying returns.

Replacement bulbs and spare parts ordered on our website or from supplied part codes are not eligible for credit. We will accept returns and exchange for the correct item.

If your purchase an item incorrectly you can return it within 14 days and it can be exchanged for another product of equal or higher value, excluding transportation charges incurred. Goods and packaging must be returned in their original condition. Under no circumstances will goods be accepted for return if they are damaged, have been subjected to improper handling or abuse or have been used.

If you send us goods that do not qualify for return, you will invalidate your claim to any refund, and you will be obliged to compensate DARAY Ltd for the cost of return postage and any other reasonable costs incurred processing the goods.

Your statutory rights are not affected.

WARRANTY

TERMS AND CONDITIONS OF WARRANTY

1. To qualify for this warranty you must register on www.daray.co.uk or return to DARAY Ltd (DARAY) the duly completed warranty-registration form accompanying the product.
2. DARAY warrants this product (excluding lamp) against faulty material and workmanship during the period of the warranty. The period of warranty is the period stated on your warranty card and commences on the date of purchase of the product. In the event that the product is not in good working order DARAY will provide, during the warranty period, a free repair service within the United Kingdom. The warranty is subject to proof of purchase being provided; therefore, you should retain your original receipt.
 - 2.1 The repair service consists of the provision of spare parts and/or replacement products (at DARAY's discretion) which will be provided on an exchange basis and will either be new, equivalent to new or reconditioned. All replaced spare parts and products shall become the property of DARAY.
 - 2.2 DARAY's only obligation under this warranty is the provision of the service as set out above.
 - 2.3 All products are returned to DARAY at the customer's cost and risk. Products to be returned should be adequately packed. For the address to send returns to please visit www.daray.co.uk
3. DARAY's arrangements for providing service provided under this warranty may include the use of sub-contractors.
4. This warranty does not cover damage or defects in the Product caused by or resulting from:
 - Wilful neglect or negligence by anyone other than DARAY;
 - Improper use, storage or handling of the product;
 - Use of non-DARAY approved parts (such as replacement lamps) not compatible with the Product;
 - Fire, accident or disaster;
 - Use of non-DARAY modifications other than in accordance with DARAY's instructions;Attachment of fittings and accessories not approved by DARAY;
Repairs, modifications carried out by service personnel not approved by DARAY;
 - Damage caused by chemical corrosion from cleaning agents not approved by DARAY.
 - Failure to use or install the product in accordance with the manufacturer's instructions.
5. Nothing in this warranty shall have the effect of restricting or excluding the liability of DARAY in respect of:
 - a) Death and personal injury caused by the negligence of DARAY, or for fraud;
 - b) Under the Consumer Protection Act 1987 to a person who has suffered damage caused by a defective product or to a dependant or relative of such a person;
 - c) Direct damage to your property caused by the proven negligence of DARAY.
6. This agreement does not give any rights other than those expressly set out above and in particular, DARAY will not be responsible for any loss of income, profits or contracts or any direct or indirect consequential loss, damage caused to or suffered by the purchaser as a direct result of this agreement.
7. This warranty is offered (subject to these terms and conditions) in addition to, and does not affect your statutory rights.
8. DARAY may disclose your details and other personal information to companies within the DARAY group including any subsidiary company or sub contractor of DARAY for the purposes of performing our obligations hereunder.
9. You must not resell outside the UK any products supplied by DARAY and covered by the Export of Goods (Control) Order 1992 (or any law that replaces it) without obtaining all necessary licences. You also agree not to sell the product in the UK if you know or think that the person buying the product intends to export it without getting the necessary licences. You agree to impose similar conditions to these on anyone you sell the product to.
10. These conditions shall in all respect be governed and construed in accordance with English law and the exclusive jurisdiction of the English courts.

DARAY[®]

WARRANTY REGISTRATION
TO VALIDATE YOUR WARRANTY
PLEASE COMPLETE IN BLOCK CAPITALS
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DATE OF PURCHASE:

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