Frame-mount LED Spots

Safety notes

- The electrical connection must be carried out by qualified electricians only. Make sure that the circuit is de-energized before connecting.
- Only use original parts from the manufacturer for maintenance and repair.
- The manufacturer accepts no liability for damage caused by improper use or extreme external influences. These are for example:
- **Mistakes during installation:**
  - mechanical modifications to the luminaire body and the potting compound (e.g. by drilling or grinding)
  - excessive mechanical stress, e.g. due to bending or squeezing
  - overloading due to an excessive LED current
  - heat accumulation due to thermally insulated installation
- **Environmental and natural influences:**
  - overheating due to excessive ambient temperatures
  - chemical influences from the environment (e.g. sulphur)
  - overvoltage due to lightning

Keep these instructions with the inspection documentation of the system.

Intended use

- The ***hansen*** Frame-mount LED Spots are components parts, i.e. electro-technical components intended to be combined by the user with other components into an electrical device to form a final product in accordance with CE/VDE regulations or the product liability act respectively.
- The spots are designed for the internal illumination of light boxes and larger-volume illuminated bodies/channel letters used for advertising and architectural lighting purposes, i.e. the spots may only be operated inside protective enclosures.
- The spots may only be operated with the appropriate ***hansen*** constant-current converters as power supply.

Frame-mount LED Spots and converter

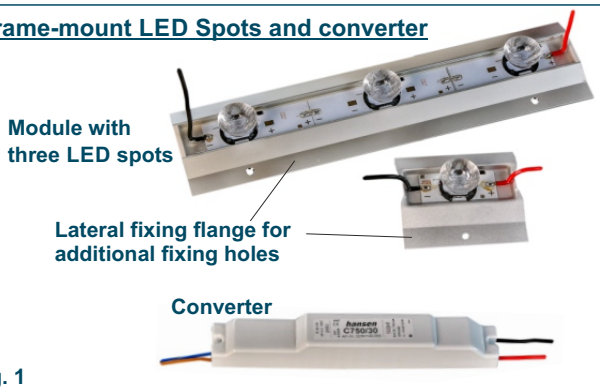

Fig. 1

Application example

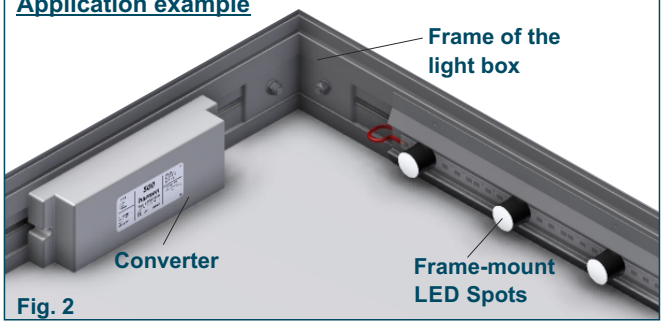

Fig. 2

Unpacking and checking the contents

The packaging must be opened in such a way that the contents cannot be damaged. Particular care must be taken when using sharp tools. After unpacking, immediately check the contents for damage and compliance with the delivery note. Any defects or deficiencies must be notified to us immediately.

Planning and preparing the light box

- The Frame-mount LED Spots are designed to be installed on the inside of the light box frame with the LEDs facing towards the opposite frame side, shining into the box parallel to the rear panel (see fig. 2).
- All internal surfaces, including possible internals, should have a highly diffuse reflective (i.e. matt white) surface.
- The minimum depth of the light box is 120 mm, and a smooth rear panel unobstructed by any cross-members or braces is required. In case of very flat boxes, the illumination result should be tested in advance.
- **The following aspects must be observed to ensure a bright and uniform illumination:**
  - The LEDs should be installed on opposite frame sides.
  - A flat light box (< 120 mm) requires a smaller LEDs spacing (e.g. 80 mm).
  - The installation instructions for the converters must be observed.
  - The converters can be installed inside the light box. This is usually done by fixing them to the two frame sides carrying no LEDs (see figure 2).
  - Alternatively, the converters can be installed outside the light box taking into account the relevant installation regulations.
- Light boxes that are to be installed outside dry rooms must be provided with a sufficient number of water drainage holes at the bottom with a minimum diameter of 7 mm to allow water collecting inside the box to drain off easily. Any stagnant moisture in the box must be avoided.
- The modules must not be treated mechanically, and the size of the aluminium profile (heat sink) must not be reduced. The light box must be dimensioned in such a way that the modules can be installed without modifications.
- If additional fixing holes are required, these must be drilled into the lateral fixing flange of the LED Spots (see fig. 1). No holes must be drilled into the potting compound.

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Frame-mount LED Spots

Mechanical installation

- The Frame-mount LED Spots must be securely fixed and must not be subjected to any mechanical stresses (e.g. tension, pressure, shear, bending). This particularly applies to the connecting cables. Shortening the modules is not permitted as this will damage the insulation and void the warranty. The Frame-mount LED Spots are not suitable as support or fixture for other components. Proper use in accordance with the intended use requires the potting compound to remain undamaged.
- The individual modules can be attached to the frame by screwing, riveting or gluing.
- Glued joints should be made with adhesives curing by chemical reaction. Adhesive joints or hot-melt adhesives are not durable enough. In addition, hot-melt adhesives can damage the LEDs by heating up the module.
- The orientation of the LED modules relative to the light box is critical depending on the lens used with the LEDs. Any bending of the sheet metal or slightly slanted installation will strongly affect the illumination. Therefore, make sure that all modules are evenly aligned.
- The aluminium profile serves two purposes:
  - It ensures good cooling of the LEDs.
  - It serves as a rigid mounting profile for a screwed or glued connection.

Commissioning

- The Frame-mount LED Spots must be installed by a qualified electrician.
- The individual modules must be connected to a constant-current power supply in an unbranched series connection. The maximum permitted number of LEDs per electric circuit as specified on the converter must be observed.
- The described series connection may only be installed in accordance with the SELV (safety extra-low voltage) regulations if the converter C750/30 is used. When using the converters C750/85D or C750/140D, the installation of the modules must be carried out in accordance with IEC HD384 or the EN 60364 series of standards, i.e. all components used must be dimensioned for the maximum open-circuit output voltage of the converters that may occur under fault conditions.
- The maximum operating current is 700 mA. The maximum number of LEDs to be used with the converters must be observed (see type label). Overloading the LEDs and the converters is not permitted.
- The power supply must provide a constant operating current at a variable output voltage. Connecting the Frame-mount LED Spots to conventional 12 V or 24 V constant-voltage power supplies is not permitted and may destroy the LEDs.
- Suitable **hansen** converters for the Frame-mount LED Spots are: C700/30, C700/85D and C700/150D

Advice for a safe and trouble-free operation

- The maximum number of LEDs specified for the respective converter must not be exceeded.
- The LEDs must not be operated with a current higher than the specified rated current.
- Individual modules must only be connected with cables approved for the maximum open-circuit voltage of the converter used.
- The electric circuit must not be interrupted while the system is operational.
- For the installation of the LED converters please refer to the respective installation instructions.

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