FAKRO light tunnels are designed to bring natural light to every part of a property. The light tunnel makes it possible to illuminate all rooms in the building, even those which cannot be fitted with roof windows or vertical windows. Dimly lit interiors such as bathrooms, dressing rooms, corridors, staircases or basements can be particularly uncomfortable to use. The light tunnel, enhancing the user’s comfort and saves energy.

The amount of light which enters the room through the light tunnels depends on the light intensity outside the building. The more light that illuminates the dome of the light tunnel, the more light is conveyed into the building interior. The diagram below illustrates the full amount of daylight (lm) depending on the month and cloudiness measured at the light tunnel dome.
The amount of light entering the room is dependent on the location of the dome. When planning the installation of the light tunnel, the following elements should be taken into account:

- Place the dome on a south facing roof which is the most illuminated part of the roof and avoid shady places.
- Locate the light transmitting tube in such a way that it travels the shortest possible distance between roof and ceiling.
- Install the light tunnel to ensure the best possible tension (light tunnel with flexible tube).
A source of natural light should be available in any living space. Unfortunately, there are interiors in which the use of vertical or roof windows is not feasible. Rooms devoid of daylight are dark and uncomfortable. To ensure illumination in such places, installing a light tunnel will channel natural light to the centre. Light tunnels can constitute the main or additional light source in any room.

The light tunnel carries daylight via the light transmitting tube. Sunlight is reflected from the walls of the highly reflective tube and is directed downwards to the diffuser. The diffuser which is fitted in the ceiling evenly distributes natural light, illuminating the room.

Depending on the user’s requirements, colour of walls (possible diffusion and reflection of the light) and furniture placement - this is a basic scheme for light tunnel location in a room with a window. With two different sources of daylight, corner areas are not of great importance in this configuration and are pretty well illuminated. The placement of a light tunnel too close to a wall opposite to a window may diminish the overall light in the middle zone.

The same room without windows and with an asymmetrical light tunnel placement can only be justified in order to secure better illumination of a particular zone (e.g. a computer desk). In other instances this positioning of the light tunnel is disadvantageous.

A simplified light distribution below the light tunnel’s diffuser in the middle of the room without windows.
1. Flat light tunnels:
   Flat light tunnels have elements which are mounted low in the roof and do not protrude beyond its structure and go perfectly well with a uniform roof surface:

   **SR_ light tunnel** – with rigid light transmitting tube and integrated flashing.

   It is also available in **SR_-L** version which illuminates with natural light the space directly below the installation of light tunnel’s outer element e.g. attic or loft.

   **SF_ light tunnel** – with flexible light transmitting tube and integrated flashing. It is also available in **SF_-L** version with illumination of the space directly below the installation of light tunnel’s outer element e.g. attic or loft.

2. Light tunnels with dome:
   The **SRT** light tunnel with dome and rigid light transmitting tube. An appropriate flashing must be chosen for the light tunnel. It is also possible to install the **SLO** light kit.

   The **SLT** light tunnel with the dome and flexible light transmitting tube. An appropriate flashing must be chosen for the light tunnel. It is also possible to install the **SLO** light kit.

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<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>SR_</th>
<th>SR_-L</th>
<th>SF_</th>
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<th>SRT</th>
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<td>FLAT</td>
<td>FLAT WITH ILLUMINATION</td>
<td>WITH THE DOME</td>
<td>WITH THE DOME</td>
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<td>RIGID</td>
<td>FLEXIBLE</td>
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<td>RIGID</td>
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</table>
**FLAT LIGHT TUNNEL** **WITH RIGID LIGHT TRANSMITTING TUBE:**

**SR_** with rigid light transmitting tube.

**SR_-L** with rigid light transmitting tube and illumination of the loft with natural light. The light tunnel fitted in the ceiling ensures the comfortable use of the room.

Features of the new light tunnel design:
- Approximately 10% more U heat transfer coefficient when compared to a version with a dome.
- Integrated flashing – for faster installation of the light tunnel.

The **SR_** light tunnel consists of: roofing element, three section light transmitting tube - **SRM 61cm**, **SRK elbow**, ceiling frame, prismatic diffuser and installation kit. The total length of sections connected in a straight line is 2.1m (**SR_ 550 – 1.8m**).

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**ROOFING ELEMENT**

This consists of an aluminium frame into which 4mm thick toughened glass is bonded. The light transmitting tube is fitted to the inside profile of the frame. The roofing element is made of aluminium sheet metal or special organic glass (L – version with additional illumination of the loft) and is integrated with the flashing. The entire structure is finished in grey-brown RAL 7022 which matches perfectly all standard colours of roof covering materials.

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**CEILING FRAME**

The new ceiling frame is made of organic glass and is equipped with a built-in light diffusing element. The cover is manufactured of high-impact polystyrene in a white opaque colour. Ceiling elements of flat light tunnels are more rounded in comparison to light tunnels with a dome.

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**RIGID LIGHT TRANSMITTING TUBE**

The light transmitting tube is made of aluminium, covered with a highly reflective silver based layer, characterized by a high efficiency light reflective factor of over 98% (compared to a new mirror reflective factor of 90-95%). Minimal light transmittance loss enables **SR_** light tunnels with a tube length of up to 12m to be specified. When installing the light transmitting tube, there is no need to cut to size the sections as the tube design is telescopic. Simply push one section deeper inside the other in order to attain the proper tube length.

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**ELBOW**

The **SRK elbow** changes the angle of the light transmitting tube in the range of 0–65°. For the **SR_** and **SR_-L 550** light tunnel, the **SRK elbow** is only available as an option.

Installation pitch: 15-60°

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**DIMENSIONS (mm)**

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<tr>
<th>Diameter</th>
<th>250</th>
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<td><strong>SR_</strong></td>
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* For the **SR_ 550** and **SR_-L 550** light tunnel, the **SRK elbow** available only as an option.
This consists of an aluminium frame into which 4mm thick toughened glass is bonded. The light transmitting tube is fitted to the inside profile of the frame. The roofing element is made of aluminium sheet metal or special organic glass (L – version with additional illumination of the loft) and is integrated with the flashing. The entire structure is finished in grey-brown RAL 7022 which matches perfectly all standard colours of roof covering materials.

Features of the new light tunnel design:
- Approximately 10% more U heat transfer coefficient when compared to a version with a dome.
- Integrated flashing – for faster installation of the light tunnel.

The light tunnel consists of: roofing element, flexible light transmitting tube 2.1m long, ceiling frame, prismatic diffuser and installation kit.

**SF** with flexible light transmitting tube

**SF**-L with flexible light transmitting tube and illumination of the loft with natural light. The light tunnel fitted in the ceiling ensures comfortable use of the room.

**CEILING FRAME**

The new ceiling frame is made of organic glass and is equipped with a built-in light diffusing element. The cover is manufactured of high-impact polystyrene in a white opaque colour. Ceiling elements of flat light tunnels are more rounded in comparison to light tunnels with a dome.

**FLEXIBLE LIGHT TRANSMITTING TUBE**

The light transmitting tube is made of metallised polyester, additionally reinforced with metal wire. This design produces a robust and flexible light transmitting tube which is ideal for installation over short distances in rooms with structural obstacles that have to be bypassed. The advised maximum flexible tube length is 4m for the 350mm diameter tube and 6m for the 550mm diameter tube.

**Installation pitch:** 15-60°
The dome is made of a polycarbonate material which has a high coefficient of light transmittance and is robust to resist mechanical damage. The shape of the dome allows for easy cleaning. The low electrostatic activity of the dome’s surface ensures dust adheres lightly to its surface only and consequently rain quickly washes the dirt away. The dome’s shape also assists in the easy removal of fresh and heavy snow.

The light transmitting tube is made of aluminium, covered with a highly reflective silver based layer, characterized by a high efficiency light reflective factor of over 98% (compared to a new mirror reflective factor of 90-95%). Minimal light transmittance loss enables SRT light tunnels with a tube length of up to 12m to be specified. When installing the light transmitting tube, there is no need to cut to size the sections as the tube design is telescopic. Simply push one section deeper inside the other in order to attain the proper tube length.

The SRK elbow changes the angle of the light transmitting tube in the range of 0-65°. For the SRT 550 light tunnels, the SRK elbow is only available as an option.

Flashing is used to ensure correct light tunnel installation in the roof slope. The flashing collar is equipped with drip openings which can drain away potential condensate outside the light tunnel. In the middle of the flashing there is a reflective ring – the first element reflecting the light which enters into the light tunnel via the dome.

The white ceiling frame and prismatic diffuser are the only elements visible in the ceiling once the light tunnel is installed. The diffuser spreads light evenly throughout the room. It consists of transparent and prismatic diffusers, resistant to UV. Both diffusers are placed inside the unit which combines them into one entity. There is an air chamber between diffusers which fulfils the role of insulation between the room interior and light transmitting tube. It minimises the level of condensation inside the light transmitting tube.


* For the SRT 550 light tunnel, the SRK elbow is only available as an option.
The SLT light tunnel consists of: dome, flexible light transmitting tube 2.1m long, ceiling frame, prismatic diffuser and installation kit.

**DOME**
The dome is made of a polycarbonate material which has a high co-efficient of light transmittance and is robust to resist mechanical damage. The shape of the dome allows for easy cleaning. The low electrostatic activity of the dome’s surface ensures dust adheres lightly to its surface only and consequently rain quickly washes the dirt away. The dome’s shape also assists in the easy removal of fresh and heavy snow.

**FLEXIBLE LIGHT TRANSMITTING TUBE**
The light transmitting tube is made of metallised polyester, additionally reinforced with metal wire. This design produces a robust and flexible light transmitting tube which is ideal for installation over short distances in rooms with structural obstacles that have to be bypassed. The advised maximum flexible tube length is 4m for the 350mm diameter tube and 6m for the 550mm diameter tube.

**FLASHING**
Flashing is used to ensure correct light tunnel installation in the roof slope. The flashing collar is equipped with drip openings which can drain away potential condensate outside the light tunnel. In the middle of the flashing there is a reflective ring – the first element reflecting the light which enters into the light tunnel via the dome.

**CEILING FRAME WITH DIFFUSER**
The white ceiling frame and prismatic diffuser are the only elements visible in the ceiling once the light tunnel is installed. The diffuser spreads light evenly throughout the room. It consists of transparent and prismatic diffusers, resistant to UV. Both diffusers are placed inside the unit which combines them into one entity. There is an air chamber between diffusers which fulfils the role of insulation between the room interior and light transmitting tube. It minimises the level of condensation inside the light transmitting tube.

**FLASHINGS FOR LIGHT TUNNELS WITH DOME**

**SLS**

The **SLS** flashing is suitable for flat roof coverings up to 10mm (2 layers x 5mm) thickness e.g. roofing felt, shingles, slates.

**SLZ**

The **SLZ** flashing is applied to roof coverings with a profile depth of up to 45mm such as tiles and profile metal sheeting.

**SLH**

The **SLH** flashing is used for roof coverings with a profile depth of up to 90mm e.g. roof tile, high profile metal sheeting.

**ACCESSORIES FOR LIGHT TUNNELS**

**SLM**

**SLM** flexible light transmitting tube extension kit. The kit includes: connecting ring, light transmitting tube – 120cm section, adhesive tape. It is possible to order the light transmitting tube in other lengths, but they have to be calculated as units of 30cm (e.g. 60cm, 90cm, 150cm).

**SRM**

The **SRM** rigid light transmitting tube extension element with a length of 61cm.

**SRK**

The **SRK** elbow changes the angle of light transmitting tube in the range of 0-65°. For the **SRM** 550 light tunnel (with rigid tube), the **SRK** elbow is only available as an option.

**SLC**

**SLC** hanger is used when an overall light transmitting tube is longer than 5m. Hangers are used in order to take part of the tube’s weight and to prevent it from tearing away from the light tunnel flashing.

**SLO**

**SLO** light kit is applied as an alternative source of illumination at night. The light kit is fitted inside the light tunnel.

**FLAT ROOF SYSTEM FOR LIGHT TUNNELS WITH THE DOME**

**SRC**

**SRC** hanger is used when rigid light transmitting tube length exceeds 4m. It takes part of the tube’s weight.

**SLP**

Light tunnels are very often used in flat roofs. For their proper installation, the set containing the **SFP** insulated base and **SLP** flashing should be used.

**SFP**

The **SFP** base is made of galvanized steel and insulated inside with styrofoam.
**FLAT LIGHT TUNNELS**

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**FLAT LIGHT TUNNELS with illumination function**

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*For the SR_ 550, SR_-L 550 and SRT 550 light tunnel, the SRK elbow is only available as an option.*