

An introduction to Lightway® :

Lightway® are one of the oldest and most innovative Sun Tunnel / Tubular Skylight / Sun Pipe manufacturers in the World. We have a 27-year history of product development and industry recognition for producing a premium quality and high durability range of Sun Tunnels and associated daylight delivery devices, to suit a wide range of applications, from large scale industrial, through to residential projects. Our Sun Tunnels are sold in more than 50 countries all over the world. Our USP's include :

- ☐ Crystal **Glass** daylight harvesting Dome technology, which ensures, durability, high daylight capture and sustainability, vs other brands which use plastic domes.
- ☐ Facilitating Net Zero, Carbon Neutral and all Green Build targets and goals, by maximizing use of daylight into homes, schools, offices, factories and retail spaces.
- ☐ Thermal and energy saving efficiency, with our THERMO systems, which feature our **Blue Performance** insulation technology.

Specifications

Our Sun Tunnels are manufactured in the following diameter sizes :

LW 200 Crystal HP, which has a mirror tube diameter of 152mm (The World's smallest diameter Sun Tunnel)

Maximum recommended mirror tube length / application length is 2 - 3 meters.

Requires a structural roof or wall opening of only 155mm in diameter.

This size Sun Tunnel is ideal for small bathrooms / toilet cubicles, pantries, small storerooms, and it is very popular, due to it's small and unobtrusive size, to employ as a Facade system.

LW 300 Crystal HP, which has a mirror tube diameter of 220mm

Maximum recommended mirror tube length / application length is 4 - 6 meters.

Requires a structural roof opening of only 250mm diameter.

This size Sun Tunnel is ideal for Bathrooms, Small Office cabins, small stairwells, basement rooms, villa dressing rooms.

LW 400 Crystal HP, which has a mirror tube diameter of 320mm (often voted the UK's best performing Sun Tunnel!)

Maximum recommended mirror tube length / application length is 9 - 15 meters.

Requires a structural roof opening of only 350mm diameter.

This size Sun Tunnel is ideal for Large Bathrooms, Office cabins, stairwells, basement rooms, Corridors and Hallways.

Can be used over multiple floors with good results!

LW 600 Crystal HP, which has a mirror tube diameter of 520mm

Maximum recommended tube length / application length of 15 - 25 meters.

Requires a structural roof opening of 550mm diameter.

This size Sun Tunnel is ideal for Double Height and large volume spaces, such as Warehouses, Factories and large offices and hallways. Is often used in rooms / areas with ceiling height over 5 meters.

Can be used over multiple floor levels with good results!

Innovative and easy to install : Side Wall Daylight Delivery Solutions by Lightway® :

In addition to our "traditional" roof mounted Sun Tunnels, Lightway® also has a unique range of side wall mounted / facade fixed Sun Tunnels, which enable our end users and customers to bring in daylight from the side wall. This is of particular importance in situations where roof mounted Sun Tunnels are not feasible to use or are in some instances cost prohibitive due to the length of tubing outstretching a customer's budget.

Our Side Wall Solutions are currently one of most popular and fastest selling products in the World.

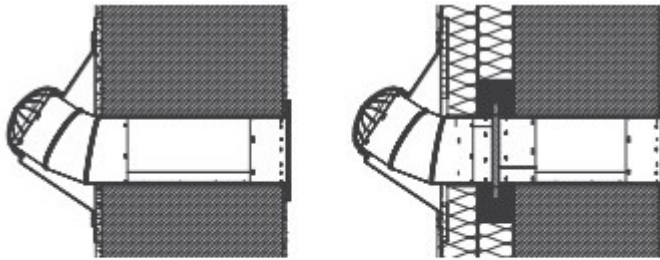
Lightway® F- Series Wall / Facade Mounted Sun Tunnels :

F - 200 (same as LW200 above but wall mounted)

F - 300 (same as LW300 above but wall mounted)

F - 400 (same as LW400 above but wall mounted)

F - 600 (same as LW600 above but wall mounted)



Types of Lightway Crystal F series

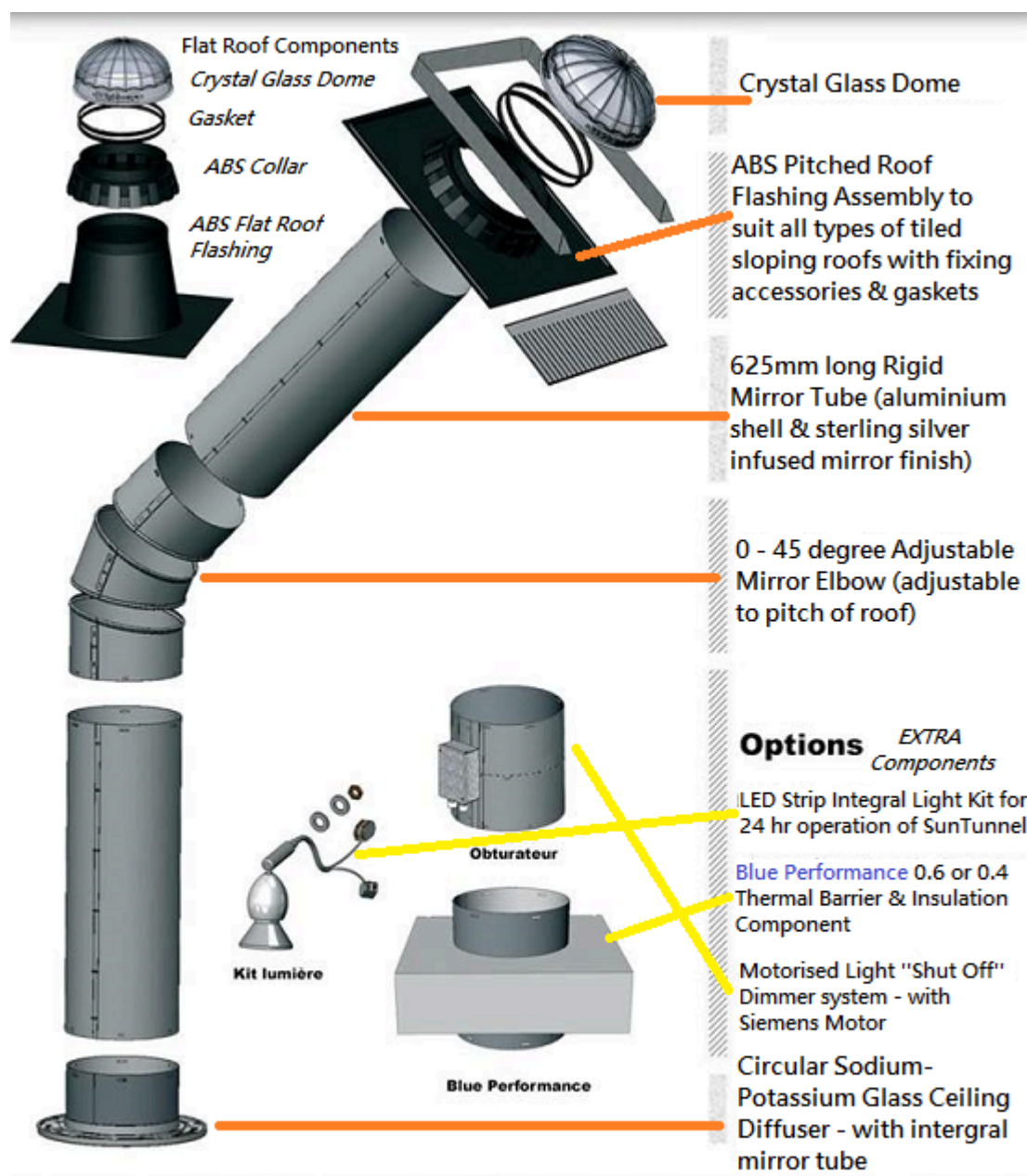
- Lightway Crystal F 200 HP
- Lightway Crystal F 300 HP
- Lightway Crystal F 400 HP
- Lightway Crystal F 600 HP





Crystal Glass Dome Range :

All our Sun Tunnels, have 3 key component parts :

- ☐ **Glass Light Collecting Dome** - which harvests daylight from the roof or facade (Crystal Glass is our preferred component material)
- ☐ **Rigid Aluminium Mirror Tubing** - which delivers plentiful daylight to interior spaces.
- ☐ **Internal Glass Diffusers**- which distribute and diffuse daylight from ceiling mountings, or wall mountings into the space or room.



 Pitched Roof Crystal Glass Sun Tunnel
 Components Identity Sketch

Glass Dome Technology Overview :



Featuring our Czech Republic manufactured hemispherical **Crystal Glass** domes (many of which are handmade in Prague) The domes utilise Intelligent Ray Catcher Glass technology (IRCG) The technology of Intelligent Ray Catcher Glass is based on the use of unique sodium potassium glass, anti-reflective surface and a computer designed shape and structure. The unique ability to catch indirect sun radiation, on overcast days and direct the sunray flow into the tube, guarantees amazing performance under all light conditions, including when the sun is at a low angle in the sky and also when there are cloudy / overcast conditions. In comparison with plastic materials, such as polycarbonate and acrylic, that are used by most of our competitors, our Glass Domes have a much longer lifetime period, colour stability, aggressive atmosphere resistance, self-cleaning ability as well as fire resistance.



Mirror Tubing Overview :



Lightway® only manufactures rigid aluminium shell and high-performance mirror tubing. Unlike some competitive brands, who use a flexible mirror tube, we have never manufacture flexible tubing. We consider this to be inferior in terms of light delivery performance (a significant amount of light "bounces back up the tube") and also flexible tubing can deteriorate and delaminate when compared to rigid tubing.

Our mirror tubing is infused with real sterling silver and has a reflectance of 99.8%. The tubing is manufactured as standard in 625mm lengths and is easy to assemble and install without any compromise to the integrity of the tube. Our tubing is not subject to oxidation or discoloration, and we guarantee its integrity and performance for 25 years.

Furthermore, the process of PVD (Physical Vapour Deposition) in vacuum. The result of the unique technology of PVD (Physical Vapour Deposition) process in a vacuum, during which super reflective and reflection enhancing layers are applied continuously to the base material, is a homogenous, super reflective, flexible, mechanical and chemical resistant surface.



Many types and brands of tubular skylights / sun tunnels, use the technology of sticking a reflective foil on an aluminium sheet metal because it is a cheaper option, which brings a high risk of the loss of the adhesion and also damage to the mirror reflective surface from UV exposure.

Diffuser Technology Overview :



Our light emitting diffusers, are also manufactured in glass, and not plastics. We use an infused sodium potassium glass for our diffusers, which not only again ensures that our diffusers do not discolour and crack from UV exposure, as is often the case with other brands, who once again use plastics, but also the nature of glass used by us ensures that daylight is not reflected back up the tube and hence, our diffusers provide 15% more daylight delivery than plastic diffusers.

Glass diffusers also contribute to the "sparkle and quality" of daylight delivered and have a more "luxury feel" than plastic competitors.

What are the benefits of using Lightway® Crystal SunTunnels?

- ☐ Use of our Sun Tunnels in residential settings greatly enhances the ambiance of any property or building, whatever its use, by providing natural light to areas, where a dependency on artificial light can result in a lack of freshness and contribute to SAD (Seasonal Affective Disorder) syndrome.
- ☐ For commercial applications, such as supermarkets, warehouses and offices, Sun Tunnels by Lightway® brighten up interior spaces, contributing to employee wellbeing and improving productivity in many instances.
- ☐ In School and University settings, it is well documented that students obtain better grades and have superior concentration in an academic environment, that has a prevalence of natural light!
- ☐ **Specific Health benefits** : Our Sun Tunnels deliver "heat filtered daylight" which assist with improving exposure to the health benefits of sunlight, in both the workplace and also in residential and community facility settings.
- ☐ **Safety on Roof benefits** : When our Sun Tunnels are used in metal roof applications, such as warehouses and sheds, the systems are clearly visible on the roof, as they are raised with an up-stand / flashing. They therefore are not vulnerable to accidents, such as is the case with translucent sheets or flush mounted skylights, which have been recorded to have caused accidents, where maintenance workers have accidentally walked over these types of daylight systems and they have cracked and broken, resulting in loss of life or injury.
- ☐ **Performance Benefits** : As our Sun Tunnels provide approximately 3 - 4 times more daylight than the same diameter size traditional skylight, this means that smaller roof and structural openings can be created in the structure, to fit and accommodate our Sun Tunnels, when compared to use of skylights / translucent sheets, thereby preserving the thermal integrity of the building and resulting in a reduced air conditioning load and power consumption.

Energy Savings

- ☐ Where our Sun Tunnels are used in large volume spaces, such as warehouses, factories and large office areas, and replace high bay fittings during the day, there can be significant energy savings, as electrical lighting can be switched off during daylight hours and our Sun Tunnels are an effective replacement for use of electrical lighting systems.
- ☐ The best results with all applications of our products, are where an intelligent lighting system is employed, and our systems are combined with use of other glazing products as well as electrical lighting.
- ☐ We offer for our Sun Tunnels a hybrid product, which enables our Sun Tunnels to be fitted with integral LED light kits, that result in a 24 operation of the system.
- ☐ Payback periods where our Sun Tunnels are used and replace a large quantity of electrical light and high spec light fittings, can be as little as 2-3 years!

Sustainability & Carbon Neutral Goals

- ☐ As our Sun Tunnels reduce use of electrical power in almost all installations, we are of course able to help our customers meet with LEED Green building regulation objectives and also to help businesses and governmental organisations in all sectors, to achieve their carbon neutral goals.

- ☐ We are currently working with foodstuff manufacturers in the UK and other corporate clients in order to reach such objectives and use of our Sun Tunnels is a key strategy in meeting sustainable building demands and objectives.
- ☐ Our Sun Tunnels are also frequently incorporated into **Green roof** projects around the world.

Lightway® Customer References :

In addition to more than 50,000 residential installations, our Global Corporate clients include :

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| ☀️ HILTI (Offices) | ☀️ BMW (Showrooms and offices) | ☀️ Heineken (Greece) (Factory) |
| ☀️ Kaufland (Retail Stores and Offices) | ☀️ TESCO (Retail Stores and Warehousing Hub) | ☀️ IKEA (Stores in Europe & Logistics) |
| ☀️ METRO Supermarkets (France) | ☀️ Skoda (Showrooms and Offices in Europe) | ☀️ BOSCH (Offices) |
| ☀️ Lidl (Retail Stores) | ☀️ Unilever (Offices) | ☀️ Lego (Offices) |
| ☀️ Philip Morris (Warehousing) | ☀️ SIEMENS (Offices) | ☀️ McDonald's (Restaurants - stand-alone) |
| ☀️ AMAZON (Italy) (Offices & Stores) | ☀️ HENKEL (Offices and warehouse facilities) | ☀️ Mercedes Benz (Offices & showrooms) |
| ☀️ DB SCHENKER (offices) | ☀️ BTL Pharmaceuticals Industries (Bulgaria) | ☀️ BILLA Grocery / Supermarkets |
| ☀️ Panasonic (Offices in Europe) | ☀️ BNP Paribas (Offices) | ☀️ Hyundai (Production Areas) |
| ☀️ Caterpillar - Europe (Offices) | ☀️ USA Embassy in London | ☀️ Dyson UK (offices) |

