



Founded in 1940, Helios Quartz Group has been a family-owned company with two production plants in Italy and Switzerland combined with offices in the USA, South America, and Asia to become a major international supplier for Quartz Glass processing and the manufacturing of IR & UV Lamps. Helios Quartz also produces Specialized Equipment for Industrial, Scientific, and Medical applications.

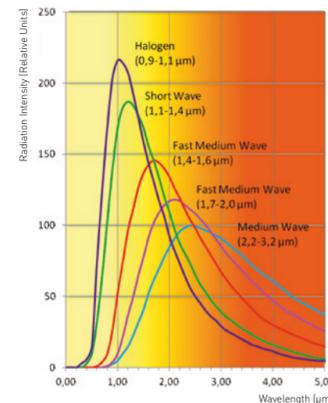
Helios Quartz is one of the leading companies worldwide in the glass market for the supplying of IR quartz emitters in short, medium and fast medium wavelength; float glass tin side detectors both in manual and automatic option; UV lamps and apparatus for the polymerization (curing) of glues, inks, varnishes, enamels and resins that react with the UV light.

## INFRARED QUARTZ EMITTERS

Infrared emitters heats up the material through radiation, therefore the process happens in a direct way and with high efficacy; according to the material to be heated it is possible to choose different IR wavelengths in order to reach the maximum energy propagation and obtain the heating in a faster and more efficient way, furthermore thanks to their short on/off response time they allow very precise regulations that can be adjusted according to the different needs of the materials involved in the process.

The picture shows all the radiation intensity curves for halogen, short wave, medium and fast medium wave emitters.

To better convey and focus on the material all the energy emitted by the lamp, it is possible to apply a special reflector directly on the quartz tube; Helios Italquartz offers the possibility to apply a gold, white or ruby reflector.



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**Helios Quartz Group SA**  
**Production Site / R&D and Technical Center**  
 Via Roncaglia 20 6883  
 Novazzano - Svizzera  
 +41 (0) 919233555/6  
 +41 (0) 919233557  
 swiss@heliosquartz.com  
 www.heliosquartz.com



**Helios Quartz America Inc.**  
**Distributor – Logistic and Technical center for North America region**  
 8444 W. Central Ave., # 2 Sylvania, OH 43560 USA  
 +1 (419) 882-3377  
 +1 (419) 787-8307  
 america@heliosquartz.com  
 www.heliosquartz.com



**Helios Quartz Asia Ltd.**  
**Distributor and Logistic center for Asia Pacific region**  
 Unit 208, 2nd floor  
 St. George's Building 1  
 Ice House Street, Central HONG KONG  
 +86 (132) 38830625  
 asia@heliosquartz.com  
 www.heliosquartz.com



**Helios Italquartz S.r.l.**  
**Production Site / R&D and Technical Center**  
 Via delle Industrie 103/A 20040  
 Cambiago - Milano - Italia  
 +39 02 95 34 93 18  
 +39 02 95 34 50 85  
 italy@heliosquartz.com  
 www.heliosquartz.com



**Shenyang Helios Tech. Co. Ltd**  
**Distributor and Logistic center for China Mainland region**  
 Building A, 1506 Midland Tower, No.208  
 Changjiang S.St. Huanggu District, Shenyang, China  
 +86 024-3163319  
 china@heliosquartz.com  
 www.heliosquartz.com



**Helios Quartz Turkey**  
**Commercial branch for Turkey region**  
 Mimaroba Mh. Mustafa Kemal Bulvarı.  
 Colorist A Blok. Kat 3 D.50  
 Mimaroba, Büyükçekmece  
 Istanbul  
 +90 8502281908  
 turkey@heliosquartz.com  
 www.heliosquartz.com

soluzionegroup.com

# APPLICATIONS



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## IR HALOGEN QUARTZ EMITTERS

The IR Halogen radiation is positioned in the range of 0,9 e 1,1  $\mu\text{m}$ . The Halogen radiation has a very high heating power and very fast on/off response time.

## IR SHORT WAVE QUARTZ EMITTERS

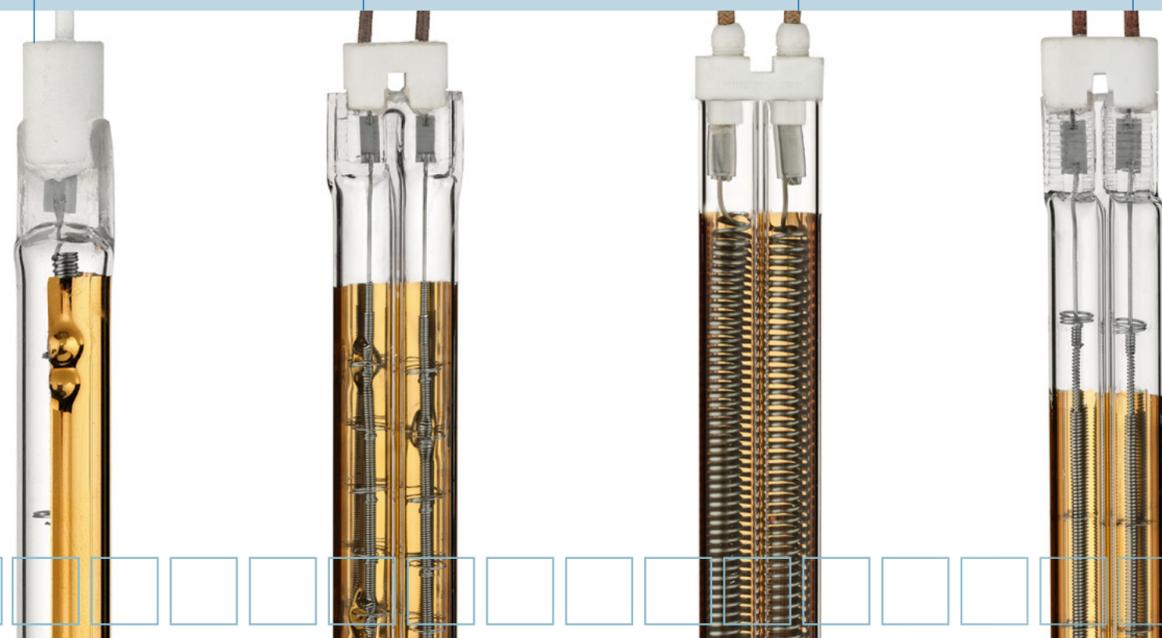
The IR Short Wave radiation is positioned in the range of 1,1 e 1,4  $\mu\text{m}$ . This emitter is characterized by high heating power and it is particularly recommended in those cases where is important to have a fast response switching on/off time. It is available in twin tube up to 6,5 meters long.

## IR FAST MEDIUM WAVE QUARTZ EMITTERS

The IR Fast Medium Wave radiation is positioned in the range of 1,4 e 1,6  $\mu\text{m}$ . This emitter is the optimal compromise when one specific application requires at the same time the IR radiation of the Medium Wave emitters and the fast response time in the switching on/off proper of the Short Wave emitters. It is available in twin tube up to 6,5 meters long.

## IR MEDIUM WAVE QUARTZ EMITTERS

The IR Medium Wave radiation is positioned in the range of 2,2 e 3,2  $\mu\text{m}$ . This emitter is particularly suitable for the fast heating of surface parts or thin thickness materials. It is available in twin tube up to 6,5 meters long.



## FLOAT GLASS TIN SIDE DETECTOR ANALYZER

The glass plates obtained by the float processes normally have got one side clean (air side) and one side covered by a tin film. When costumers need to utilize the glass plates for the silvering processes in mirror production, laminated glass production, glass serigraphy processes, glass to glass and glass to metal bonding, artistic decoration of plates it is necessary to identify the float glass air side in order to obtain a better adherence to the glass surface.

Helios Quartz developed and tested, together with the main glass producers, the tin side detector apparatus in manual and automatic option. This type of apparatus is necessary for the car windscreen production, for the household appliance glass such as traditional and microwave ovens glass, and for the low emitting glass production.

Helios Quartz apparatus are professional ones, entirely manufactured internally and for which it is guaranteed the spare part service.



Both the manual and automatic options are able to detect the tinned side of dark non-reflective glass as well as extra clear and low emitting glass.

The automatic tin side detector can be installed directly on the glass transportation line, it is positioned usually after the washing machine, anyway before the beginning of the production process; it is equipped with a free contact that can be interfaced with the line software allowing the constant production control.



## POLIMER

UV polymerization equipment is particularly useful for general polymerization process such as drying films of reactive inks, lacquers and paints; bonding glass to glass, glass to metal with reactive adhesives. it is entirely manufactured internally and it is guaranteed the spare part service.

UV polymerization equipment product range is represented by two basic instruments of 400 and 500 Watt, 230 Volt single-phase.

Our Technical Department can also design, on customer specific request, UV systems with different wavelengths up to 2,5 meter long for the polymerization of windscreen, rear window or big plates decoration.



## APPLICATIONS

### DRYING SCREEN PRINTING AND COATING CURING

In the drying screen printing processes of automotive and household appliance glasses and in the curing of decorative glass coatings it is suitable the usage of Helios Quartz products.

In particular it is useful:

- the float glass tin side detection by using the TIN DETECTOR ANALYZER, in fact if the coating or the screen printing is applied on the glass surface that was in contact with the tin, the output product will be non conform to the specifics with defects that can come out also after some time from the production.
- the usage of Infrared emitters, if compared to the traditional heating processes as hot air, ceramic rods, gas, allow the speeding up of the process, the improving the output quality and the reduction of the energy consumption because they emit a higher quantity of energy per unit surface and they have a shorter on/off response time that permit the heating only when and where is really necessary.
- the usage of UV lamps and Polymer equipment for the polymerization of inks, lacquers and paints that react with the UV light.

### LAMINATED GLASS PRODUCTION AND PROCESSING

The laminated glass is a special glass made of two or more glass plates with in between PVB layers.

In order to obtain a good laminating process it is recommended to be sure that the float glass air side surface is in contact with the PVB layer, for this reason it is advisable to check the glass with the TIN SIDE ANALYZER. Of course in case of laminated glass with more than two glass plates it is impossible to have always the air side in contact with the PVB foil.

IR Medium Wave emitters are particularly indicate for the heating of the PVB during the lamination process. Helios Quartz design its IR Medium Wave emitters

with a high performance that is especially appreciated by most of the worldwide leader companies in the production of laminations ovens.

The Fast Medium Wave emitters, thanks to their fast on/off response time, are used in the laminated glass cutting machines.

### MIRROR PRODUCTION

In the mirror production lines the IR quartz emitters are used for the glass preheating before the silvering process and after, in ovens, for the curing of the coating.

### GLASS BENDING AND FUSION

In the glass bending and glass fusion processes more and more often the IR quartz emitters are chosen as heat generator. They allow a shorter heating time therefore a considerable energy saving; they guarantee a high quality output; thanks to the homogeneous heating the glass is not affected by thermal stress; their simple installation enable an easy and fast maintenance furthermore they grant precise regulation of the temperature in the different zone of the oven.

### GLASS ANNEALING PROCESSES

After glass modeling processes, in order to avoid stress and easy breakage, it is advisable to make the glass cool down in a controlled way; for this process it is possible to use the IR quartz emitters that, thanks to their easy control, allow a smooth control of the desired temperature profile.

### VACUUM PROCESSES

IR quartz emitters produced by Helios Italquartz can be properly designed for their usage in vacuum chambers as it happens in the thin film solar cells production and during the preheating process before the coating of the low emitting glass.

