

## Lab System black.infrared

New technology - easy process validation

black.infrared stands for infrared emitters with an absolutely novel design. black.infrared combines the latest quartz glass materials with printed electronics and intelligent emitter know-how.

black.infrared technology is now available in a lab system, made for easy testing and process validation.

### Lab System black.infrared:

- tuning new processes
- suitable for customer tests
- easily integrable standard module
- special size on request

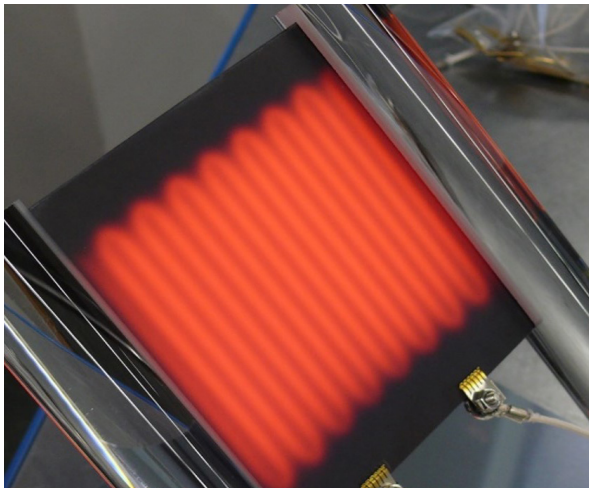
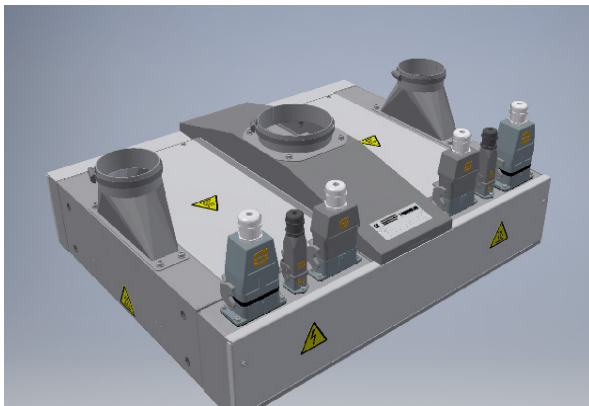
### What is black.infrared?

- black.infrared emitters are printed metallic filaments, which are located between high-purity quartz-glass
- the lower plate is made of special HBQ quartz glass, the top is protected by a layer of QRC
- infrared radiation is emitted at the highly emissive HBQ side
- the entire structure helps to direct infrared radiation very homogeneously to the product and achieve a particularly efficient heat process
- black.infrared is ideal for applications in semiconductor manufacturing or vacuum processes in photovoltaics

## Lab System BLACK.INFRARED

Standard size:	550 x 660 x 130 mm
Supply Power:	16,8 KW
Supply voltage:	400 V /230 V (Fan)
Heated area:	240 x 400 mm <sup>2</sup>
Emitter size:	40 x 400 mm <sup>2</sup>
No. of Emitter:	6 pieces
Emitter power:	2800 W
Power density:	175 KW/m <sup>2</sup>
Cooling Air inlet:	D 125 mm (1x)
Cooling air outlet:	D 90 mm (2x)
Air cooling:	2 chamber system, no cooling to the substrate
Supply fan:	radial fan extern, 230 V

Special size on request!



### Relationship distance - intensity - homogeneity

- Radiation sources lose intensity as the distance increases.
- In the case of quartz tube emitters, the homogeneity increases with increasing distance.
- The optimum working range is a compromise between intensity and homogeneity.
- black.infrared emitters are designed in such a way that a radiant surface allows the greatest possible homogeneity regardless of the distance.

### Heat processes benefit from black.infrared

Our lab system black.infrared is made to work under atmospheric conditions.

- Photovoltaics
- Semiconductor
- Glass
- Print
- Coating
- R&D, laboratories, institutes and test centres

### Energy efficiency through new combination

A black.infrared emitter combines infrared radiation in the medium-wave range at around 2.5 µm with high electrical power. This combination is so far unique.

Infrared radiation in medium wavelengths is particularly suitable for glass, plastics and most coating.

## black.infrared sets new standards

- High Power density (up to 200 kW/m<sup>2</sup>)
- Medium wave spectrum 1000 °C  
2-2.5 µm peak temp
- Outstanding infrared homogeneity
- High purity (only silicon & oxygen)
- Fast response time
- optional framework
- intelligent controls

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