

Benefits

- Customized design matches optical and geometrical target specifications
- Ports equipped with LED light sources and photodiode detectors
- Small form factor
- Accurate and uniform intensity
- Precise intensity control
- Precise predefined color temperature presets
- Automatic internal stability control
- Same time connection of multiple spheres
- RS422 interface and control software



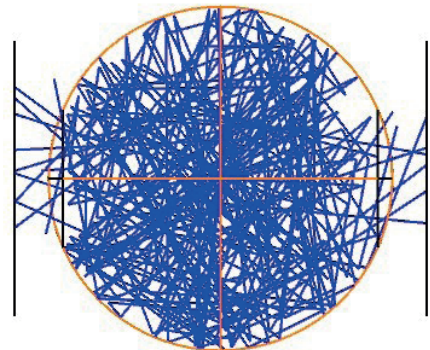
Compact integrating sphere for emitting and detecting light

The KT Mini Sphere is a uniform light source and integral intensity detector at the same time. It is based on the integrating sphere concept. Light is reflected many times from the spheres inner surface leading to uniform light distribution. With the combination of different LEDs various wavelengths or spectra with adaptable color temperatures are possible with well controlled intensity. Photodiode detectors are used for closed loop intensity control and for using the KT Mini Sphere as light detector.

With our propriety manufacturing process we can adapt the geometry of the KT Mini Sphere to virtually any shape. State-of-the-art optical design tools combined with 3D CAD tools for mechanical design are used to get the target optical performance. This makes the KT Mini Sphere the ideal choice to be used in automated test systems, where quality counts and size restrictions as well as cost efficiency are important drivers.

Module Features

- Wide range power input (12V – 24V)
- RS422 communication interface (up to 15 devices on one bus)
- Easy bus addressing with dip switches
- Precise 16bit internal linear regulated current sources for LED regulation
- Built in feedback loop with photodiode for temperature drift and aging compensation
- Photodiode for external measurement of intensity (e.g. flash detection)
- Adjustable intensity 500lx to 3000lx (5mm distance)
- Calibrated for 5200K color temperature. Other CCTs between 3500K to 5500K are available on request.
- Output area with uniform light intensity: $\varnothing 15\text{mm}$



Dimensions

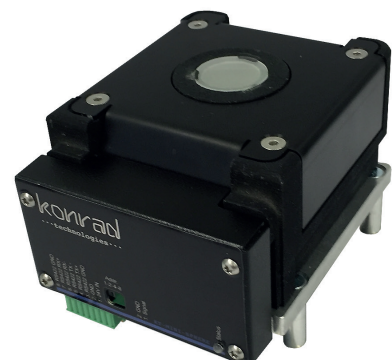
All dimensions measured without bottom mounting frame:

Length: 120 mm

Width: 90 mm

Height: 80 mm

Weight: 700 g



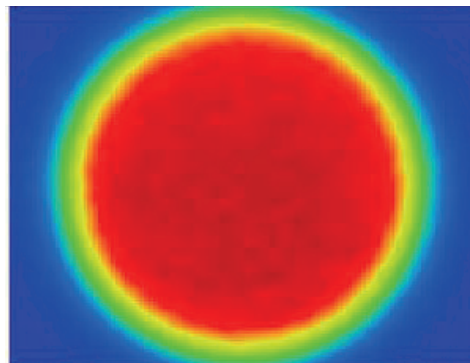
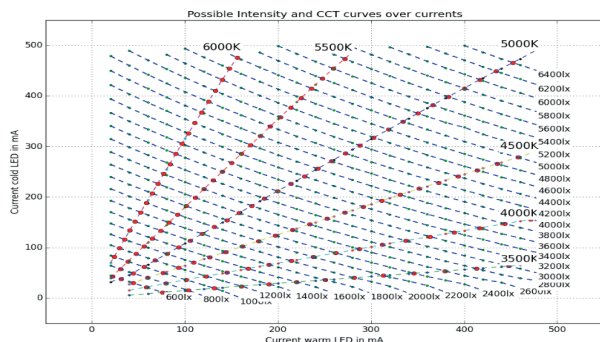
Sphere Capabilities

Uniformity

The KT-Mini-Sphere offers a very uniform intensity and correlated color temperature across the output port. This makes the device the perfect solution for image sensors tests like shading, blemish and blur detection.

Adjustable Intensity and multiple CCTs

The KT-Mini-Sphere is capable of representing light with different intensities. With our calibration and adjustment procedure we are able to allow nearly step-less dimming (16 bit resolution) and also it's possible to request the KT-Mini-Sphere calibrated for different CCTs.



Connectors

The device is equipped with two Phoenix connectors. One for Bus communication and power supply, the other one for measurement of the photodiode analog value.

8 Pin Bus and Power Connector

Pin	Signal	Description
1	24 V In	Power In
2	GND	Power Ground
3	RS422 GND	RS422 Isolated Ground
4	RS422 TX+	RS422 positive differential transmit signal.
5	RS422 TX-	RS422 negative differential transmit signal.
6	RS422 RX-	RS422 negative differential receive signal.
7	RS422 RX+	RS422 positive differential receive signal.
8	RS422 GND	RS422 Isolated Ground

2 Pin Photo Diode Connector

Pin	Signal	Description
1	Analog Out	Flash Detector Analog Out [0-5V]
2	GND	Analog Ground

Order information: G603009

Additional Informations: www.konrad-technologies.de

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