

ULAB

Ultra Large Area Blackbody

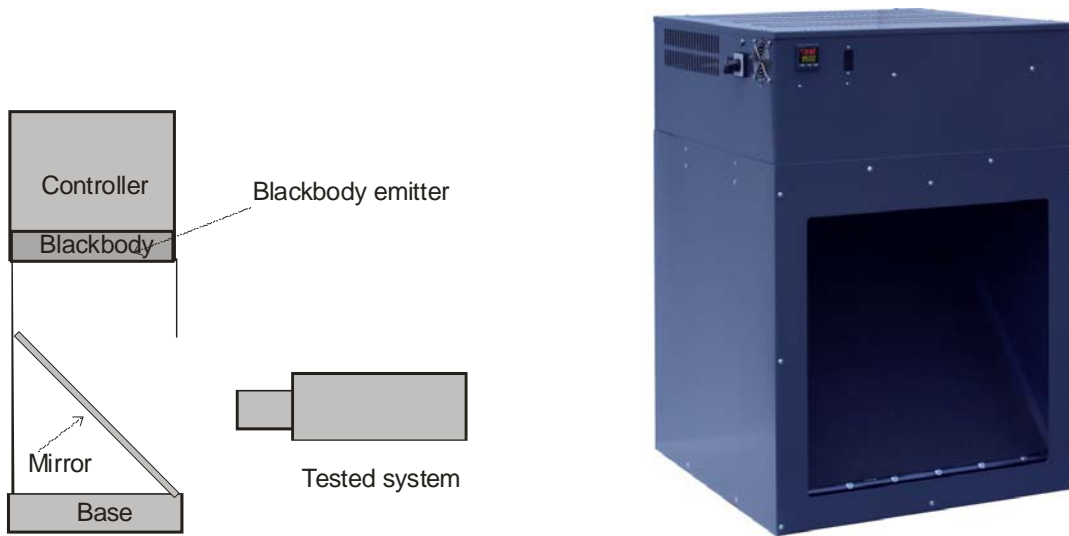


Fig.1. Block diagram and photo of the ULAB blackbody

CONCEPT. The ULAB is a medium temperature blackbody of ultra large active emitter area. The blackbody was designed for applications where ultra large sources of infrared radiation are needed. The ULAB blackbody was designed using an unique solution based on an concept of horizontal blackbody and large reflective mirror. Due to use of this concept blackbody is characterized by very good thermal uniformity if we consider its large area. At the same time the emitter of blackbody is protected from air fluctuations. Therefore the ULAB blackbody is characterized by excellent temperature stability even when used at outdoor conditions when blackbody is exposed to some wind.

SPECIFICATIONS

Parameter	Value
Emitting aperture	up to 1000x1000mm (depends on version)
Temperature range	From 50°C up to 600°C (depends on version)
Set point and resolution	0.01°C
Uniformity uncertainty	< 3°C at 300°C (for 500x500mm version) 0.96±0.01 typical version
Blackbody emissivity	≥0.99 – option Mirror reflectance≥0.97
Regulation stability	±0.1°C
Mass	45.1 kg (for 500x500mm version)
Dimensions	1000x1000x1200 mm (for 500x500mm version)
Operating temperature range	5°C to 40°C
Humidity	Up to 90% (non condensing)
Voltage	230 V (or 110V)
Power consumption	Up to 4kW (for 500x500mm version)

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FEATURES

- The largest medium temperature blackbody on the world market
- Excellent temperature stability even at outdoor conditions
- Ideal large size source of infrared radiation for demanding scientific/industrial applications

VERSIONS

ULAB blackbodies can be delivered in several different versions. The criterions used to characterize required blackbodies are listed below:

- a) Area of the blackbody emitter
- b) Maximal temperature
- c) Temperature control method
- d) Ambient conditions
- e) Type of power supply

Five digit codes are used to different available versions of ULAB blackbody. Definition of codes are shown in the table below:

	A	B	C	D	E
Code	Emitter area	Maximal temperature	Environmental conditions	Temperature control method	Power supply
1	300x300	300°C	Indoor (laboratory)	Internal keyboard and display	Single phase 230V AC
2	400x400	400°C	Outdoor conditions	Internal keyboard and display and additionally available PC control	Three phase 230V AC
3	500x500	600°C			Single phase 110V AC
4	1000x1000				Three phase 110V AC

The columns a-e present what digits are to be chosen to define precisely required version of ULAB blackbody.

Example: ULAB -31121 means ULAB blackbody of 500x500mm emitter size, of max temperature equals 300°C, to be used at indoor conditions, PC control available, and to be powered using single phase 230V AC line.

*specifications are subject to change without prior notice

CONTACT:

Tel: +48 604061817

Fax: +48 22 3987244

Email: info@inframet.com

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