CERTIFICATE OF TEST

Applicant: Festec International Co.LTD
e-space Building #505 Guro-dong ,Guro-gu, Seoul, KOREA

Device under test: Schmidt-Boelter type heat flux meter
Model No: MedTherm
Serial No:
User :

Date of calibration:

Calibration method and condition

The heat flux meter was calibrated in reference to the variable temperature blackbody with the precision aperture. The temperature of the blackbody was measured by the KRISS standard radiation thermometer. The cooling water flow rate of the DUT was controlled to be 0.25 l/min for keeping the DUT temperature at 24 ˚C. The environmental temperature was 25 °C and the relative humidity was 55 %.

Calibration Traceability

Irradiance of a blackbody with a limiting aperture is derived from Planck radiation law. The temperature of the blackbody is traceable to the KRISS the KRISS radiance temperature scale which is realized by using the copper and silver point blackbodies and the KRISS standard radiation thermometer according to the ITS-90 and maintained with a group of high stability tungsten strip lamps.

Results

The table in the next page gives the relation between the radiance temperature and the lamp current that apply at the conclusion of its calibration.

Uncertainty

The reported uncertainty is based on a relative standard uncertainty multiplied by a coverage factor k=2, providing a level of confidence of 95 %.

We certify that this certificate is based on the calibration by the measurement standards traceable to the national measurement standards being held and operated by the Korea Research Institute of Standards and Science in accordance with the provision of Article 14 of the Framework Act on the National Standards.

Calibrated by:

Bong-Hak Kim
Photometry/Radiometry Group
Division of Optical Metrology

Approved by:

Seung-Nam Park
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Test Results

Serial number	Responsivity ($mV/(kW/m^2)$)	Scale Factor ($(kW/m^2)/mV$)	Full scale output at 100 kW/m^2 (mV)**	Uncertainty (%)*
	0.208	4.809	20.8	2.5

Calibration Conditions

DUT type	Schmidt-Boelter heat flux meter
Variable temperature blackbody	Thermogage Furnace with a limiting aperture of 16 mm -diameter
Calibration temperature	2927 °C
Standard radiation thermometer	KRISS photoelectric pyrometer with 850 nm effective wavelength
DUT location	250 mm from the limiting aperture
Cooling water of DUT	Temperature: 23 °C Flow rate: 0.25 l/min

* The uncertainty is applied to the scale factors.
** The full scale output at 100 kW/m2 was calculated from the responsivity assuming linearity of the DUT flux meters.
*** The calibration results are valid only when the integrity of sensor is conserved.

<The end of certificate>