

Hukseflux sensors for meteo networks

State-of-the-art sensors and support for national observation networks

Sensors made by Hukseflux passed validation and acceptance testing for a large number of national meteorological networks. We supply sensors with the highest accuracy in every class at the most attractive price level. Not only sensors but also systems and services for calibration are offered. Hukseflux is ISO 9001:2008 certified and has a worldwide support organisation.

Introduction

Hukseflux Thermal Sensors offers a range of sensors for use in national meteorological networks.

Reference networks 2013 & 2014

- India: Centre for Wind Energy Technology (CWET), solar resource assessment network
- USA: National Ecological Observatory Network (NEON), meteorological observation network
- UK: Centre for Ecology & Hydrology (CEH), measurement / monitoring network
- India: India Meteorological Department (IMD), national measurement network
- Japan: Japan Meteorological Agency (JMA), national measurement network
- China: China Meteorological Administration (CMA), national measurement network, sensors supplied through a technology transfer project.
- Ecuador: National Meteorological and Hydrological Institute (INAMHI), national measurement network

NOTE: the fact that a sensor is used in a network does not constitute a formal endorsement by the network owner.



Figure 1 SR20 secondary standard pyranometer; also employed for sunshine duration measurement



Figure 2 Typical reference measurement station with a solar tracker, pyrheliometers model DR02 and pyranometers model SR20

Solar radiation

Most national meteorological networks employ **pyranometers** to measure solar radiation or global horizontal irradiance (GHI). The latest trend is the combined use of pyranometers for solar radiation as well as sunshine duration measurement. Some networks use an optional ventilator, model **VU01**, to improve measurement dependability. Ventilation promotes thermal equilibrium between all components of radiometers, and thereby reduces zero offsets. Dew and frost formation is prevented. See our [pyranometer selection guide](#).

More sensors for reference stations

Our product range also includes other products that are typically employed in reference stations, such as:

- net radiometers (**NR01**)
- pyrgeometers (**IR20**)
- pyrheliometers (**DR02**)



Figure 3 VU01 ventilation unit with SR20 pyranometer

Sunshine duration

WMO has approved the “pyranometric method” to calculate sunshine duration from pyranometer measurements in WMO-No. 8, Guide to Meteorological Instruments and Methods of Observation. This implies that pyranometers may be used, in combination with appropriate software, to measure sunshine duration. The method involves an algorithm, which estimates sunshine hours by comparing the 10-minute GHI with the solar radiation outside the earth’s atmosphere on a horizontal surface at that time and location (G_0).

Local support & calibration

Hukseflux has support sites available around the globe, with local representatives that operate their own calibration facilities in:

- EU (Amsterdam region)
- USA (New York region)
- India (New Delhi region)
- China (Shanghai region)
- Japan (Tokyo region)

Indoor calibration systems

Hukseflux provides indoor calibration equipment for pyranometers (indoor calibration according to ISO 9847, Type IIc). Advantages of this product: suitable for all pyranometer models, operation in a normal laboratory environment (no darkroom required), small area footprint and no need for additional air-conditioning (all lamp power is led outside with forced ventilation).



Figure 4 Calibration systems are also commercially available

About Hukseflux

Hukseflux Thermal Sensors, founded in 1993, aims to advance thermal measurement. We offer a complete range of sensors and systems for measuring heat flux, solar radiation and thermal conductivity. We also provide consultancy and services such as performing measurements and designing instrumentation according to customer requirements. Hukseflux’ quality management system is ISO 9001:2008 certified. Customers are served through the main office in Delft in the Netherlands, and locally owned representations in the USA, India, China and Japan.

Would you like more information?
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