Net Radiometer - SNR01

SNR01 Specifications

General Performance

Signal range (SR01 Pyranometers): 0 to 2000 W/m²

Signal range (IR01 Pyrgeometers): ± 250 W/m² (net signal)

Response time (95%): 18 sec.

Non-linearity (to 1000 W/m²): ± 2.5%

Non stability (drift): < 1% per year

Operating temperature: -40 to +80° C

Temperature dependence: < ± 0.1 %/°C

Temperature sensor: PT100 (w/optional temp. sensor ports)

Cable length: 5 meter standard (longer lengths optional)

SR01 Pyranometers

ISO classification: Second Class

Spectral range: 305 to 2800 nm

Calibration traceability: WRR (World Radiometric Reference)

IR01 Pyrgeometers

Spectral range: 4500 to 50,000 nm

Window heating offset: < 15 W/m² (1000 W/m² solar loading)

Dynamax Inc
10808 Fallstone Rd #350
Houston, TX 77099 USA
Tel: 281-564-5100 Fax: 281-564-5200
admin@dynamax.com
www.dynamax.com

The SNR01 is a research grade four-component net radiometer, intended for global energy balance studies. The instrument incorporates four separate sensors for measuring total global and surface reflected short-wave (SW) solar irradiance, and the down/up-welling far infrared long-wave (LW) radiation components.

Performance advantages of the SNR01 Net Radiometer over competing models include: reduced instrument weight, decreased FIR sensor/pyrgeometer window thermal offset error, and an integrated two-axis leveling assembly for improved in-field level adjustment. The SNR01 is suitable for measuring all four separate radiation components of the surface energy balance via a set (two each) of short-wave pyranometers and long-wave pyrgeometers. Employing entirely passive thermopile-based sensing technology, the SNR01 generates four low level DC millivolt output signals proportional to the incoming and outgoing solar short-wave and FIR long-wave radiative flux. A PT100 RTD temperature sensor is integrated into the radiometer housing for accurate calculation of the sky and surface temperatures. The SNR01 also incorporates an integrated heating element which can be cycled on for dew and frost deposition prevention (for improved LW measurement accuracy under adverse climate conditions). The SNR01 signal cables can be easily installed and replaced by the user.

Applications

- **Agrometeorology (evapo-transpiration)**
- **Climatology (global energy balance)**
- **Highway Safety (road surface temperature)**
- **Material Testing (insullation efficiency & material degradation)**

Note: Above applications are inclusive of, but not limited to the entire SNR01 application range.

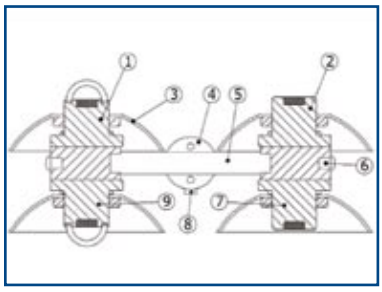

Figure 1: NR01 four-component net radiometer. SW solar radiation sensor or pyranometer (1, 9), LW Far Infra-Red radiation sensor or pyrgeometer (2, 7), radiation shield (3), leveling assembly for easy 'x' and 'y' axis adjustment (4, 5 and 8)

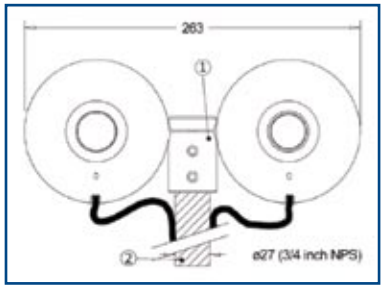

Figure 2: NR01 top view. Standard cable length is 5 m. Cable can be installed and replaced in-field by user. Easily attaches to 1" inch tube stock (2); mounting tube not included. All dimensions in mm.