Radiometer Physics
A Rohde & Schwarz Company

RADIOMETER INSTALLATION

Deployment Recommendations

The location for a radiometer installation needs to comply with several requirements in order to guarantee successful recording of valid data. The following list of requirements shall be matched:

- Flat and stable grounds to support 100 kg of weight (plus personnel), preferably a concrete base plate or a flat rooftop. A free space of about 2 x 3 meters is required for setting up the radiometer.
  - If vegetation covered soil or bare soil is chosen, then some extra provision is needed to prevent the radiometer stand from sinking into the ground.
  - If the surface does not allow the mounting of steel cables to tie the radiometer to the ground, then the radiometer stand needs to be loaded with extra weight.
- The view to the horizon should be unobstructed by trees, fences, and buildings into at least one direction (for radiometers without azimuth positioner it needs to coincide with the main scan direction indicated by the orange arrows on the housing).
- For sky scanning, a significant distance from obstacles like houses and trees is beneficial.
- The distance from the radiometer to (a) power outlets and (b) the location of the controlling host PC should match the length of the cables ordered with the radiometer. The instrument is supplied with 50 m power and data cables as standard.
- A safe routing option for the cables (outdoor / indoor) should exist. The power cable diameter is 12 mm, the data cable is a fiber optical cable which needs to be handled with great care. Pushing and pulling the cables can lead to a malfunction of the cable performance.
- To avoid in-band RFI, the user may want to check for radars and telecommunication links directly in the observation bands (22 GHz to 32 GHz, and 51 GHz to 59 GHz).
- When using azimuth turn tables: For safety reasons, install a fence around the radiometer for warning people to enter the danger zone (a circle of 1 m radius around the center of the radiometer).

The instrument will be delivered with a tool-bag which contains all necessary tools to set up and install the radiometer.

The accessories box contains a small grey box with spare screws and a monitor cable to install an external monitor to the radiometer to have access to the internal PC in terms of service activities.

The instrument is classified to protection class **IP44**.

Power line requirements:

Parameter	Range
Voltage	100-230 V ~, 50 to 60 Hz
Power consumptions AC 1 (100 – 230 V ~)	Instrument: <120 W average, 650 W during warm up Blower: 130 W maximum
Power consumptions AC 2 (230 V ~)	Heater Module: 2 kW @ 230 V/AC 500 W @ 110 V/AC (transformer to 230 V/AC required for full power operation)

Radiometer Physics
A Rohde & Schwarz Company

SAFETY INSTRUCTIONS FOR HANDLING LIQUID NITROGEN

For performing absolute instrument calibrations, it is required to handle liquid nitrogen (LN2).

LN2 (recommended at least 25 liters) should be available at the day of setup and installation of the radiometer.

When the target is filled with LN2, its total weight is approx. 28 kg and at least two persons are required.

For handling LN2 as well required is:

- to wear suitable protective gloves
- to wear protective glasses / goggles
- to wear a protective apron
- to wear protection shoes to avoid LN2 touching the feet
- must follow the general safety guidelines for handling cryogenic liquids

WEIGHTS AND DIMENSIONS

Weights:

Radiometer: approx. 65 kg without blower and heater module

Blower: approx.12 kg

Heater Module: approx. 5 kg

When unpacking or lifting the radiometer on the stand or turn table at least four people are needed.

Boxes

	Contains these items	Length [mm]	Width [mm]	Height [mm]	Weight empty [kg]	Weight with goods [kg]
Box 1	- Radiometer	1220	560	910	34	~105
Box 2 (Accessories)	- Stand - Spare Parts - Cables - Power-Split. - Cold Load	1070	710	1000	37	~100
Box 3 (Options)	- Blower - Heater - Host-PC - IRR (1/2 ch.)	535	710	480	22	~50
Box 4 (Azimuth)	- Azimuth-turn-table	535	710	480	22	~45