

PRECIPITATION MEASURING TECHNOLOGY

Laser Precipitation Monitor

Part number: 5.4110.00.xxx

The acquisition comprises the types of precipitation, intensity and the spectrum. All measuring values are available for the user via an RS485/422 interface. In addition, the instrument is equipped with two further digital outputs (opto-couplers), which output, for ex., pulses and state of precipitation. The optical components are equipped with an integrated heating.



Specification

Part number: 5.4110.00.xxx

Precipitation

| | |
|---|---|
| Meas. principle | laser beam |
| Particle size | 0.16 ... 8 mm |
| Particle speed | 0.2 ... 20 m/s |
| Intensity | 0.001 ... 1000 mm/h |
| Error intensity -/ quantity measurement | ±5% at adjustment under laboratory conditions with a specific test system with the permissible tolerance of ± 5%. Each LNM is supplied with a factory acceptance certificate after passing the calibration. 15% rain 0,5... 20mm/h 30% snow (WS 3m/s) |
| Precipitation types | drizzle (also freezing) rain (also freezing) hail snow snow grains / ice needles soft hail / ice grains |
| Accuracy | comparing with synoptic observation drizzle > 97% rain > 99% hail > 97%* snow > 99% soft hail > 85% snow grains > 60% *According to human observer |

Sensors

| | |
|-------------|-----------------------------|
| Laser diode | 786 nm, max. 0.5 mW |
| Laser class | 1M (EN60825-1:1994 A2:2001) |

Data output digital

| | |
|----------------------|---|
| Interface | RS485 / 422, potential isolation and 2 impulse outputs, potential isolation |
| Baudrate | 1200 ... 115200 Baud |
| Output type | ASCII, Synop, Metar @ RS485 / 422 frequency @ impulse outputs |
| Resolution intensity | 0.001 mm/h @ RS485 / 422 |
| Resolution quantity | 0,001 mm @ RS485 / 422 0.1 mm, 0,01 mm, 0,005 mm @ impulse outputs |
| General | |
| Ambient temp. | -40 ... +70 °C |
| Protection | IP 65 |
| Dimension | Ø 270 x 170 x 540 mm |
| Weight | 4.8 kg |

Versions

As per 5.4110.00.xxx, but:

Product number 5.4110.00.000

General

| | |
|--------------|---|
| Power supply | 24 V AC/DC or 22 ... 30 V DC, 750 mA |
|--------------|---|

Product number 5.4110.00.100

General

| | |
|--------------|----------------|
| Power supply | 115 V AC, 15 W |
|--------------|----------------|

Product number 5.4110.00.200

General

| | |
|--------------|----------------|
| Power supply | 230 V AC, 15 W |
|--------------|----------------|

Product number 5.4110.00.300

General

| | |
|--------------|----------------|
| Power supply | 24 VDC, 600 mA |
|--------------|----------------|

Accessories

| Product | Product name | Brief description |
|---------|--------------|-------------------|
|---------|--------------|-------------------|



Instrument Support
4.3187.61.x00

For the vibration-reduced operation of the LPM on an available concrete foundation, provided by the customer.

General

| | |
|-------------------|--------------------|
| Material | steel, zinc plated |
| Tube diameter | Ø 60 mm |
| Mounting distance | 424 mm |
| Dimension | 645 x 645 mm |
| Weight | 30 kg |



Wind Protection Element
5.4200.00.000

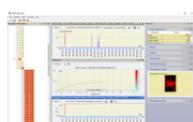
Serves as optional accessory for uninterrupted acquisition even in case of wind.

Material

| | |
|-------------|--------------------|
| Frame | stell, zinc plated |
| Laminations | stainless steel |

General

| | |
|-----------|--------------------|
| Dimension | 600 x 480 x 400 mm |
| Weight | 18 kg |
| Mounting | Ø 48 ... 102 mm |



LNM-View
9.1700.99.000

The Thies LNM View program is used to display data generated by the Thies Laser Precipitation Monitor and/or Thies 3D Stereo Disdrometer.

Compatibility

| | |
|-------------------------|--|
| Connectable instruments | <ul style="list-style-type: none"> • Laser precipitation monitor 5.4110.xx.xxx • 3D Stereo Disdrometers 5.4120.xx.xxx |
| System requirements | PC with: <ul style="list-style-type: none"> • 1GHz, 256 MBRAM, recommended 2 GHZ, 512MBRAM • Graphics resolution: 800 x 600 • Graphics colours: 16bit TrueColor |
| Operating system | Recommended operation system: <ul style="list-style-type: none"> • Windows 8 • Windows 10 |