

# OTT Pluvio<sup>2</sup>

Universal precipitation gauge using the balance principle  
for liquid, solid, and mixed precipitation



# Setting standards with the OTT Pluvio<sup>2</sup>

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It does not matter whether it is drizzle or a cloudburst, sleet, hail or snow, the new **OTT Pluvio<sup>2</sup>** reliably and accurately measures both the amount and the intensity of liquid, solid, and mixed precipitation. It works according to the balance principle, taking account of external factors such as temperature and wind that could distort the results. Both digital outputs (impulse/0.1 mm and status) and the serial interface (freely configurable as SDI-12 or RS-485) are available for transferring the data.

High-precision technology and robust design provide high accuracy and complete reliability. Load cell and sensor electronics are reliably protected from damaging environmental influences. We have designed the carrier, bucket, and protective housing parts to be particularly robust and we have ensured the use of high-quality materials. And the best thing is: The OTT Pluvio<sup>2</sup> saves valuable time, as it not only provides precise precipitation data, but is also practically maintenance-free. How's that for a benchmark!

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## Ready for anything

When collecting climate data throughout the world, different demands are made regarding the bucket orifice of the rain gauge

In accordance with the standards applicable in the world, we therefore offer the OTT Pluvio<sup>2</sup> in two versions.

### OTT Pluvio<sup>2</sup> 200

Bucket orifice 200 cm<sup>2</sup>, measuring capacity 1500 mm, ring heating optional

### OTT Pluvio<sup>2</sup> 400

Bucket orifice 400 cm<sup>2</sup>, measuring capacity 750 mm



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## The balance measuring process

Below the collecting bucket and well protected from damaging environmental factors, there is a high-precision, hermetically sealed load cell in stainless steel.

This measures the total weight on it. The sensor electronics attached use the measured value to calculate the net weight of the precipitation collected and to derive the temperature-compensated amount and intensity. An integrated temperature sensor provides the current environmental temperature at the time. The raw data obtained is subjected to a plausibility check by the OTT Pluvio<sup>2</sup>. Factors affecting the result, such as wind, are eliminated by using a mathematical algorithm, thus providing adjusted precipitation data.



# Innovative, professional, and practical

Developed in conjunction with technologically leading meteorological services, the OTT Pluvio<sup>2</sup> fulfills the highest expectations and at the same time stands out with relatively low operating costs. A price/performance ratio that will convince you.

## Accurate and stable long-term

- Fulfills all requirements of WMO manual 306, No. 8 (WMO = World Meteorological Organisation).
- Calibration of the load cell and sensor electronics is valid for the life of the unit.
- The individual temperature characteristic curve of the load cell is continually and drift-free compensated during the measurement.
- Measurement accuracy of  $\pm 0.1$  mm, for the whole life of the unit.



## Non-sensitive and robust

The big plus of the OTT Pluvio<sup>2</sup> is its robust nature, which also resists adverse environmental conditions.

- The calculation electronics are hermetically protected from environmental influences and achieve the highest EMC.
- Formed parts are made by machine, they are particularly strong, and of high-quality materials.
- A cushioning spring system protects the load cell from damage from impact, for example.
- The electrical supply and output interfaces are protected against overload.



## Suitable for any location

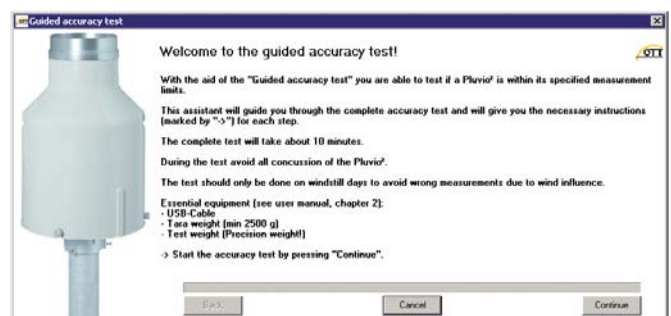
Conceived for a precipitation intensity range of 0.1 to 30 mm/min, the OTT Pluvio<sup>2</sup> reliably measures the drizzle of the temperate zones as well as heavy tropical rains and arctic snow showers.

- Bucket orifice without a funnel – heavy and solid precipitation are also recorded with precise timing.
- Continuous precipitation measurement and the highest availability of data – no evaporation losses from heated funnels or buckets.
- Anti-freeze prevents freezing – operation without compromise even in areas with high levels of snow and frost.
- Ring heating optionally available – no formation of snow caps.
- Possibility of power supply using solar energy – can also be used at self-sufficient measuring stations, even with snow and hail.

## Virtually maintenance-free

The OTT Pluvio<sup>2</sup> is supplied with lifetime calibration. Calibration work on location is therefore no longer necessary.

- Maintenance work is limited to emptying the collecting bucket, occasional visual checks, and adding anti-freeze as necessary.
- Onerous cleaning work due to blocked funnels or filters are a thing of the past.
- Alarm and error messages are available for remote data transfer via the output interfaces – thus, an overflow, for example, can automatically be detected by the status.
- Data output is blocked during maintenance work and accuracy tests.



The OTT Pluvio<sup>2</sup> operating software is menu-driven and allows simple functional checks and accuracy tests on location using a notebook computer. The power supply is simply provided via USB.

# Technical Data

## General data

Types of precipitation	liquid, solid, and mixed
Collecting area	200 cm <sup>2</sup> and 400 cm <sup>2</sup>
Collection volume	1500 mm and 750 mm
Sensor element	sealed load cell

## Interfaces

USB	configuration/service mode and firmware update
Serial interfaces	SDI-12 or RS-485
Digital outputs	impulse 0.1 mm and status (0 ... 120 impulses/min; configurable: 5 Hz or 2 Hz)
Measurement output	intensity RT; amount RT/NRT, amount NRT, amount total NRT bucket content RT and NRT; temperature of load cell OTT Pluvio <sup>2</sup> status; heating status (if present)

## Electrical and mechanical data

Power supply	9.6 ... 28 VDC
Power/current consumption	≤ 180 mW / max. 15 mA at 12 V, typically 12 mA at 12 V
Ring heating, optional	24 VDC / 50 Watt
Dimensions (Ø x H)	450 mm x 740 mm / 450 mm x 660 mm
OTT Pluvio <sup>2</sup> 200 / OTT Pluvio <sup>2</sup> 400	110-120 mm (4 ") (2" possible)
Pedestal (Ø)	15 kg
Weight (bucket empty)	aluminium / polyethylene / ASA, UV-resistant
Material for base plate / bucket / pipe housing	

## Environmental conditions

Temperature, in operation	-40 ... +60 °C
Temperature, storage	-50 ... +70 °C
Relative humidity	0 ... 100 % (non-condensed)

## Protection

Housing	IP 65, resistant to salt fog
Load cell	IP 67
EMC	complies with EN 61000-4-2/3/4/5/6, CE conformity

## Measuring range

Intensity RT / measuring interval 1 minute	<b>200</b>	<b>400</b>
	12.00 ... 1,800.00 mm/h	6.00 ... 1,800.00 mm/h
	0.20 ... 30 mm/min	0.10 ... 30 mm/min
	0.10 ... 500.00 mm	0.10 ... 500.00 mm
	20.00 ... 1,600.00 mm	20.00 ... 850.00 mm

Amount RT /NRT, amount NRT, amount total NRT

Bucket content, RT and NRT

## Accuracy (at - 25 ... +45 °C)

Amount and bucket content, absolute (max. 60 min. collection time)	± 0.1 mm
Intensity	± 0.1 mm/min or ± 6 mm/h
Resolution	0.01 mm and 0.01 mm/min or mm/h

## Times

Intensity output interval	1 minute
Output delay	RT 18 seconds; NRT 5 minutes
Query interval	6 seconds ... 60 minutes

## Pluvio<sup>2</sup> operating software

(supplied with unit)	measured value display, configuration, diagnosis, firmware update, guided accuracy test
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RT = real-time; NRT = non real-time; units can be configured in mm or in (inch) and °C or °F

## OTT – Your partner for:

- Water level measurement in ground and surface water
- Discharge measurement
- Precipitation measurement
- Water quality measurement
- Data management and communication
- HydroService: consulting, training, installation and maintenance

