All-in-one weather sensor with measurement of temperature, relative humidity, air pressure, wind velocity / direction, precipitation amount / intensity / type, UV index, sun direction, brightness and twilight and global radiation

- **Parameters measured**
  - air temperature, relative humidity, air pressure, wind direction / velocity, precipitation amount / intensity / type, UV index, sun direction, brightness, twilight and radiation

- **Measurement technology**
  - PTC, capacitive, Doppler radar, silicon pyranometer, thermal

- **Product highlights**
  - Compact, multiparameter, economic, with dome heating, maintenance-free, open communication protocol, good price performance ratio

- **Interfaces**
  - RS485, 2-wire, half-duplex; WLAN; supporting Modbus, UMB, UMB ASCII 2.0 protocol

- **Article number**
  - 8368.WS10P

The All-in-One Weather Sensor WS10 covers 10 parameters simultaneously. It's particularly suitable for building automation, smart city applications and solar rooftops. The data transfer takes place via Wi-Fi or RS485.
## Technical Data

### Lufft WS10 Smart Weather Sensor

**Housing**
- **Dimensions**: 13 x 145 x 227 mm
- **Weight**: 0.5 kg
- **Protection class**: IP67

**Electrical parameters**
- **Input voltage range**: 9-36 VDC
- **Power consumption (without dome heating)**: 120 mA (at still air @24V); 360 mA (from ~7 m/s wind @24V)
- **Dome heating**: 24VA @ 24VDC
- **Max. input power**: 32.5VA @ 24VDC

**Environmental conditions**
- **Permissible rel. humidity**: 0 ... 100%
- **Permissible operating temperature**: -40 ... +60°C / -40 ... +140°F

**Communication**
- **Interfaces**: RS485, 2-wire, half-duplex; WLAN (2.4 GHz; 802.11b/g/n)
- **Protocols**: Modbus, UMB, UMB ASCII 2.0

**Compass**
- **Measurement range**: 360 °
- **Accuracy**: ±10 %

**GPS**
- **Accuracy**: ±5m (50% CEP)

**Temperature**
- **Principle**: PTC
- **Measurement range**: -40 ... +60°C / -40 ... +140°F

**Relative humidity**
- **Accuracy**: ±1.0°C (@ +5 ... +60°C), otherwise <±2.0°C
- **Principle**: Capacitive
- **Measurement range**: 0 ... 100 % RH
- **Accuracy**: ±5% (at 20 °C and <80 % rH)

**Precipitation**
- **Principle**: Doppler Radar
- **Measurement range**: 0 ... 100mm/h
- **Accuracy**: 20% under laborary conditions
- **Precipit. type**: Rain, snow, sleet, freezing rain, hail

**Global radiation**
- **Principle**: Silicon pyranometer
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#### Lufft WS10 Smart Weather Sensor

**Measurement range**: 0 ... 1500 W/m²

**Accuracy**: 10% or @ ±120 W/m², the greater value applies

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**Sun direction**

**Principle**: Calculated

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**UVA / UVB index**

**Principle**: Silicon pyranometer

**Measurement range**: 0 ... 15 UV index

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**Brightness (ambient light sensor)**

**Principle**: Silicon pyranometer

**Measurement range**: 0 ... 160 klx

**Accuracy**: ±5% of the measured value

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**Twilight**

**Principle**: Silicon pyranometer

**Measurement range**: 0 ... 500 lx

**Accuracy**: ±10 lx

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**Air pressure**

**Principle**: Capacitive

**Measurement range**: 300 ... 1100 hPa

**Accuracy**: ±0.5 hPa (@ room temp. 25 °C / 77 °F)

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**Wind direction**

**Principle**: Thermal

**Measurement range**: 0 ... 359.9°

**Accuracy**: ±10°

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**Wind velocity**

**Principle**: Thermal

**Measurement range**: 0 ... 40 m/s (0 ... 90 mph)

**Accuracy**: ±1 m/s (2.2 mph) or 5%, the greater value applies