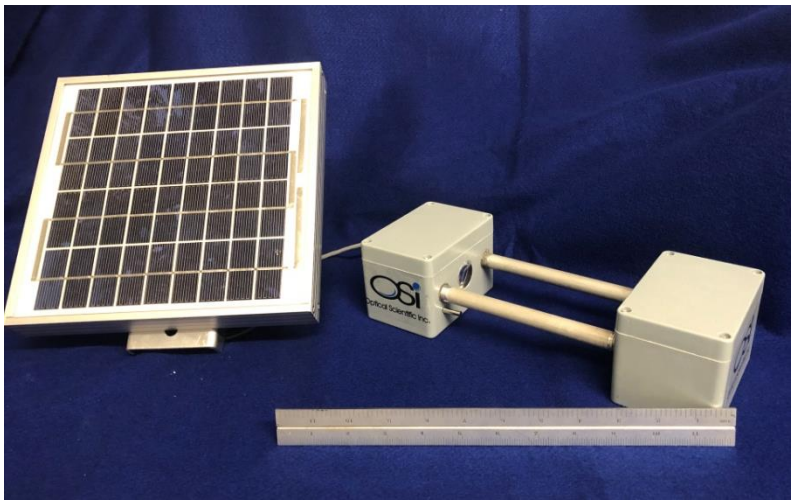
# NRG™ Networked optical Rain Gauge™



## NRG-022 Features

- Very compact and lightweight optical rain gauge
- No moving parts all solid state
- Networking via integrated cellular modem communications
- Low power ideal for solar panel
- Virtually maintenance free
- Ideal for remote locations w/o infrastructures
- Sensitive to very light rain
- Works on moving platforms : ships & buoys
- Adaptive heater technology (AHT) conserves battery and solar power
- Environmentally safe - no antifreeze or other consumables

The NRG-022 Networked optical Rain Gauge measures rain rate and accumulation using an infrared optical beam from an LED source. The NRG offers vastly superior sensitivity and reliability to traditional type sensors.

NRG measure rain and snow by detecting the optical irregularities induced within the sample volume by precipitation particles falling through a beam of partially coherent infrared light. These irregularities are known as scintillation. By detecting the intensity of the scintillations which are characteristic of precipitation, the actual rainfall rate and accumulation can be determined.

NRG precipitation sensor provides accurate rain measurement even in difficult conditions. Designed for rugged, unattended operation, NRG uses sophisticated algorithms that are field proven in adverse environments around the world and, unlike other sensors, even on ocean deployed data buoys and ships.

OSI's NRG is not affected by environmental factors which cause significant errors with traditional rain gauges. The NRG has no collectors, buckets, or siphons to corrode or clog. The sensors use advanced logic to eliminate the effects of LED output power or dirty optics. In fact, sensor performance is maintained even when over 50% of the light is blocked!

The NRG has a serial output for local data collection and potential troubleshooting. But the majority of applications would utilize the built-in cellular modem for transporting the data through the cloud or a client's dedicated server.

This extremely compact, lightweight and rugged rain gauge uses less than 40 mA current draw and is an ideal choice for large area rain gauge networks in remote or urban settings.

This advanced technology is the basis for the present weather sensors supplied to the FAA/NWS/U.S. Navy for the Automated Surface Observing System (ASOS).

OSI optical sensors are widely used by airports and regional DOT's across the US & throughout the world. No other weather instrument can provide this combination of high performance, low cost and proven reliability and customer satisfaction as the NRG.

**The NRG sensors are based on technologies developed and patented by OSI.**

# NRG-022 tm Specifications

| Performance Specification | |
|---|---|
| Measurement Technique | Optical Scintillation with Advanced Artificial Intelligence Algorithms |
| Rain Dynamic Range | 0.5 to 300 mm/hr |
| Rain Accumulation | 1 to 9999 mm |
| Rain Accuracy | 10% Accumulation |
| Rain Resolution | 0.001 mm |
| Time Constant | 10 seconds |
| Data Update Rate | Once per minute |

| Electronic Specification | |
|---|---|
| Supply Voltage | 9- 24 VDC |
| Current Drain | 40 ma nominal (AHT current drain depends on ambient temperature) |
| Signal Output | Cellular data to cloud / RS-232 |
| Transient Protection | All power and signal lines protected by MOV |

| Environmental Specification | |
|---|---|
| Temperature | 32° to 140° F (0° to 60° C) |
| Humidity | 0 to 100%, Condensing |
| Precipitation / Dust | NEMA 4 type protection |

| Physical Specification | |
|---|---|
| Size | 300mm L x 105 mm W x 75 mm H |
| Weight | 1 kg |
| Cable Length | 6 meters |

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