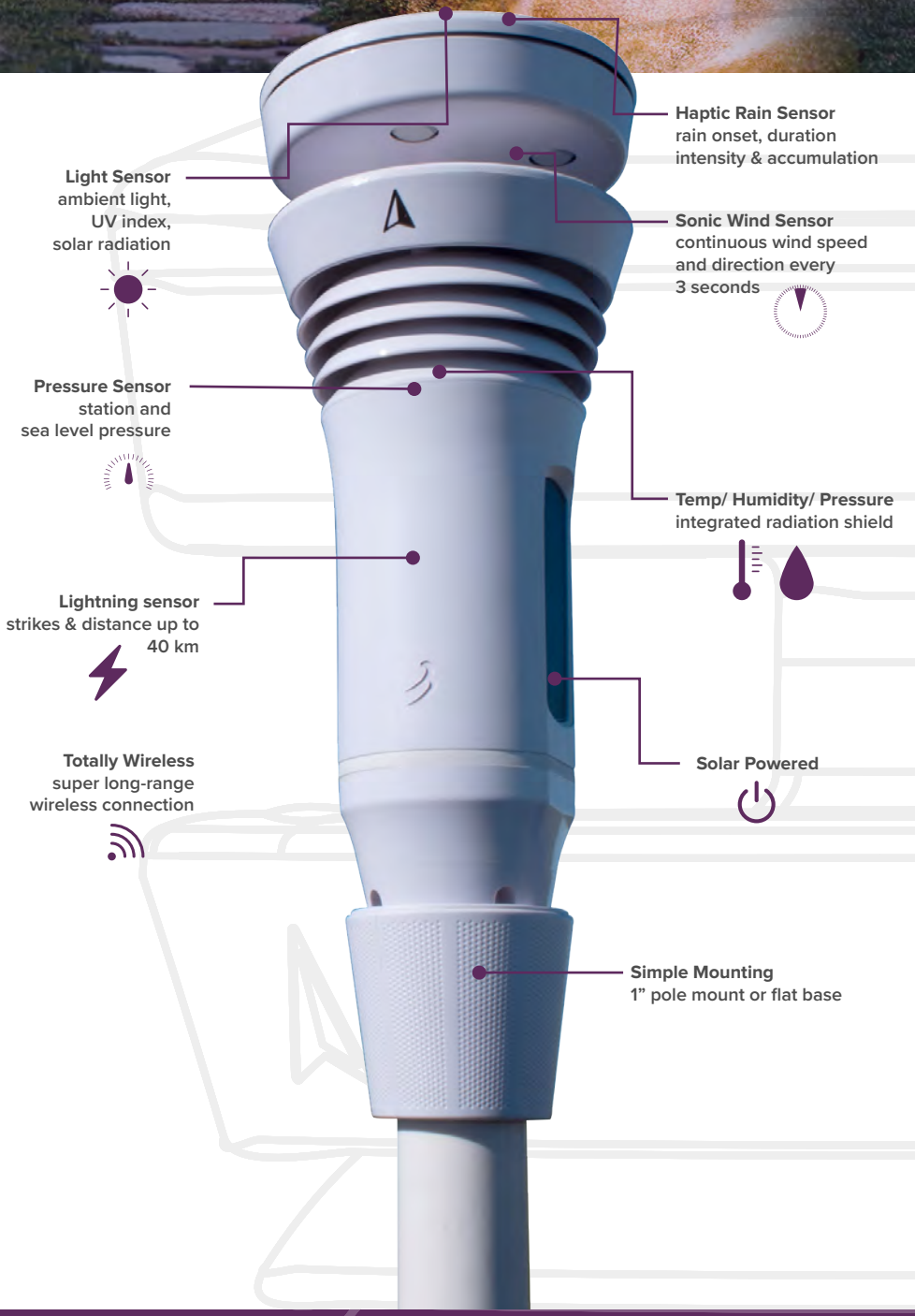
Tempest

WeatherFlow-Tempest's team of atmospheric scientists, forecasters, and developers specialize in weather networks, data science, and forecast modeling. Our weather technology is used by the National Weather Service, Coast Guard, Defense Threat Reduction Agency, and thousands of satisfied consumers around the globe.

The Tempest app stands out from the multitude of weather apps by utilizing **patented Nearest Technology.** This innovative system combines real-time data, advanced forecast modeling, and the expertise of in-house meteorologists. Every Tempest device feeds data into a sophisticated machine learning algorithm, which verifies accuracy, applies daily calibrations, and continuously enhances forecast precision over time.

A revolutionary design with no moving parts, nearly zero maintenance, instant online data, a free personal web-page, and a rich API powering a growing list of third-party applications. Install the Tempest home weather system in less than five minutes and it will do the rest!



More than hardware. The Tempest System continuously learns and improves over time. The result is the most relevant real-time weather data and a guaranteed better forecast*

tempest.earth

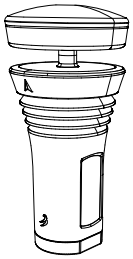
Specifications

Measurement	Range	Sampling Interval	Accuracy*	Resolution
Air Temperature	-40°C to 60°C (-40°F to 140°F)	1 minute	± 0.2° C	0.1° C
Relative Humidity	0 to 100%	1 minute	± 2%	1%
Barometric Pressure	300 to 1100 mbar	1 minute	± 1 mbar	0.1 mbar
Lightning Activity	0 to 40 km (25 miles)	Event Based	± 2 km	1 km
Wind Speed	0 to 45 m/s (100 mph)	3 Seconds	greater of ± 0.5 mph or ± 2%	0.04 m/s (0.1 mph)
Wind Direction	0 to 359°	3 Seconds	± 5°	1°
Ambient Light	1 to 128,000 Lux	1 minute	± 100 Lux	1 Lux
UV Index	0 to 14 UVI	1 minute	± 0.5 UVI	0.1 UVI
Solar Radiation	0 to 1900 W/m2	1 minute	± 5%	1 W/m2
Rain Rate	0 to 400 mm/hour (0-15.7"/hour)	1 minute	± 10%	0.1 mm / hr
Rain Accumulation	Unlimited	1 minute	± 10%	0.1 mm
Rain Duration	Unlimited	1 minute	± 2 minutes	1 minute
Rain Intensity	Very Light to Extreme	1 minute		
Rain Start	Low to High Sensitivity	Event Based		

Derived Parameters

- Dew Point
- Temperature
- Pressure Trend
- Heat Index Temperature
- Wind Chill Temperature
- Delta T
- Neighborhood Rain Accumulation
- Air Density
- Feels Like Temperature
- Vapor Pressure
- Sea Level Pressure
- Wet Bulb Temperature
- Wet Bulb Globe Temperature

***** all accuracy specifications are relative to professional-grade, co-located instrumentation under controlled conditions designed to mimic WMO siting standards and may vary due to local siting and installation specifics.***



Calibration:
All devices are factory calibrated. Automated field calibrations are applied as needed. Manual field calibration and factory re-calibration are available in rare cases. See more at http://tempe.st/calibration

Wind:
Nominal cut-in speed is 0.3 m/s (0.7 mph). Wind accuracy can be impacted at temperatures below -30°C (-22F). Obstructions in the wind sampling section can also affect accuracy. Winds greater than 45m/s (100mph) can be measured but with limited sampling integrity.

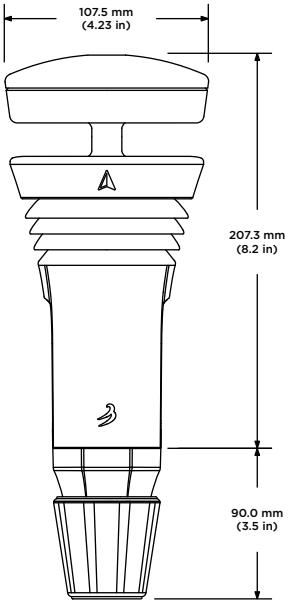
Rain:
The haptic rain sensor measures rain by sensing the vibration caused by impacting rain drop. It does not report snow, sleet, graupel, hail, fog, dew or extremelly light rain/mist. Errant sources of vibration may affect readings. For more details on rain, please see http://tempe.st/rain

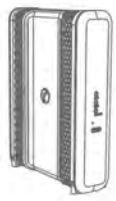
Environmental:
The Tempest is designed for harsh outdoor environments with marine-grade, UV-resistant materials, conformal coating of all electronics and an ingress protection rating of IP66. The Tempest's operating range is -40°C to 60°C (-40°F to 140°F) , 0-100% relative humidity and winds up to 120 mph.

Power:
The Tempest is powered by four vertical solar panels that operate at any latitude as long as they receive at least 4 hours of sunlight every two weeks. Energy is stored in a 1300 mWh lithium titanate (LTO) battery that never needs replacing. For installations where the solar panels do not receive enough sunlight, an auxiliary power source accessory is available.

Mounting:
The Tempest can be mounted to a flat horizontal surface or to the top of a pole or mast. Installation kits are available to suit most installation options. More siting & installation tips can be found at ***http://tempe.st/siting***

Wireless:
Tempest transmits data to the Hub via low-power, sub-GHz radio (915Mhz in the US, 868MHz in Europe, 920MHz in Australia & New Zealand). The nominal range from the Tempest device to the Hub is 300 m (1000 ft) in clear line-of-sight. That will vary depending on obstacles (walls, buildings).





Hub (Base Station):
Provides Wi-Fi and Ethernet options, ensuring flexible and reliable connections. Hub features enhanced offline data storage, so you never miss a moment of weather data. With its external antenna, the Hub provides extended range, ensuring a strong and consistent link between the Hub and your Tempest Sensor Device.

Warranty & Guarantees:
WeatherFlow offers a 60 Day Money Back Guarantee, a Better Forecast Gaurantee, a 2 Year Limited Warranty and a 10-Year Legacy Discount. See ***http://tempe.st/guarantee*** and ***http://tempe.st/warranty*** for details.

Customer Service: Visit *http://tempe.st/help* or email *support@tempest.earth*