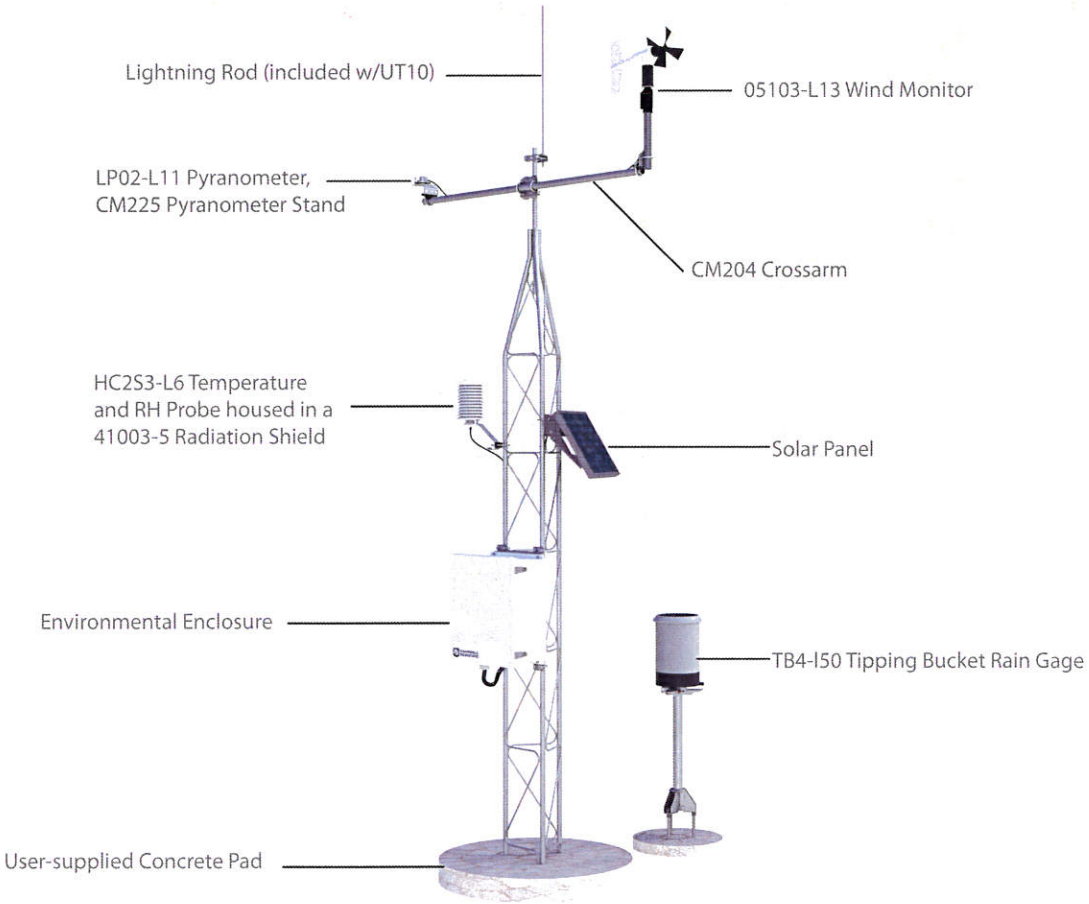
CAMPBELL SCIENTIFIC
WHEN MEASUREMENTS MATTER

UT10

10 ft Instrument Tower



Overview

The UT10 is an aluminum, corrosion-resistant tower that provides a 10-ft (3 m) crossarm height (see specifications). This general-purpose tower supports the attachment of sensors, mounts, solar panels, antennas, and environmental enclosures. A lightning and grounding rod, grounding cables, grounding cable clamps, hinged base, anchor bolts, and UV-resistant cable ties are included with the tower.

The UT10 is used as a sturdy, long-term instrument mount for a variety of applications. It can be augmented with mounts (e.g., CM204, CM220, CM225) that allow attachment of meteorological sensors such as wind sets, pyranometers, and temperature/relative humidity probes. Other meteorological sensors such as barometers, soil temperature and moisture probes, and rain gages can also be used with a UT10-based station.

Benefits and Features

- Sturdy, long-term instrument mount
- Base and grounding kit included

Specifications

- Material: Hardened Aluminum
- Leg Spacing: 26 cm (10.25 in.) between legs (center to center)
- Wind Load Recommendation[a]: 177 km/h (110 mph) maximum
- Required Concrete Pad Dimensions[b]: 61 x 61 x 61 cm (24 x 24 x 24 in.)
- Weight: 17.2 kg (38 lb)
- Height: 3 m (10 ft)

Crossarm Height (attached to mast)

- Standard: 3 m (10 ft)
- Maximum (mast fully extended): 3.7 m (~12 ft)
- Minimum: 2.7 m (~9 ft)

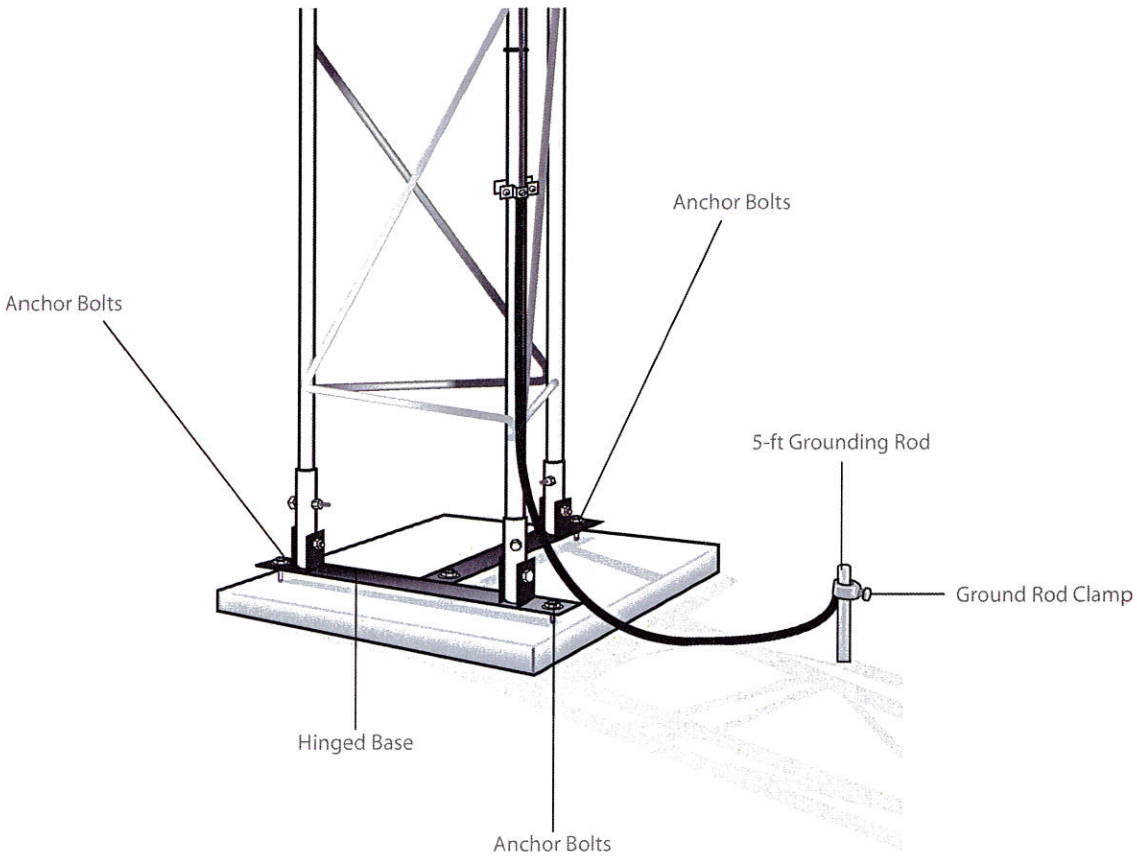
Pipes Outer Diameter (OD)

- Vertical: 2.5 cm (1 in.)
- Cross Support: 0.953 cm (0.375 in.)

Notes:

[a]Wind load recommendation assumes proper installation, proper anchoring, adequate soil, and total instrument projected area of less than 0.19 m² (2 ft²). The amount of wind load that this mount can withstand is affected by quality of anchoring and installation, soil type, and the number, type, and location of instruments fastened to the tower.

[b]Concrete pad requirements assume heavy soil; light, shifting, or sandy soils require a larger concrete pad.



A hinged base, three anchor bolts, a grounding rod, and a ground rod clamp are included with the UT10.

Solar Panels

SP5 Series, SP10 Series, SP20 Series, SP50-L, SP90-L

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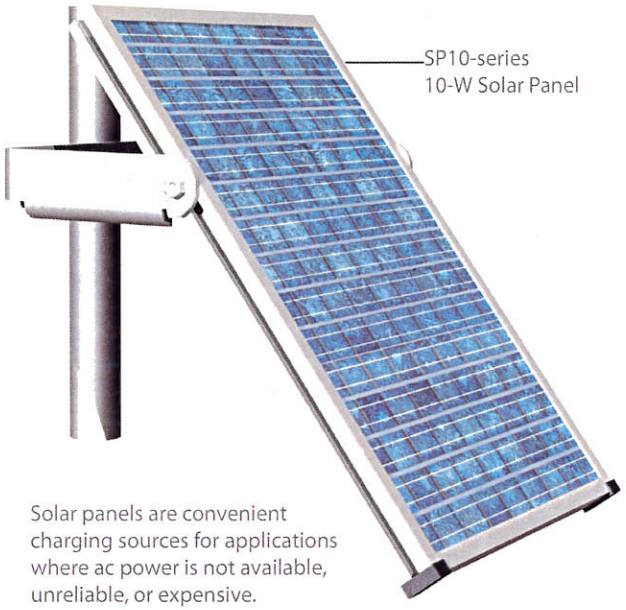

Solar panels are convenient charging sources for applications where ac power is not available, unreliable, or expensive.

Solar panels are photovoltaic power sources capable of recharging batteries. The minimum battery size and solar panel output required depends on 1) the average current drain of the system, 2) the maximum time the battery must supply power to the system without being charged, and 3) the location of the site. If you need assistance in selecting a solar panel, refer to our Power Supplies brochure, application note, or contact a Campbell Scientific Applications Engineer.

Solar panel characteristics assume 1 kW m^{-2} illumination and 25°C solar panel temperature. Individual panels may vary up to 10%. The output panel voltage increases as the panel temperature decreases. All solar panels are shipped with hardware for mounting to a tripod or tower.

SP5-Series 5 Watt Solar Panels

The SP5-series solar panels are intended only for CR200(X)-series applications that have minimal power requirements.

The difference between the models is their cable:

- **SP5's** cable has a 3 ft length and is fitted with a connector that mates with the ENC200 enclosure's power connector.
- **SP5-L's** cable has a user-specified length and terminates in pigtails that attach to the terminal strip of a CR200(X)-series datalogger.

SP10-Series 10 Watt Solar Panels

The SP10-series solar panels source sufficient current for many system configurations at most tropical to temperate latitudes. These solar panels include a 20 ft cable. The models differ as follows:

- **SP10** uses the regulator in the PS100, PS200, CR3000, CR5000, CR7, or CR9000X to recharge their internal batteries. A CH100 or CH200 regulator is required to recharge the BP12 or BP24 batteries. The SP10's cable has stripped and tinned leads that connect to the power supply or datalogger battery base.
- **SP10-PW** is the same as the SP10, except its cable terminates in a connector for attachment to a prewired enclosure.
- **SP10R** contains an on-board regulator. It can recharge a BP84, PS84, or user-supplied deep-cycle battery. The SP10R's cable has stripped and tinned leads that connect to the battery. Please note that the SP10R draws a continuous 2 mA current drain.
- **SP10R-PW** is the same as the SP10R except it's cable is fitted with a connector that attaches to a prewired enclosure.

SP20-Series 20 Watt Solar Panels

The SP20-series solar panels are often used for system configurations that have higher than average power requirements, or in higher elevation and latitude locations. The models differ as follows:

- **SP20** uses the regulator in the PS100, PS200, CR3000, CR5000, CR7, or CR9000X to recharge their internal batteries. A CH100 or CH200 regulator is required to recharge the BP12 or BP24 batteries. The SP20 has a 15 ft cable with stripped and tinned leads that connect to the power supply or datalogger battery base.
- **SP20-PW** is the same as the SP20, except its cable terminates in a connector for attachment to a prewired enclosure.
- **SP20R** contains an on-board regulator. It can recharge a BP84, PS84, or user-supplied deep-cycle battery. This solar panel has a 20 ft cable with stripped and tinned leads that connect to the battery. Please note that, the SP20R draws a continuous 2 mA current drain.
- **SP20R-PW** is the same as the SP20R except it's cable is fitted with a connector that attaches to a prewired enclosure.

SP50-L 50 Watt Solar Panel

The SP50-L solar panel is used for our CS110 Electric Field Meter or other systems that require 50 W solar panels. It needs to be connected to either a CH200 Smart Charge Controller or 18529 Morningstar Sun-Saver regulator (see below).

The SP50-L has a user-specified cable length. A 20 ft length is typical; maximum length is 50 ft. The following cable termination options are offered:

- With the -PT option, the cable terminates in spade lugs for connection to the CH200 Smart Charge Controller or 18529 regulator.
- With the -PW option, the cable is fitted with a connector that attaches to a prewired enclosure.

SP90-L 90 Watt Solar Panel

The SP90-L solar panel is used in CO_2 Bowen Ratio, CO_2 Eddy Covariance, or other systems that require high-power solar panels. This solar panel needs to be connected to either a CH200 Smart Charge Controller or 18529 Morningstar SunSaver regulator (see below).

The SP90-L has a user-specified cable length. A 20 ft length is typical; maximum length is 50 ft. The following cable termination options are offered:

- With the -PT option, the cable terminates in spade lugs for connection to the CH200 Smart Charge Controller or 18529 regulator.
- With the -PW option, the cable is fitted with a connector that attaches to a prewired enclosure.

Regulators for the SP50 and SP90

CH200 Smart Charge Controller

The CH200 limits charging current to approximately 3.6 A, has a quiescent current drain of only 0.3 mA and can precisely charge the following battery families: EnerSys Genesis NP Series (includes our PS200, BP12 and BP24), EnerSys Cyclone Series, Concorde Sun Xtender Series (includes our BP84 and PS84) or a custom battery.

18529 MorningStar SunSaver

The 18529 Morning Star SunSaver limits charging current to approximately 10 A, has a quiescent current drain of approximately 8 mA, and can charge sealed batteries (includes our BP12, BP24 and BP84) or flooded batteries.

Solar Panel Specifications

	SP5 Series[1]	SP10 Series[1]	SP20 Series[1]	SP50-L[1]	SP90-L[1]
Power	4.5 W maximum	10 W maximum	20 W maximum	50 W maximum[2]	90 W maximum[3]
Current at Peak	0.27 A	0.59 A	1.19 A	2.9 A	4.8 A
Voltage at Peak Power	16.5 V	16.8 V	16.8 V	17.5 V	17.8 V
Dimensions	25.1 x 26.9 x 2.3 cm (9.9 x 10.6 x 0.9 in.)	41.9 x 26.9 x 2.3 cm (16.5 x 10.6 x 0.9 in.)	50 x 42.2 x 5.1 cm (19.7 x 16.6 x 2 in.)	83.9 x 53.7 x 5 cm (33 x 21.1 x 2 in.)	120.9 x 53.7 x 5 cm (47.6 x 21.1 x 2 in.)
Weight	0.9 kg (2 lb)	SP10, SP10-PW: 2.1 kg (4.5 lb) SP10R, SP10R-PW 3.0 kg (6.9 lb)	SP20, SP20-PW: 4.4 kg (9.6 lb) SP20R, SP20R-PW 6.2 kg (13.6 lb)	6 kg (13 lb)	7.7 kg (17.0 lb)

[1]*Mounting hardware consists of a mounting bracket, U-bolts, nuts, and washers. The 17492 U-bolt is included with all of the solar panels. This U-bolt provides a 2.125 in. (5.398 cm) space between the U-bolt legs, which allows the solar panel to be mounted to a 0.75 in. to 1.5 in. IPS pipe (1 in. to 2 in. outer diameter). The mounting hardware for the SP50-L and SP90-L solar panels also include the 17446 U-bolts, which are used to attach the solar panel to a tower's legs. The 17446 provides a 1.5 in. (3.8 cm) space between the U-bolt legs.*

[2]*The 50 W maximum power for the SP50 assumes one solar panel is used. Two SP50 solar panels can be connected to one 18529 Morning Star SunSaver Regulator to get a maximum power of 100 W.*

[3]*The 90 W maximum power for the SP90 assumes one solar panel is used. Two SP90 solar panels can be connected to one 18529 Morning Star SunSaver Regulator to get a maximum power of 180 W.*

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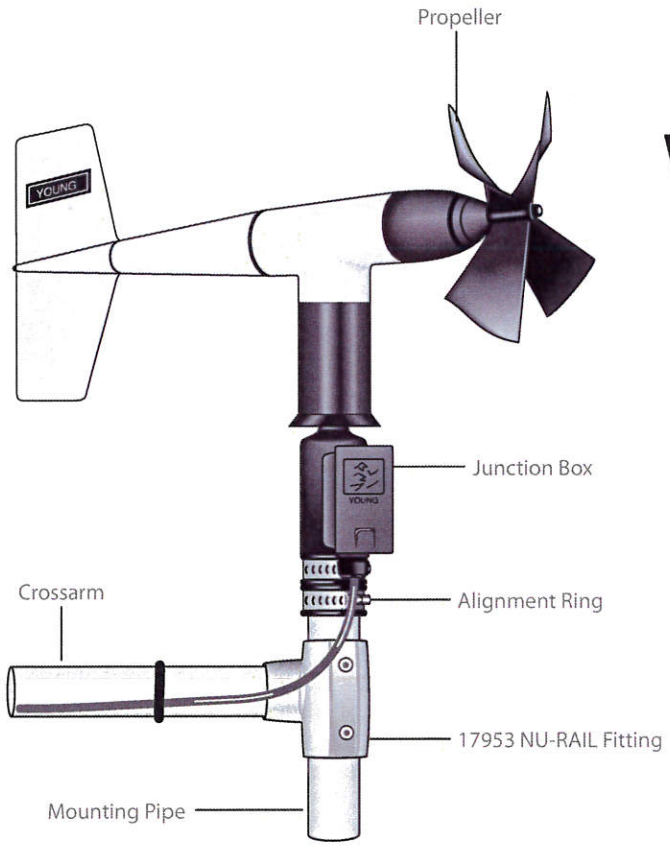
05103, 05103-45, 05106, and 05305

R. M. Young Wind Monitor Series



Reliable, Accurate Wind Measurements

Compatible with all Campbell Scientific dataloggers

Overview

The Wind Monitors* are light-weight, sturdy instruments for measuring wind speed and direction in harsh environments. Its simplicity and corrosion-resistant construction make it ideal for a wide range of wind measuring applications.

Benefits and Features

- Rugged enough for harsh environments
- Constructed with thermoplastic material that resists corrosion from sea-air environments and atmospheric pollutants
- Uses stainless-steel, precision-grade ball bearings for the propeller shaft and vertical shaft bearings
- Ideal for wind profile studies
- Compatible with the LLAC4 4-channel Low Level AC Conversion Module, which increases the number of anemometers one datalogger can measure
- Compatible with the CWS900-series interfaces, allowing it to be used in a wireless sensor network

**The Wind Monitors are manufactured by RM Young (Traverse City, MI) and cabled by Campbell Scientific for use with our dataloggers.*

Technical Description

Wind Speed

The wind speed sensor for all the Wind Monitors is a helicoid-shaped, four-blade propeller. Rotation of the propeller produces an ac sine wave that has a frequency directly proportional to wind speed. The ac signal is induced in a transducer coil by a six-pole magnet mounted on the propeller shaft. The coil resides on the non-rotating central portion of the main mounting assembly, eliminating the need for slip rings and brushes.

Wind Direction

All of the Wind Monitors use a potentiometer to measure wind direction. The datalogger applies a known precision excitation voltage to the potentiometer element. The output is an analog voltage signal directly proportional to the azimuth angle.

05103 Wind Monitor

05103-45 Alpine Wind Monitor

05106 Wind Monitor-MA

05305 Wind Monitor-AQ

Model Descriptions

05103 Wind Monitor

The 05103 Wind Monitor is a sturdy instrument for measuring wind speed and direction in harsh environments. Its simplicity and corrosion-resistant construction make it ideal for a wide range of wind measuring applications.

05103-45 Alpine Wind Monitor

The 05103-45 Wind Monitor is a rugged instrument designed for harsh alpine conditions. The 05103-45 has a smaller propeller diameter than the other wind monitor models, which minimizes vibration at high wind speeds. To discourage ice buildup, the sensor's housing is black and covered with an ice-resistant coating.

05106 Wind Monitor-MA

The 05106 Wind Monitor-MA is a robust instrument designed for offshore and marine applications. It features waterproof bearing lubricant and a sealed, heavy-duty cable pigtail instead of the standard junction box to make it more durable at marine and off-shore locations.

05305 Wind Monitor-AQ

The 05305 Wind Monitor-AQ is a high performance wind speed and direction sensor designed specifically for air quality measurements. It provides a lower starting threshold, faster response, and higher accuracy than the other wind monitors. However, to achieve the superior performance, the 05305 is less ruggedly constructed.

The Wind Monitor-AQ meets or exceeds the requirements published by the following regulatory agencies:

- ***U.S. Environmental Protection Agency***—Ambient Monitoring Guidelines for Prevention of Significant Deterioration (PSD) and On-Site Meteorological Instrumentation Requirements to Characterize Diffusion from Point Sources
- ***U.S. Nuclear Regulatory Agency***—NRC Regulatory Guide 1.23 Meteorological Programs in Support of Nuclear Power Plants
- ***American Nuclear Society***—Standard for Determining Meteorological Information at Nuclear Power Plants

Mounting

The Wind Monitors can be attached to a CM202, CM202SS, CM203, CM204, CM204SS, or CM206 crossarm via a 17953 NU-RAIL fitting or CM220 Right Angle Mounting Bracket. Alternatively, the Wind Monitors can be attached to the top of our stainless-steel tripods via the CM216 Sensor Mounting Kit. Please note that a lightning rod cannot be used when the CM216 attaches a Wind Monitor atop the tripod's mast. Therefore the CM216 is only recommended for mounting these sensors if the deployment is short term.

Ordering Information

Wind Monitors

05103-L Wind Monitor with user-specified cable length. Specify the cable length, in feet, after the L. For example, 05103-L13 orders a 13 ft lead length. A cable termination option is required (see below).

05103-45-L Wind Monitor, Alpine Version with user-specified cable length. Specify the cable length, in feet, after the L. For example, 05103-45-L13 orders a 13 ft lead length. A cable termination option is required (see below).

05106-L Wind Monitor-MA for marine applications with user-specified cable length. Specify the cable length, in feet, after the L. For example, 05106-L13 orders a 13 ft lead length. A cable termination option is required (see below).

05305-L Wind Monitor-AQ for air quality applications with user-specified cable length. Specify the cable length, in feet, after the L. For example, 05305-L13 orders a 13 ft lead length. A cable termination option is required (see below).

Cable Termination Options (choose one)

-PT Cable terminates in stripped and tinned leads for direct connection to a datalogger's terminals.

-PW Cable terminates in connector for attachment to a prewired enclosure.

-CWS Cable terminates in a connector for attachment to a CWS900-series interface. Connection to a CWS900-series interface allows this sensor to be used in a wireless sensor network.

Mounts

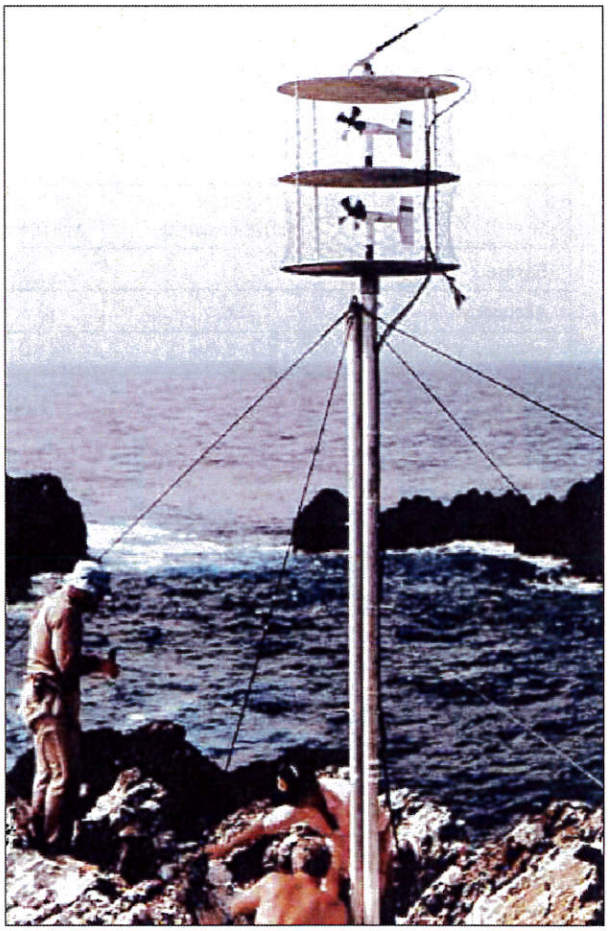
17953 1-in. x 1-in. NU-RAIL Fitting for attaching the Wind Monitor to a a CM202, CM202SS, CM203, CM204, CM204SS, or CM206 crossarm.

CM220 Right Angle Mounting Bracket for attaching the Wind Monitor to a a CM202, CM202SS, CM203, CM204, CM204SS, or CM206 crossarm.

CM216 Sensor Mounting Kit for attaching sensor to atop a CM110, CM115, or CM120 stainless-steel tripod.

Wind Profile Accessory

LLAC4 4-Channel Low-Level AC Conversion Module



An innovative method of discouraging interference from birds was used at a station at St. Peter and St. Paul Rocks (Brazil). Photo courtesy Dr. Silvia L. Garzoli (Director of the Physical Oceanography Division of the Atlantic Oceanographic and Meteorological Laboratory of NOAA).

Recommended Cable Lengths

CM106	CM110	CM115	CM120	UT10	UT20	UT30
4 m (13 ft)	4 m (13 ft)	6 m (19 ft)	7 m (24 ft)	4 m (13 ft)	7 m (24 ft)	10 m (34 ft)
These cable lengths assume the sensor is mounted atop the tripod/tower via a CM202 crossarm.						

Specifications

Wind Speed

	05103 Wind Monitor	05103-45 Wind Monitor-Alpine	05106 Wind Monitor-MA	05305 Wind Monitor-AQ
Range	0 to 100 m s^{-1} (0 to 224 mph)			0 to 50 m s^{-1} (0 to 112 mph)
Accuracy	±0.3 m s^{-1} (±0.6 mph) or 1% of reading			±0.2 m s^{-1} (±0.4 mph) or 1% of reading
Starting Threshold	1.0 m s^{-1} (2.2 mph)		2.4 mph (1.1 m s^{-1})	0.4 m s^{-1} (0.9 mph)
Distance Constant (63% recovery)	2.7 m (8.9 ft)			2.1 m (6.9 ft)
Output	ac voltage (3 pulses per revolution); 1800 rpm (90 hz) = 8.8 m s^{-1} (19.7 mph)			ac voltage (3 pulses per revolution); 1800 rpm (90 hz) = 9.2 m s^{-1} (20.6 mph)
Resolution	(0.0980 m s^{-1})/(scan rate in seconds) or (0.2192 mph)/(scan rate in (seconds)			(0.1024 m s^{-1})/(scan rate in sec.) or (0.2290 mph)/(scan rate in sec.)

Wind Direction

	05103 Wind Monitor	05103-45 Wind Monitor-Alpine	05106 Wind Monitor-MA	05305 Wind Monitor-AQ
Range	0° to 360° mechanical, 355° electrical (5° open)			
Accuracy	±3°	±5°	±3°	
Starting Threshold	1.1 m s^{-1} (2.4 mph)			0.5 m s^{-1} (1.0 mph)
Distance Constant (50% recovery)	1.3 m (4.3 ft)			1.2 m (3.9 ft)
Damping Ratio	0.3			0.45
Damped Natural Wavelength	7.4 m (24.3 ft)			4.9 m (16.1 ft)
Undamped Natural Wavelength	7.2 m (23.6 ft)			4.4 m (14.4 ft)
Output	analog dc voltage from potentiometer—resistance 10 kΩ; linearity 0.25%; life expectancy 50 million revolutions			
Power	switched excitation voltage supplied by datalogger			

Physical

	05103 Wind Monitor	05103-45 Wind Monitor-Alpine	05106 Wind Monitor-MA	05305 Wind Monitor-AQ
Operating Temperature Range	-50° to +50°C, assuming non-riming conditions			
Overall Height	37 cm (14.6 in)			38 cm (15 in)
Overall Length	55 cm (21.7 in)			65 cm (25.6 in)
Main Housing Diameter	5 cm (2 in)			
Propeller Diameter	18 cm (7.1 in)	14 cm (5.5 in)	18 cm (7.1 in)	20 cm (7.9 in)
Mounting Pipe Description	34 mm (1.34 in) outer diameter; standard 1.0 in IPS schedule 40			
Weight	1.5 kg (3.2 lb)	1 kg (2.2 lb)	1.5 kg (3.2 lb)	1.1 kg (2.5 lb)

COMPONENT CATEGORY

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Solar Radiation Shields

For Temperature and Temperature/Relative Humidity Sensors

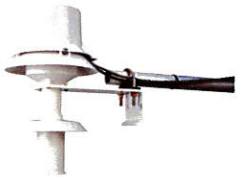
Campbell Scientific offers several solar radiation shields that house one temperature or temperature/relative humidity probe. These solar radiation shields are white to reflect solar radiation. Both naturally-aspirated and fan-aspirated solar radiation shields are available.

The naturally aspirated shields have a louvered construction that allows air to pass freely through the shield, thereby keeping the probe at or near ambient temperature.

Radiation shields that use a fan to draw air across a temperature sensor improve the accuracy of the air temperature measurements, but increase the power requirements of the system.

MAJOR SPECIFICATIONS

	Weight	Dimensions	Compatible Sensors[a]	Mounts to	Power Requirements
41303-5A | 6-Plate Naturally Radiation Shield Shades and protects sensor 	0.4 kg (0.9 lb)	plate diameter: 11.9 cm (4.7 in.) height: 11.4 cm (4.5 in.)	107, 108, 109, CS215, HMP60	crossarm, mast, or user-supplied pipe with a 2.5 cm (1.0 in.) to 5.3 cm (2.1 in.) OD	none
41303-5B | 6-Plate Naturally Radiation Shield with Band Clamp Shades and protects sensor 	0.4 kg (0.9 lb)	plate diameter: 11.9 cm (4.7 in.) height: 11.4 cm (4.5 in.)	107, 108, 109, CS215, HMP60	CM500-series poles or user-supplied with a 5.1 cm (2.4 in.) OD	none
41003-5 | 10-Plate Naturally Radiation Shield Shades and protects sensor 	0.6 kg (1.3 lb)	plate diameter: 11.9 cm (4.7 in.) height: 20.3 cm (8.0 in.)	107[b], 108[b], 109[b], HMP60[c], HC2S3[d]	crossarm, mast, or user-supplied pipe with a 2.5 cm (1.0 in.) to 5.3 cm (2.1 in.) OD	none
41003-5A | 10-Plate Naturally Radiation Shield with Band Clamp Shades and protects sensor 	0.6 kg (1.3 lb)	plate diameter: 11.9 cm (4.7 in.) height: 20.3 cm (8.0 in.)	107[b], 108[b], 109[b], HMP60[c], HC2S3[d]	CM500-series poles or user-supplied with a 5.1 cm (2.4 in.) OD	none

		Weight	Dimensions	Compatible Sensors[a]	Mounts to	Power Requirements
41005-5 | 14-Plate Naturally Radiation Shield Shades and protects sensor		~1 kg (~2 lb)	plate diameter: 11.9 cm (4.7 in.)	HMP155A	crossarm, mast, or user-supplied pipe with a 2.5 cm (1.0 in.) to 5.3 cm (2.1 in.) OD	none
43502-L | Fan-Aspirated Radiation Shield Shades and draws ambient air past sensor for more accurate measurements		1.1 kg (2.5 lb)	length: 33 cm (13 in.) diameter: 20 cm (8 in.)	43347 RTD probe other sensors with up to 0.9 in. (2.5 cm) diameter	crossarm, mast, or user-supplied pipe with a 2.5 cm (1.0 in.) to 5.3 cm (2.1 in.) OD	12 to 14 Vdc @ 500 mA for blower

[a] Only currently-available sensors are listed. Refer to our website for compatibility with retired sensors.

[b] The 41322 adapter is required to install a 107, 108, or 109 probe in a 41003-5.

[c] For the HMP60, the 41322 adapter can be used to mount the sensor in the lower part of the 41003-5. Alternatively, a 41381 extension tube and the 6637 hex plug can be used to mount the HMP60 in a higher part of the shield; this configuration also requires the 18278 cable.

[d] The 27731 hex plug is required to mount the HC2S3 in the 41003-5.

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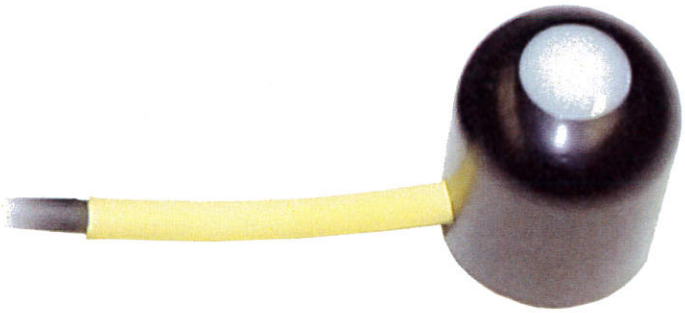
CS300
Pyranometer



Accurate and Dependable

Ideal for long-term deployment in harsh conditions

Overview

The CS300 measures total sun and sky solar radiation for solar, agricultural, meteorological, and hydrological applications. Its spectral range of 300 to 1000 nanometers encompasses most of the shortwave radiation that reaches the Earth's surface. This pyranometer connects directly to our dataloggers. Its output can be measured by all of our dataloggers.

Benefits and Features

- Compatible with all Campbell Scientific dataloggers (including the CR200(X) series)
- Designed for continuous, long term, unattended operation in adverse conditions
- Measurement waveband: 300 to 1100 nm*
- Compatible with the CWS900-series interfaces, allowing it to be used in a wireless sensor network
- Dome-shaped head prevents water from accumulating on the sensor head

Technical Description

The CS300 uses a silicon photovoltaic detector mounted in a cosine-corrected head to provide solar radiation measurements. Its dome-shaped head prevents water from accumulating on the sensor head. To eliminate internal condensation, the sensor head is potted solid and the cable is shielded with a rugged Santoprene casing. The CS300 is calibrated against a Kipp & Zonen CM21 thermopile pyranometer to accurately measure sun plus sky radiation.

Mounting

Accurate measurements require the sensor to be leveled using a 18356 leveling fixture. This leveling fixture incorporates a bubble level and three adjusting screws. The 18356 mounts to a crossarm or a tripod or tower mast using the CM225 mounting stand.

**Sensors calibrated to the 300 to 1100 nm spectral range should not be used under vegetation or artificial lights.*

Ordering Information

Silicon Pyranometer

CS300-L Silicon Pyranometer with user specified cable length; enter the cable length after the L. An 11-ft length (CS300-L11) is recommended for a 3-m mounting height. Must choose a cable termination option (see below).

Cable Termination Options (choose one)

-PT Cable terminates in stripped and tinned leads for direct connection to a datalogger's terminals.

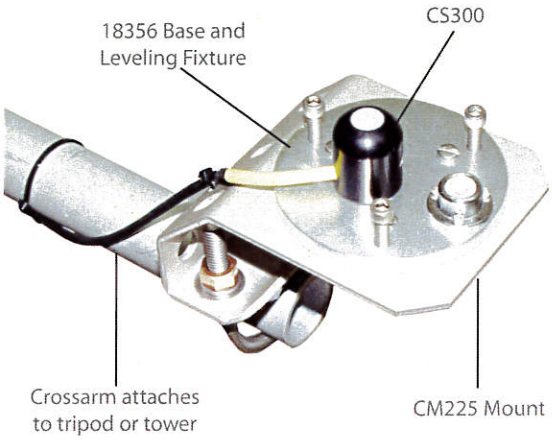
-PW Cable terminates in connector for attachment to a prewired enclosure.

-CWS Cable terminates in a connector for attachment to a CWS900-series interface. Connection to a CWS900-series interface allows this sensor to be used in a wireless sensor network

Accessories

18356 Base and leveling fixture required to level the sensor.

CM225 Mount for attaching to the 18356 and sensor to a tripod, tower, or vertical pipe.



The typical configuration for attaching the CS300 to a tripod or tower is shown above.

Specifications

- Light Spectrum Waveband: 300 to 1100 nm
- Measurement Range: 0 to 2000 W m^{-2} (full sunlight ≈1000 W m^{-2})
- Absolute Accuracy: ±5% for daily total radiation
- Sensitivity: .005 kW m^{-2} mV^{-1}
- Cosine Response: ±4% at 75° zenith angle; ±1% at 45° zenith angle
- Temperature Response: < 1% at 5° to 40°C
- Long-term Stability: < 2% per year
- Operating Temperature Range: -40° to +55°C
- Relative Humidity Range: 0 to 100%
- Diameter: 2.4 cm (0.9 in)
- Height: 2.5 cm (1.0 in)
- Weight: 65 g (2.3 oz)