

# Model 30319 Mast Adapter with 4-Foot Boom

## User's Manual



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# INTRODUCTION

The Model 30319 is designed to mount several different pyranometer models to a variety of towers. The pyranometer models with which the Model 30319 can be used are:

- Model 3016
- Model 3020
- Model 3022
- Model 3120

These sensors can be mounted to any of the following towers using the Model 30319:

- Model 8500 tripod tower
- Model 8518 30' foldover tower
- Model 8519 30' steel tower

The Model 30319's four-foot boom enables the pyranometer to be mounted at a distance from the tower so that no shadows interfere with the sensor's operation. The boom and mast adapter are constructed of galvanized steel, with stainless steel or cadmium plated hardware provided for mounting.

# INSTALLATION

## Boom Mounting

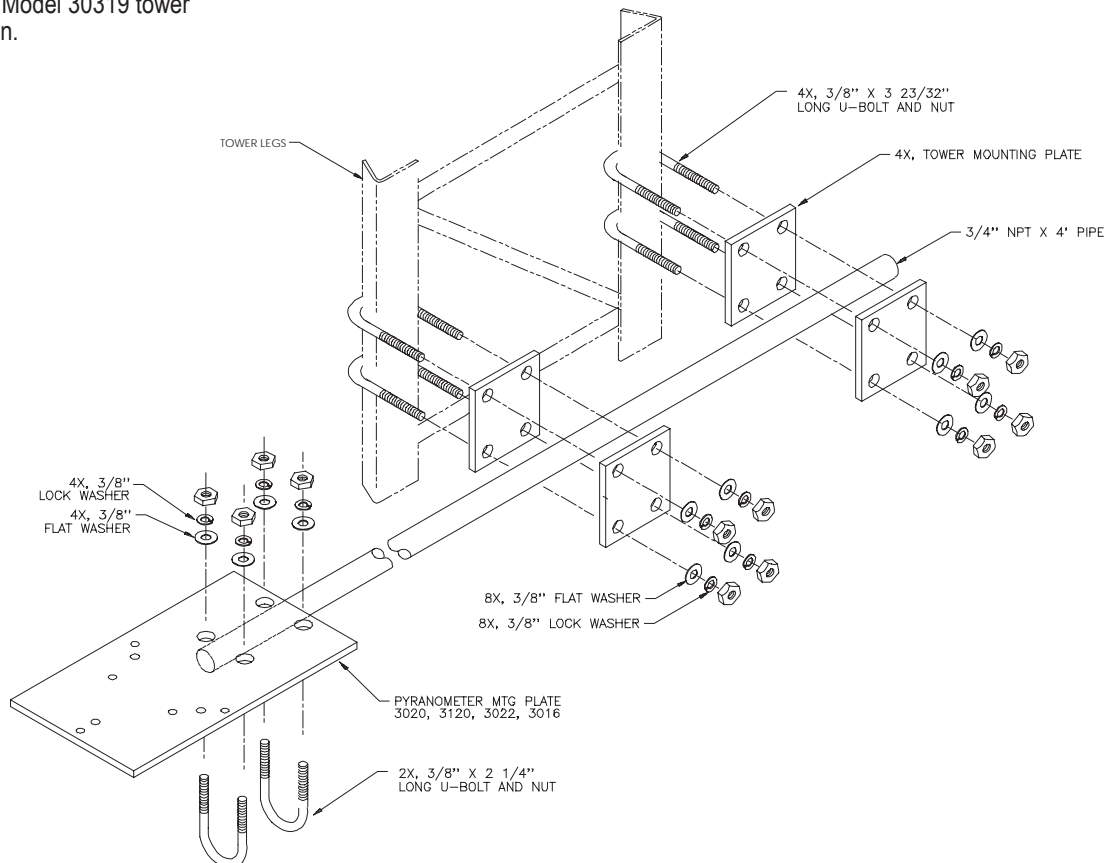
The Model 30319 mounts simply to any of the three supported towers (Models 8500, 8518, and 8519) using U-bolts and universal mounting plates. Refer to **Figure 1** while installing the Model 30319 according to the following instructions.

- 1 Install the tower mounting plates onto the tower legs approximately 1.5 meters above the ground using the U-bolts provided. Do not tighten the U-bolts; leave them loose to allow leveling of the boom.
- 2 Attach the sensor mounting plate to the end of the boom.
- 3 Insert the boom between the pairs of tower mounting plates.

- 4 Using a carpenter's level, adjust the boom until both the boom and the sensor mounting plate are level.
- 5 Tighten the U-bolts securing the tower mounting plates.
- 6 Recheck all hardware to ensure that it is secure and will not vibrate loose under windy conditions.
- 7 Secure all cables to the tower using cable ties.

When removing the boom, remember that the sensor end of the boom will be very heavy. Secure it to the tower with rope or cable before loosening any hardware.

Figure 1. Model 30319 tower installation.



## Sensor Mounting

The following sections provide instructions for mounting each of the supported sensor models to the Model 30319. Slightly different methods are used for each of the sensors, with the exception of the Models 3016 and 3022, which mount in identical fashion.

### Model 3120 Installation

To mount the Model 3120 Pyranometer to the Model 30319 sensor mounting plate, follow the instructions below while referring to **Figure 2**:

- 1 Insert the three bushings into the sensor mounting holes from the underside of the mounting plate.
- 2 Insert the three screws through the bushings from the underside of the sensor mounting plate.
- 3 Install three neoprene washers, one flat washer, and one lock washer over each screw from the upper side of the mounting plate.
- 5 Thread one nut onto each screw; leave the nut loose about midway between the end of the screw and the washers.
- 6 The mounting holes in the base of the Model 3120 are threaded. Thread the three screws into the threaded holes until about 1/4" of the screw extends above the top of the sensor base.
- 7 Lift up on the sensor body so that the screw heads are pulled up tight against the underside of the mounting plate. Using the bubble level in the base of the sensor as a reference, tighten or loosen the three screws individually as necessary to level the sensor.
- 8 Once the sensor is level, hold it in place while tightening the nuts against the washers to secure the sensor. (Note: When installation is complete, the sensor will be raised above the nuts and washers.)

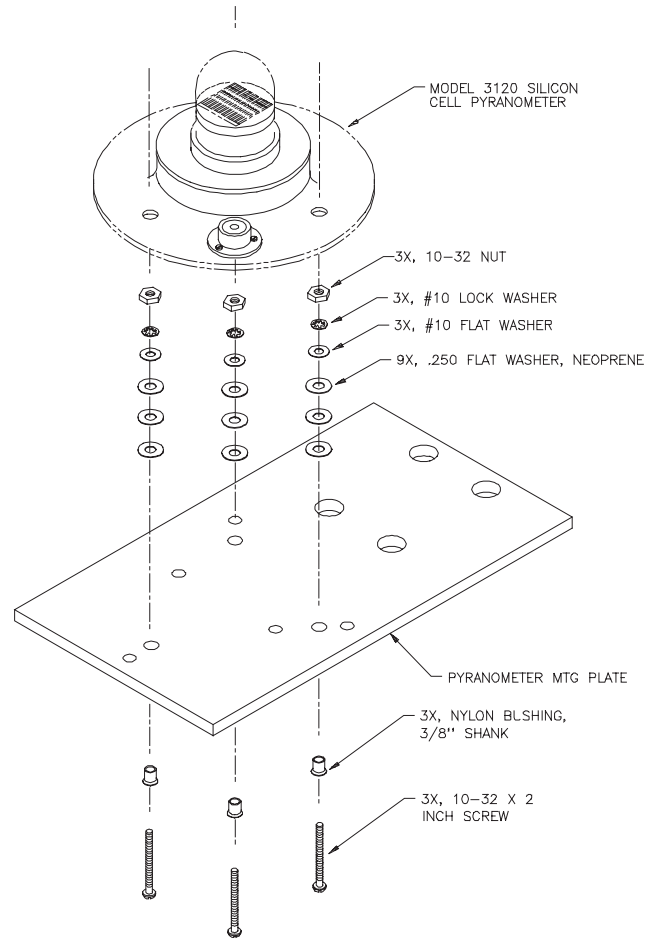


Figure 2. Model 3120 installation.

### Model 3020 Installation

To mount the Model 3020 Pyranometer to the Model 30319 sensor mounting plate, follow the instructions below while referring to **Figure 3**:

- 1 Insert the three screws through the sensor mounting holes from the underside of the sensor mounting plate.
- 3 Install one lock washer and one nut onto each screw from the upper side of the mounting plate, and tighten the nut.

- 4 Thread a second nut onto each screw, followed by a flat washer and a nylon bushing. This second nut will be used for leveling of the sensor.
- 5 Slide the Model 3020 over the three screws while guiding the bushings into the mounting holes in the sensor's base.
- 6 Using the bubble level in the base of the sensor as a guide, adjust the upper of the two nuts on each screw as necessary to level the sensor.
- 7 Secure the sensor by installing one neoprene washer, one flat washer, and one nut over each screw from the upper side of the sensor. Tighten the nuts.

### Models 3016 and 3022 Installation

The Models 3016 and 3022 mount to the Model 30319 in identical fashion. Use the following instructions as a guide for mounting either of the sensors while referring to **Figure 4**.

- 1 Remove the screen from the pyranometer body.
- 2 Insert the two screws through the pyranometer body from above, and then through the mounting holes in the sensor mounting plate.
- 3 Insert one flat washer, one lock washer, and one nut over each screw from below. Leave the nut loose.
- 4 Using the bubble level in the sensor body as a reference, screw the threaded support feet in or out as required to level the sensor.
- 5 Set the sensor shield over the sensor with the sensor bubble protruding through the center hole. Secure with two captive screws.

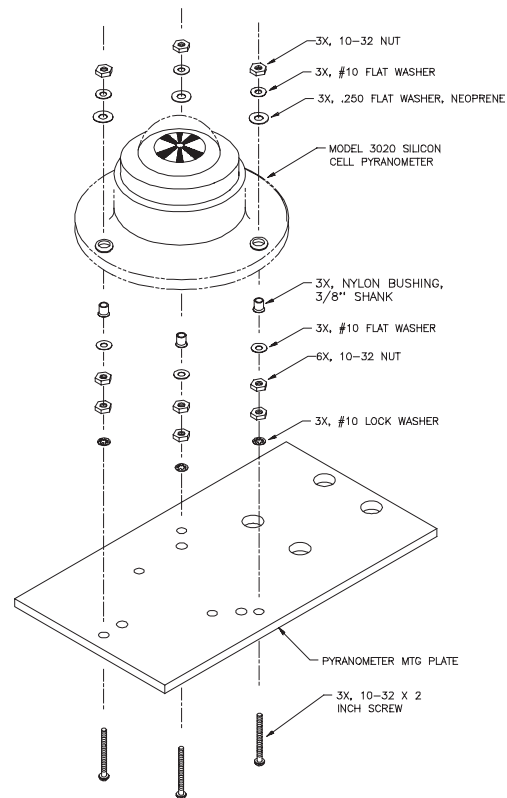


Figure 3. Model 3020 installation.

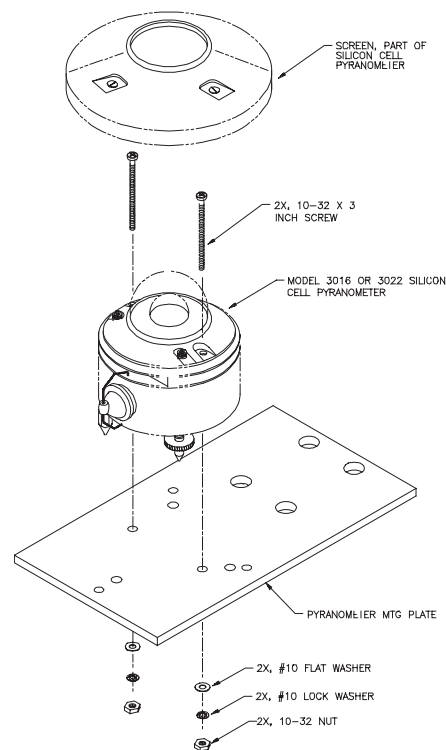


Figure 4. Models 3016 and 3022 installation.

# CALIBRATION

The Model 30319 requires no calibration, other than ensuring that the boom and sensor mounting plate remain level.

# MAINTENANCE

Maintenance of the Model 30319 is limited to inspection of hardware for loose or corroded parts, and periodic leveling of the boom and retightening of the mounting bolts.

Remove and repaint parts that show signs of weathering. Galvanized parts can be wire brushed and sprayed with cold galvanizing paint whenever rust and corrosion appear.



# WARRANTY

Unless specified otherwise, All Weather Inc. (the Company) warrants its products to be free from defects in material and workmanship under normal use and service for one year from date of shipment, subject to the following conditions:

- (a) The obligation of the Company under this warranty is limited to repairing or replacing items or parts which have been returned to the Company and which upon examination are disclosed, to the Company's satisfaction, to have been defective in material or workmanship at time of manufacture.
- (b) The claimant shall pay the cost of shipping any part or instrument to the Company. If the Company determines the part to be defective in material or workmanship, the Company shall prepay the cost of shipping the repaired instrument to the claimant. Under no circumstances will the Company reimburse claimant for cost incurred in removing and/or reinstalling replacement parts.
- (c) This warranty shall not apply to any Company products which have been subjected to misuse, negligence or accident.
- (d) This warranty and the Company's obligation thereunder is in lieu of all other warranties, express or implied, including warranties of merchantability and fitness for a particular purpose, consequential damages and all other obligations or liabilities.

No other person or organization is authorized to give any other warranty or to assume any additional obligation on the Company's behalf, unless made in writing and signed by an authorized officer of the Company.

# SPECIFICATIONS

## *General*

Adapter plate	9.5" x 5.25" x 0.25" zinc plated steel
Boom	3/4" galvanized pipe
Boom length	4 feet
Hardware material	stainless or cadmium plated
Tower leg size	up to 1.5" O.D.
Weight	11 lbs.

## *Sensors Supported:*

- Model 3016
- Model 3020
- Model 3022
- Model 3120

## *Towers Supported*

- Model 8500
- Model 8518
- Model 8519



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30319-001  
ECN 4499  
June, 1995