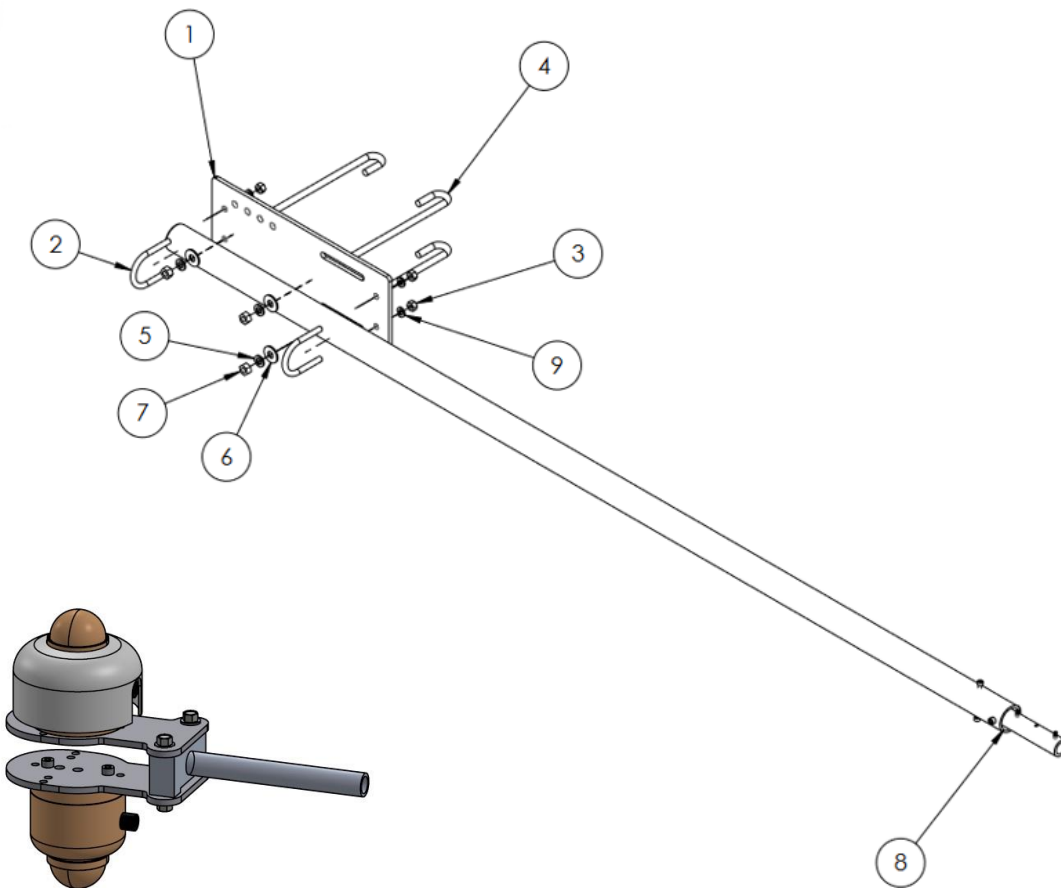




**Introduction**

An albedometer configuration or sensor consists of two identical pyranometers, mounted 180 degrees opposite each other. These are used to measure the global horizontal irradiance (GHI) with the upward facing sensor and reflected horizontal irradiance (RHI) with the downward facing sensor. In turn, this can give the user the solar albedo ratio, or solar reflectance, at a given location.

There are different ways to achieve this setup, and the details depend on your specific needs and the conditions of the installation site.



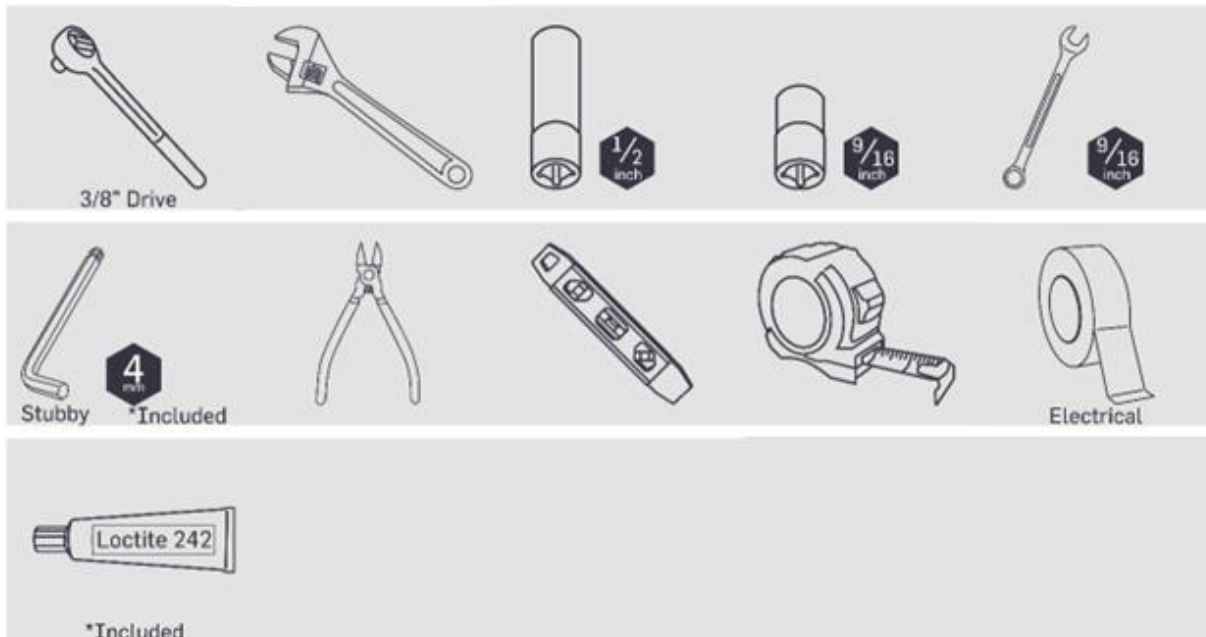
Shown with SR30s installed.



#18868: Parts/BOM

NRG Part Number	Part Description	Part Specification Notes	Qty	Diagram Key
18513	Pile Mounted Albedo Boom Bracket	Hooked Version	1	1
14419	U-Bolt	.3125-18 x 1.75 ID x 2.68 Ht   Galvanized	2	2
14356	Nut	.3125-18, Low Strength	4	3
18533	J-Bolt	8"   Galvanized	3	4
14537	Lock washer	.375   Galvanized	3	5
2814	Washer	3/8", Flat, 7/16"ID, 1"OD, 5/64"T	3	6
1572	Nut	.375-16   Galvanized	3	7
14107	Albedometer Leveling Boom	Sch. 40 aluminum pipe   Leveling   Pre-assembled	1	8
18747	Lock Washer	Split   .3125   Galvanized	4	9
14396	Albedo Pyranometer Mounting Assembly	Universal mounting plate #15498   partially pre-assembled	1	-

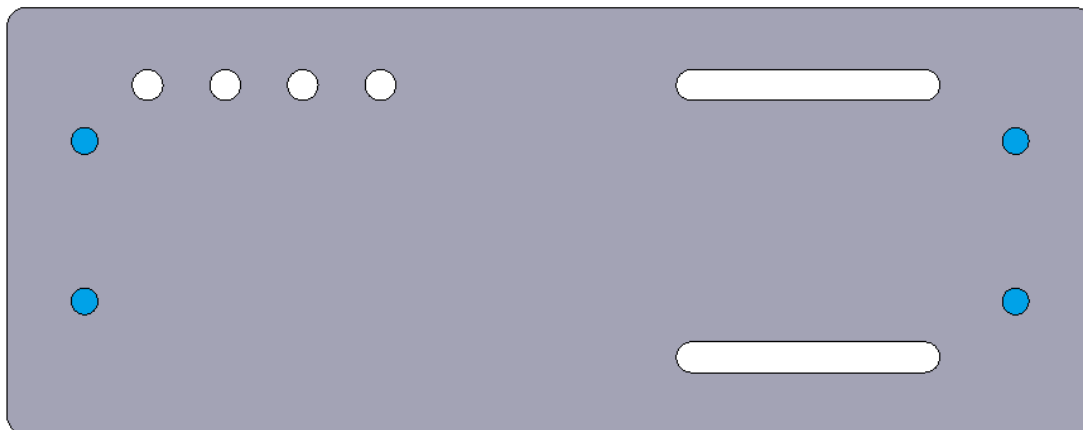
Tools



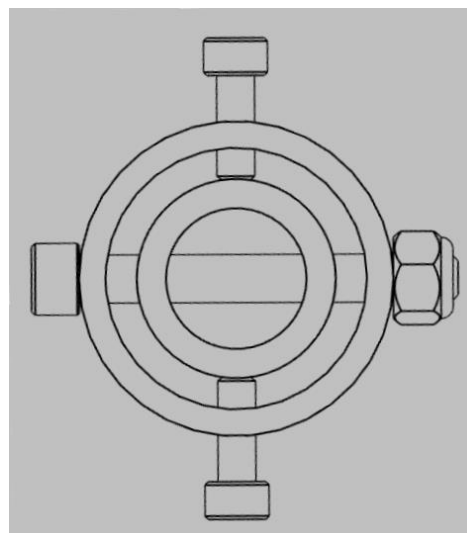
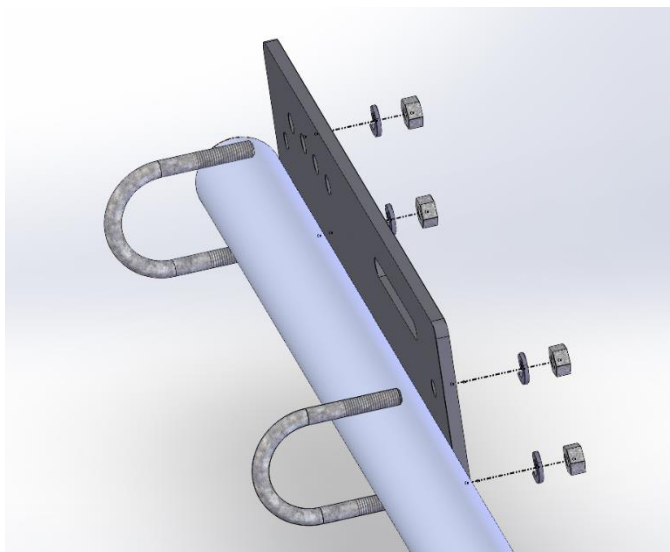


## Pile Mount Bracket and Boom Setup

1. Insert #14419 U-bolts through #18513 bracket using the holes highlighted below in blue. Install #18747 lock washers onto U-bolt legs and hand tighten #14356 nut behind them leaving U-bolt adjustable on the bracket.



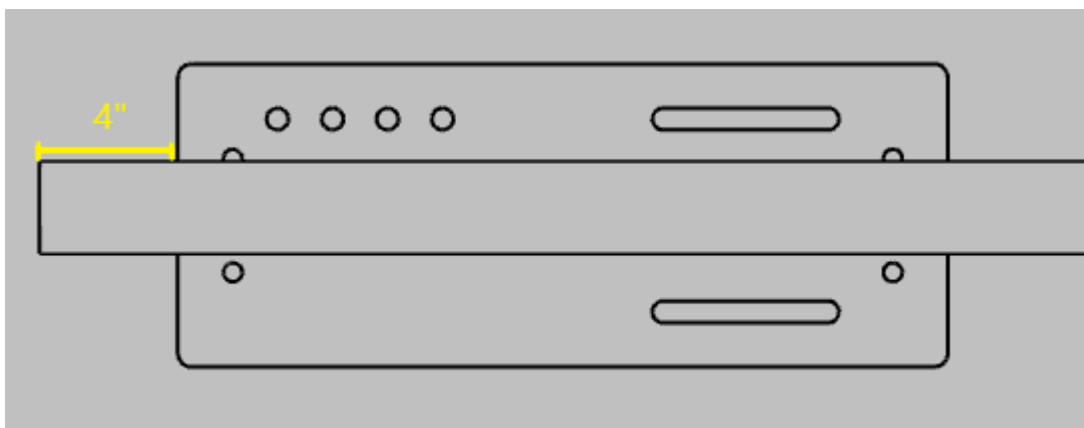
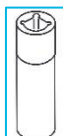
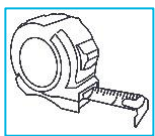
2. Slide the boom through the appropriate U-bolts on the mounting plate. Make sure that the bolt holding the small pipe to the end of the boom is horizontal and that the set-screw holes are vertical.



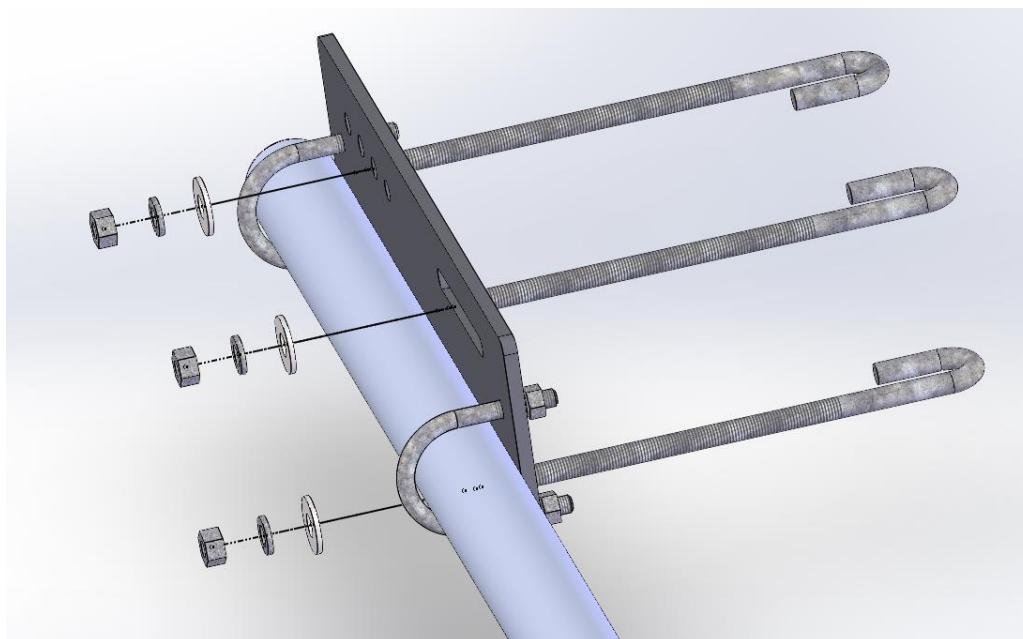


## Solar | Pile Mounted Albedometer | Kit #18868

Determine the appropriate boom length for your application while ensuring that a minimum of 4" remains on the opposite side of the bracket. When the boom is in the desired position, tighten the U-bolts to clamp the boom to the bracket.



3. Insert the (3) #18533 J-hooks into bracket. Slide #2814 washer, #14537 lock washer onto J-hook end, then loosely fasten #1572 nut to prevent washers and hooks from leaving bracket.

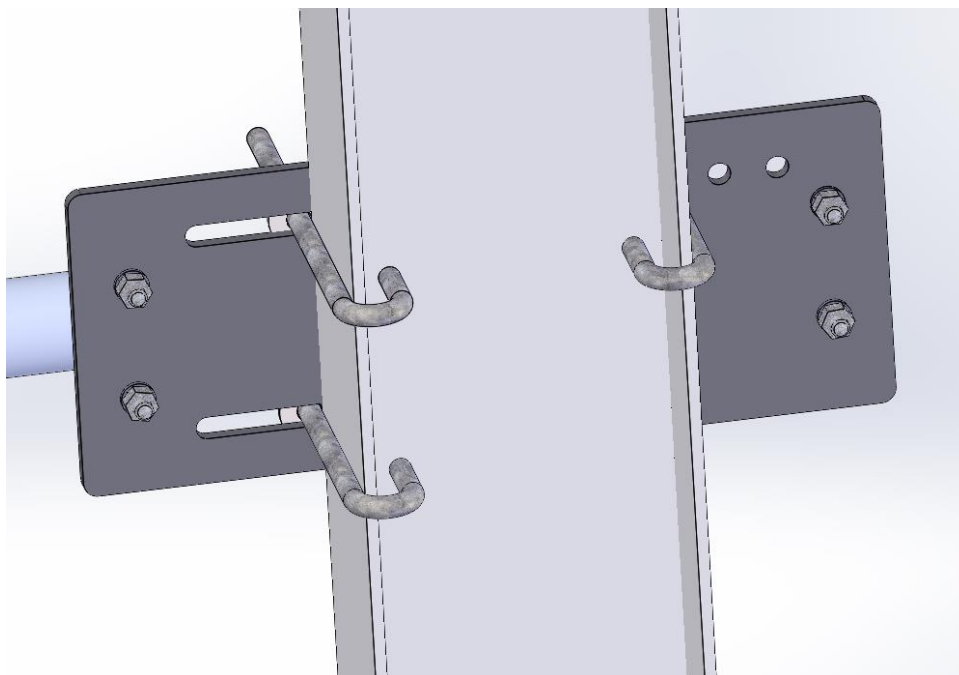
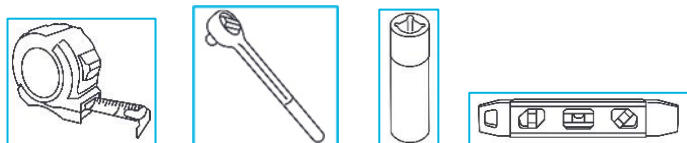




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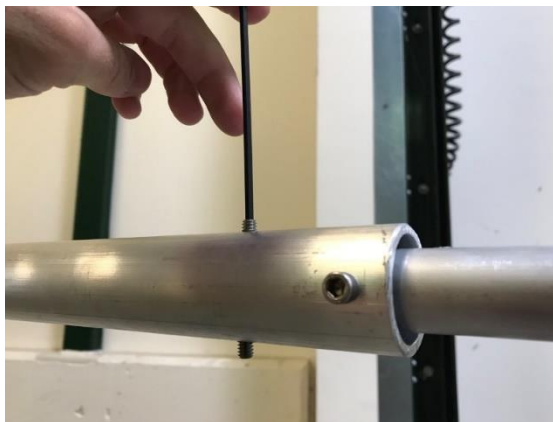
4. Mount assembly to pile with J-hooks hugging the rails of the pile. Tighten J-hooks leaving some room for adjustment. Slide assembly vertically along pile to desired height. Tighten J-hooks further to prevent assembly from sliding down the pile, with just enough tension allow adjusting for boom level.

Place a level on the boom and adjust to level, J-hooks will slide along slots in the bracket to allow for more flexibility and granularity. When the boom is level, tighten the J-hooks to firmly clamp the assembly to the pile.





5. Apply blue Loctite to the threads of two M5x0.8 4mm screws included in the hardware bag. Thread the two screws into the holes on the top & bottom of the boom end.



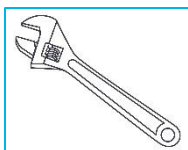
## Pyranometer Mounting



*Pyranometers should be attached to albedo mount #14396 before it is attached to the end of the boom.*

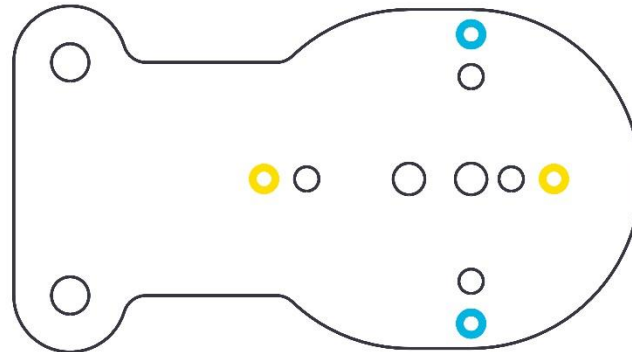
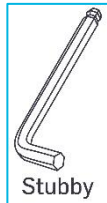
*Hukseflux SR30 pyranometers are used in these instructions, but other models may also be used.*

1. Remove the feet from both pyranometers. A crescent wrench may be needed for the fixed foot.





- 2 Attach the pyranometers to the #15498 mounting plates using the appropriate holes. M5x0.8 10mm screws & a stubby 4mm hex key are included in the kit.



- EKO
- Hukseflux

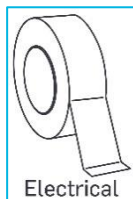


## Solar | Pile Mounted Albedometer | Kit #18868

- Apply blue Loctite to the threads of the remaining three M5x0.8 10mm screws. Thread the set screws into the holes in the top of the mounting adapter at the end of the boom. Slide the albedo mount into the end of the boom. Place the torpedo level in the space between the universal mounting plates. Use the topside of the albedo measurement plate to level the mounting plate assembly side-to-side. Once level, tighten the three M5 screws.



- Connect the sensor cables to each pyranometer. Be careful not to bend the pins inside the connector and not to overtighten the screw collar. Run the sensor wires to the data logger. Spiral wrap them around the boom and tripod tower & secure them with tape.







## Solar | Pile Mounted Albedometer | Kit #18868

- 5 Check that the pyranometers are level on the mount. Each sensor has a bubble level, but a torpedo level can also be used. Adjust by using the two set screws threaded into the end of the boom (NOT the three set screws in the mounting adapter).



### Wiring Pyranometers to Data Logger



*For information about wiring the pyranometers to your data logger, see the sensor wiring map for the data logger or the sensor manufacturer's user manual.*