Solar Modules

We offer solar modules from leading manufacturers in the industry, allowing us to provide the range of sizes and output watts to meet the needs of any user applications. All rigid modules are made with anodized aluminum frames to withstand the most extreme environmental conditions. All modules listed here are designed to charge storage batteries with the use of a charge controller to prevent overcharging, for direct operation of DC loads such as water pumps and fans, as well as for grid-tie application. We do not stock so-called self-regulating modules.

Our best prices per watt are on the higher output modules. The present trend in Canada, and worldwide as well, is for solar arrays consisting of high output modules mounted on tracking support structures. This combination allows the user a 40% increase in average yearly power output.

Medium and small modules are ideal for low power communications, telemetry, agriculture and construction equipment battery charging and maintenance. Most are made like the larger modules with aluminum frames and junction boxes.

Enerwatt Solar Modules

High-performance industrial construction Enerwatt solar modules, using the latest Silicium Nitrate technology in either monocristalline (M) or polycrystalline (P) cells. These panels use corrosion and torsion-resistant anodized aluminum industrial frames to resist our climatic extremes. All these new features make the Enerwatt solar modules your number one choice for all your home, recreational or industrial projects. And they are warranted up to 30 years according to model.

Module Model	Watts	Peak Amps	Peak Volts	Dimensions H"xW"xD"	Wt. Lbs.	Item Code	Price
EWS-50P	50	2.9	17.3	39.0x17.3x1.3	11.7	11-221	$ 399
EWS-85M	85	4.9	17.2	47.6x21.5x1.8	17.7	11-222	$ 599
EWS-100M	100	5.8	17.7	46.7x26.3x1.3	20.8	11-223	$ 752
EWS-130M	130	7.5	17.4	57.7x26.0x1.5	26.0	11-224	$ 819
EWS-170-12/24	170	9.2/4.6	18.3/36.6	62.0x32.5x1.8	37.5	11-225	$ 1,199
EWS-220M-24	220	7.7	36.1	64.4x38.9x1.8	48.0	11-226	$ 1,279

EWS-85M

AEE Solar High-Efficiency Battery Charging Modules

The AE series-HE photovoltaic modules provide cost-effective photo-voltaic power for DC loads with moderate energy requirements. They charge batteries efficiently in virtually any climate. These modules are made with back-contact 18-20% efficient monocrystalline cells laminated behind tempered glass with aluminum frames offering the smallest foot-print available for this size module.

They have an industrial-grade conduit-ready junction box on the back that has knockouts for two standard 1/2" conduit fittings. Typical commercial applications of these modules include remote telemetry, instrumentation systems, security sensors, signals, and land-based navigation aids. They have a 10-year power output warranty.

Module Model	Watts	Peak Amps	Peak Volts	Dimensions H"xW"xD"	Wt. Lbs.	Item Code	Price
AE-80HE	80	4.55	17.6	40.8x20.7x1.4	16.5	11-411	$ 629
AE-90HE	90	5.12	17.6	40.8x20.7x1.4	16.5	11-412	$ 714
AE-100HE	100	5.29	18.9	46.1x27.8x1.4	19.8	11-413	$ 859
AE-120HE	120	6.40	18.9	46.1x27.8x1.4	19.8	11-414	$ 949

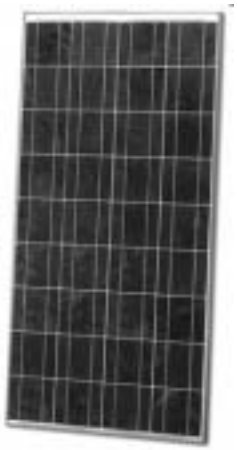
EWS-170-12/24

Solar Modules

Sharp Solar Modules

Sharp modules are designed for a variety of electrical power requirements. The modules have superb durability to withstand rigorous operating conditions. Sharp modules use multi-crystal silicon solar cells except 175 watt module which uses single crystal silicon cells. The modules feature: bypass diodes to minimize power drop caused by shade; a BSF (Back Surface Field) to improve cell conversion efficiency; anodized aluminum frames with pre-drilled mounting holes; 80W and130W modules have conduit ready J-box..

All Sharp modules come with #14 AWG lead wires with male and female Multi-Contact 3 mm connectors. All modules are listed to UL-1703 and cUL, and carry a 25-year limited warranty.



NE-80EJEA

Sharp Model	Watts	Peak Amps	Peak Volts	Dimensions H"xW"xD"	Item Code	Price
NE-80EJA	80	4.63	17.3	47.3x21.1x1.8	11-511	$ 583
ND-130UJF	130	7.5	17.4	59x26.1x1.8	11-512	$ 824
NT-175U1	175	4.95	35.4	62x32.5x1.8	11-513	$ 838
ND-224U1F	224	7.66	29.3	64.6x39.1x1.8	11-514	$ 1,089

Mitsubishi Solar Modules

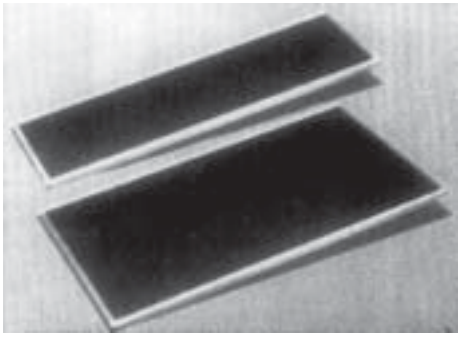
Model	Watts	Peak Amps	Peak Volts	Dimension H"xW"xD"	Item Code	Price
PV-UE125MF5N	125	7.23	17.3	58.9x26.5x1.8	11-112	$ 729
PV-UD180MF5	180	7.45	24.2	65.3x32.8x1.8	11-115	$ 889

NT-175U1

Unisolar Solar Modules

Unisolar's economical amorphous film technology allows them to produce a flexible, lightweight triple junction solar cell deposited on a stainless steel substrate. The finished module is encapsulated in Ultraviolet-stabilized polymers and mounted inside a sturdy anodized aluminum frame. Because there is no glass used in these module's construction, they are a good choice for RV's, boats or anywhere a nearly unbreakable module is called for.

The heart of the uni-power module is the triple junction silicon solar cell. Each cell is composed of three semiconductor junctions stacked on top of each other. The bottom cell absorbs the red light, the middle cell absorbs the green light, and the top cell absorbs the blue light from the sunlight light spectrum. This spectrum-splitting capability is the key to the Unisolar module's higher efficiency. These are covered by a 20 year warranty.



Model #	Watts	Peak Amps	Peak Volts	Dimensions H”xW”xD”	Wt. Lbs.	Item Code	Price
US-64	64	3.88	16.5	53.8 x 29.2 x 1.25	20.2	11-624	$549

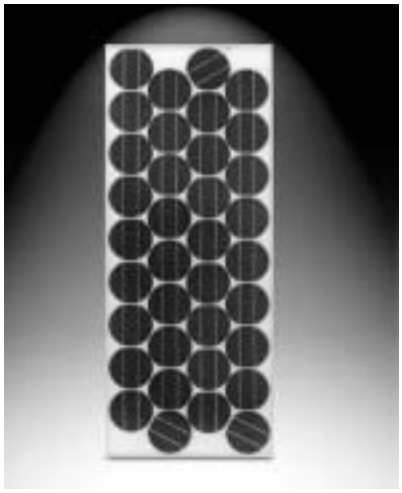
Solar Modules

SunWize Solar Modules

SunWize Solar Modules deliver top-quality perfomance for all photovoltaic (PV) applications including rural electrification, water pumping, telemetry, communications and general battery charging. SunWize modules can be used in single-module and multiple-module installations and are ideal for high voltage grid-tied inverters. Each module consists of 36 solar cells connected in series providing maximum charging power.

Model #	Watts	Peak Amps	Peak Volts	Dimensions H"xW"xD"	Wt. Lbs.	Item Code	Price
OEM20	20	1.22	16.4	20.9x16.9x1.3	6.5	11-311	$ 232
OEM40	40	2.40	16.7	38.3x17.1x1.3	12.5	11-312	$ 349
SW60A	60	3.60	16.7	35.1x22.6x1.3	13.2	11-315	$ 379
SW75A	75	4.50	16.7	50.1x23.2x1.3	17.6	11-316	$ 538
SW90	90	5.1	17.4	56.9x22.8x1.3	23	11-317	$ 674
SW90C	90	3.9	23.0	56.9x22.8x1.3	23	11-321	$ 599
SW100C	100	4.45	22.5	56.9x25.4x1.3	25.5	11-322	$ 694
SW180	180	4.92	36.6	62.20x31.81x1.65	37.5	11-331	$ 834

SW OEM40,20,10



SW85/90

SW180

Manufacturers are upgrading and changing their models frequently therefore if you would like to try to match the make and model of your existing array; call and we will quote the best price available. N.A.P.S. is committed to passing savings to our customers.
Quantity discounts available!

Wattsun Solar Tracker / Mounting Structures

A Wattsun Tracker will, in most instances, increase an array's total yearly power production by 40% , over fixed position mounting. Compare the cost of a tracker against adding 40% more modules to reach the same level of power production. Keep in mind that more modules require more space, larger and more sturdy mounts to hold them.

The Wattsun tracker uses solid-state electronic sensors to drive a motorized linear actuator which adjusts and maintains the azimuth of the array to directly face the sun at better than 1^0 of accuracy. During partly cloudy conditions, this tracker fixes on the maximum sun available. At nightfall, it returns to the easterly sunrise position, ready to immediately start tracking when the sun rises.

Each Wattsun Tracker is pre-wired and ready to mount on the user supplied mounting pole. Frame members are made from anodized aluminum, drilled to fit the solar modules. Solid-state electronics controls the gear drive azimuth head to keep the array on target. Operating voltage is user selectable for 12 or 24 volts, and can be powered by the main storage battery in the power system. A small amount of system power is used to operate the electronics and drive motor.

On arrays with voltages higher than 24 volts, or where a shunt-type charge control is used, a separate module is required to power the tracker control circuitry.

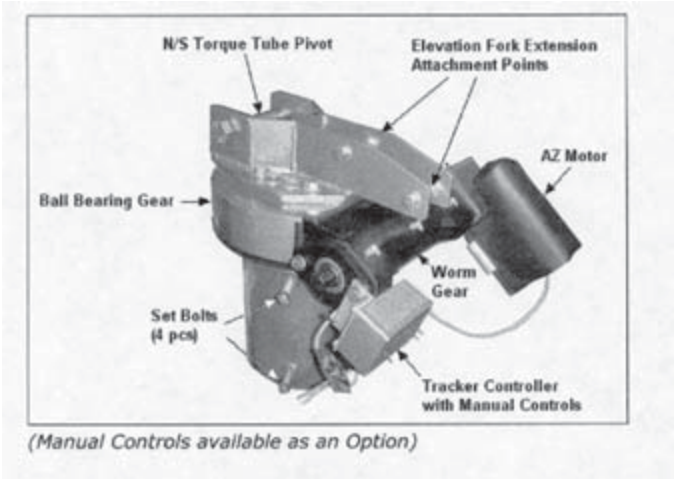
The addition of the dual axis feature eliminates seasonal manual vertical array adjustments and completely automates the tracker. This can add over 5% more to an array's tracked power output.

These trackers are available for most makes of modules in sizes that will hold up to 24 modules. Wattsun Trackers come with a 10 Year limited warranty.

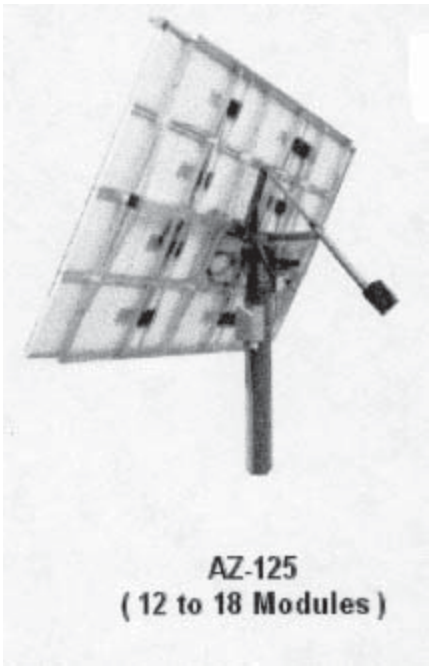
Azimuth Trackers track East to West and rotate about the Zenith. The Dual-Axis Option allows for automatic tracking of the sun's elevation.

AZ-125 - 10 to 18 Modules, approximately 125 Sq. Ft. Array Area **$ 2,969**
AZ-225* - Up to 24 Modules, approximately 225 Sq. Ft. Array Area **$ 5,469 - 6,278**
Prices FOB Albuquerque, NM

Dual Axis Option on AZ models $ 459
***Dual Axis Tracking included**
Please specify which modules when ordering.



(Manual Controls available as an Option)


AZ-125
(12 to 18 Modules)

Trackers do not include mounting pole!

SunTracer

Tracking Module Mount and Charge Controller

The SunTracer can track 1 or 2 modules up to 2sq m and is ideal for small power systems, RVs and water pumping systems. It uses timer-activated gear motors to position the modules toward the sun on a pole mount. It features a 10-amp charge controller for 12- or 24-Volt systems, built-in backup battery for the timer, adjustable charge voltage, and 100 degree motor rotation. The mounting clamp can be bolted to any pole up to 1-1/2" schedule 40 pipe.

SunTracer+	**Tracker with 43" rail**	**13-710**	**$ 499**
SunTracer-pumping	**same, but for batteryless systems**	**13-711**	**$ 529**

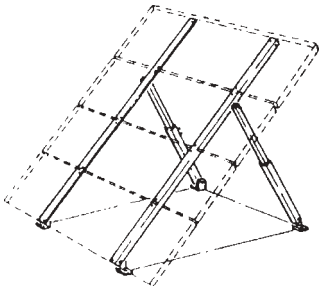
Mounting Racks For Solar Modules

Sturdy economical PV module mounting racks are made from heavy gauge anodized aluminum for harsh environments and can be ground or roof mounted. Roof mounts may be ordered with telescoping tube-in-tube legs for quick and easy seasonal tilt adjustment from 15^0 to 75^0. Chromed steel assembly hardware is provided. You must supply appropriate anchor bolts. Mounts can be shipped UPS or Expedited Parcel. ***(Small modules are sizes from 30 to 60 watts, Medium modules are sizes from 75 to 130 watts, Large modules are sizes from 160 to 240 watts).***
Call with your PV make, model and count. Actual price subject to quote.

Roof / Ground Mounts - RGM

Roof/Ground Mounts are in mill aluminum. Both one-piece (OP) and telescoping-leg (TL) sets are available. Racks come with stainless steel module mounting hardware and Grade 5 zinc-plated rack assembly hardware. Standard mounting feet are made of steel and are hot-dip-galvanized after fabrication. Module rails and legs are made of mill-finish 6061-T6 structural aluminum angle. Some large racks are aluminum channel. Clear anodizing is available as an option. One piece leg (OP) has 3 Set-Points: 30, 45, 60 degrees, telescoping leg (TL) with adjustable tilt range: 20 to 65 degrees.

Specify TPM Rack Model # = ***RGM(PV Qty) - (PV Model) - Tilt leg*** **(OP or TL)**



Standard Ground / Roof Mounting Racks (panel orientation: landscape)

12-201	**UNI-GR/01 for panels 25" wide**	**$ 95**
12-202	**UNI-GR/02 for panels 45" wide**	**$ 149**
12-203	**UNI-GR/03 for panels 70" wide**	**$ 299**
12-204	**UNI-GR/04 for panels 90" wide**	**$ 329**
12-205	**UNI-GR/05 for panels 115" wide**	**$ 435**

Low Profile Ground / Roof Mounting Racks (panel orientation: portrait)

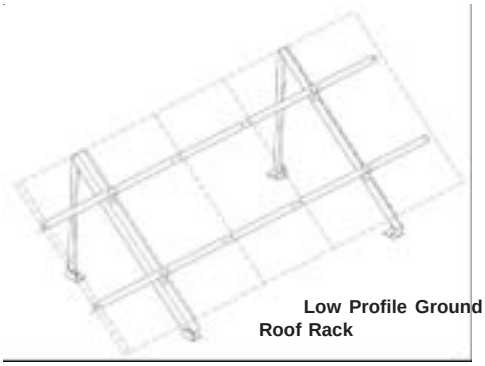
12-214	**UNI-GR/04H for panels 110" wide**	**$ 349**
12-215	**UNI-GR/06H for panels 140" wide**	**$ 529**
12-216	**UNI-GR/06AH for panels 160" wide**	**$ 549**
12-217	**UNI-GR/10H for panels 225" wide**	**$ 829**

Standard Ground or Roof Rack

Direct Power & Water

PowerFab Two-Tier Ground Mounts

Direct Power's Two-Tier Ground Mounts are made from 6061-T6 structural aluminum extrusions with a mill finish. Modules are racked in two rows with module length vertical. Models are available to hold from 4 to 10 modules (depending on module width). The two-tier mount is a cost-effective way to create large ground mounted arrays. Multiple two-tier mounts may be installed next to each other in an east-west direction. These mounts may also be used as roof mounts. The mounts listed have adjustable back legs. Mounts for other brands and sizes of modules and mounts with fixed back legs are available. **Please contact us for information and pricing on mounts indicating brand and size of modules.**



Low Profile Ground / Roof Rack

Typical pricing for TTRGM item no. 12-300-brand-model-no. of panels:

TTRGM for 6 21"x47" panels (75-85W)	**$ 518**
TTRGM for 8 21"x47" panels (75-85W)	**$ 554**
TTRGM for 10 21"x47" panels (75-85W)	**$ 595**
TTRGM for 6 62"x33" panels (175/180W)	**$ 789**
TTRGM for 8 62"x33" panels (175/180W)	**$ 916**
TTRGM for 10 62"x33" panels (175/180W)	**$1,034**

Mounting Racks For Solar Modules

Side-of-Pole Mounts

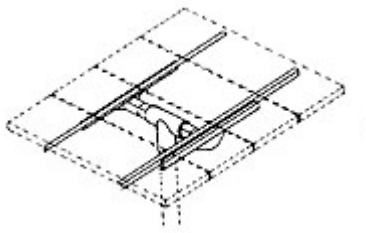
UniRac mounting structures incorporate Solar Mount slotted rails that fit most PV modules on the market and are manufactured of clear anodized (rails and legs) aluminum to withstand corrosion.

Features include:

" 120 mph wind load design " PV module mounting hardware and U-Bolts for pole mounting are included " Stainless steel hardware " 1-year limited warranty " Adjustable tilt 15 to 60 degrees " Models mount 1-4 PV modules

12-401	**SPM with 25" rails**	**$ 137**
12-402	**SPM with 44" rails**	**$ 249**
12-403	**SPM with 52" rails**	**$ 339**
12-404	**SPM with 64" rails**	**$ 354**

Small Top of Pole Mounts



Universal mounts designed using numerically controlled precision machinery, for a precise and efficient installation. Surpassing recommended norms, they easily support snow, ice and even winds of up to 210 km/h (126 mph), made of milled aluminium, with stainless steel hardware included.

12-501 UNI-TP/02 for panels up to 45" wide	**$ 358**
12-502 UNI-TP/03 for panels up to 70" wide	**$ 415**
12-503 UNI-TP/04 for panels up to 90" wide	**$ 449**
12-510 UNI-TP/06 for panels up to 70" wide - 2 rows	**$ 916**
12-511 UNI-TP/08 for panels up to 90" wide - 2 rows	**$ 1,010**

Direct Power & Water

PowerFab Top Pole Mounts (TPM)

PowerFab TPM standard mounts have heavy steel mounting sleeves, elevation pivots and strongbacks that are painted with durable outdoor paint. The module rails are 6061-T6 mill-finish structural aluminum angle. Stainless steel module mounting hard-ware is provided. Standard top-of-pole mounts are adjustable from 15 degrees to 65 degrees in 10-degree increments and fit on schedule-40 steel pipe. These high quality mounts are custom made for any module configuration - so ***call for a quote specifying the make, size and no. of solar panels intended to use.***