



Universal Group

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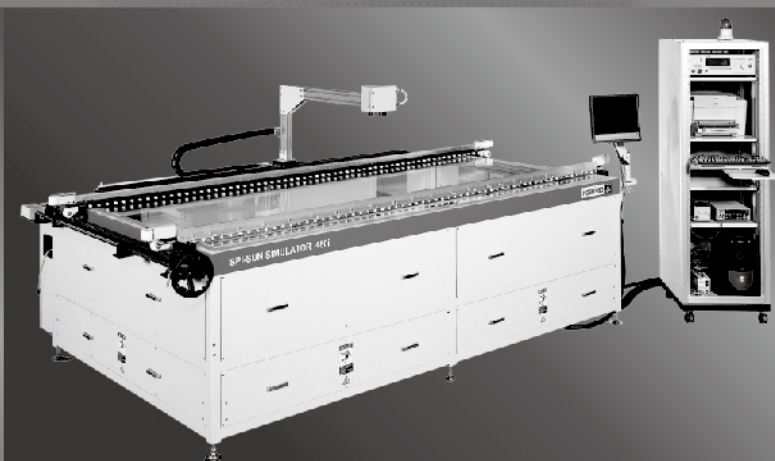
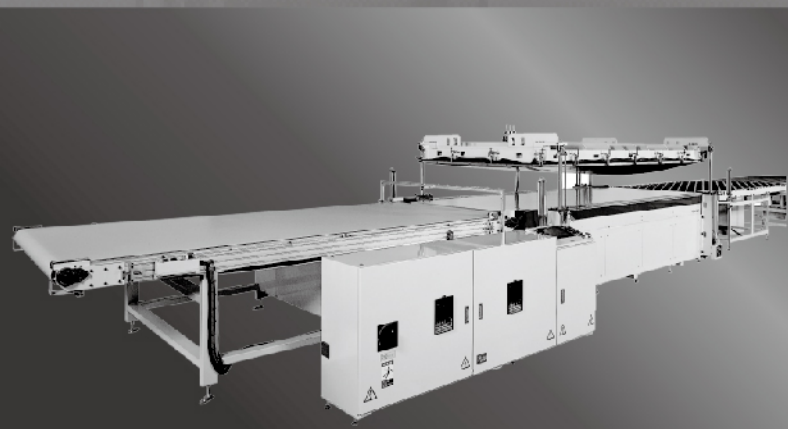
About Universal Hardware Co.

Universal Hardware Co., is a subsidiary of The Universal Group; a leading professional-grade automotive and hand tool manufacturer for over 30 years. Due to our own internal and external global network of factories, channel partners and suppliers, coupled with the unique opportunities that was afforded to Universal Hardware Co; we have decided to diversify our business and become a world-class photovoltaic system integrator, manufacturing solar modules at our own production sites in Taiwan and China. By vertically integrating the strength of the local supply chain, this approach allows Universal Hardware Co. to market products based on customer demands, meeting customer expectations and maximizing the capacity with strategic production planning.

The Universal Group was established in Taiwan in 1980, initiating one of the largest and most vertical/horizontal integration of mechanical tools manufacturers in Asia. The Universal Group diversifies its business activities into 3 different business models- Professional Hand Tools Manufacturing, Hotel Management and Photovoltaic System Manufacturer and Integrator. More details are available on our website at www.uhc.com.tw.

The Universal Hardware Co. advantages:

- 30 Years of Hands On Manufacturing
- Top Quality Machines by Nisshinbo and Komax; together with fully automated conveyer system. Featuring the most advanced heat induction soldering process, deviation of less than 2°C uniformity heating plate on laminator, and AAA grade all range sun simulator.
- Advanced Product Quality Planning- EL Machine, High Pot Testing, Thermal Cycle and Hot Spot Testing and Loading Test.
- Top Performance Solar Cells from Major Manufacturers
- Top Module Components from established and seasoned Supply Chain Partners
- Craftsmanship Evaluations
- Real Module Output as Promised by Nisshinbo AAA sun simulator
- Tested Field Performance
- 25 Years Transferable Power Output Warranty
- 5 Years Limited Parts and Labor Warranty





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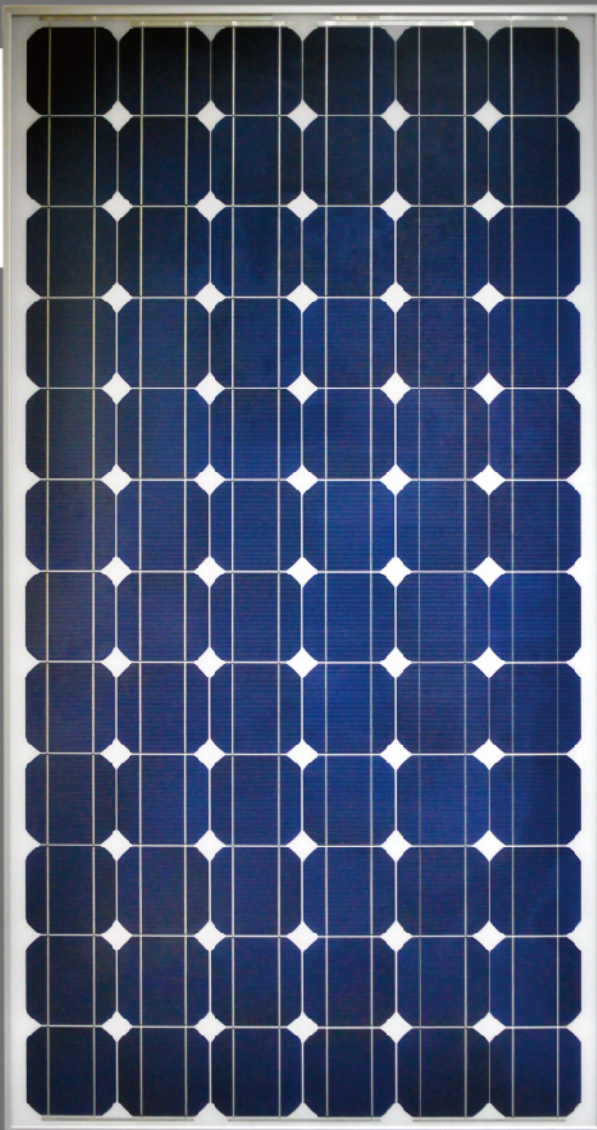
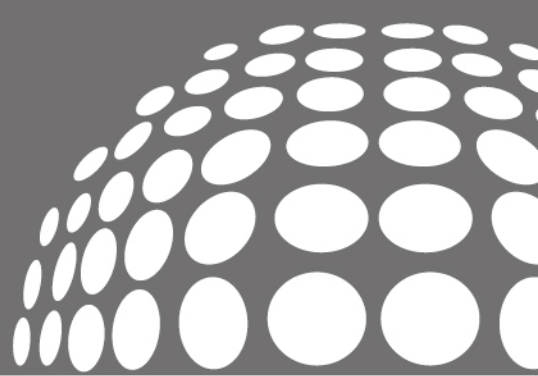
Product Assortment

Solar energy is the most accessible and obtainable among all types of renewable energies. To optimize the use of solar energy at the convenience of the general public, UNIVERSAL HARDWARE CO. offers a complete line up of solar modules ranging from 40W to 290W. These quality-approved panels are applicable to meet different needs of solar power wherever installed and for whatever climate condition. For detailed information, please contact us at james@uhc.com.lw





Universal Group



M5 MODULE SERIES

50 - 60 / 70 - 85 / 160 - 185 W

Dynamic Application. Proven Reliability.

UHC 5" mono-crystalline solar modules

Key Features

- Series range from 50W to 185W of power output
- Designed for different requirements of solar electricity
- Applicable for both portable or fixed mounting situations
- Superior for independent systems or remote areas
- Bypass diode, minimizes the power drop caused by shade
- Junction box for easy electrical connections in the field
- Max. system voltage 1000V



*The below data are average figures presently measured at STC.

*STC (STANDARD TESTING CONDITIONS) : 1000W/m², AM1.5, 25°C.

UHC Item No.	Max.Power (W)	Max.Power Voitage, Vmp(V)	Max.Power Current, Imp(A)	Open Circuit Voltage, Voc(V)	Short circuit Current(A)	Module efficiency(%)	No. of cells and connections (in Series)	Dimensions (mm)	Weight (kg)
UHC050M5-3600	50	16.80	2.97	20.66	3.73	12.32	36	820*545*30	5.5
UHC055M5-3600	55	17.00	3.24	20.91	3.62	12.38	36	820*545*30	5.5
UHC060M5-3600	60	17.20	3.48	21.15	3.90	13.42	36	820*545*30	5.5
UHC070M5-3600	70	16.90	4.14	21.45	4.45	11.61	36	1200*550*35	8.0
UHC080M5-3600	80	17.64	4.54	21.88	4.98	12.12	36	1200*550*35	8.0
UHC085M5-3600	85	18.05	4.71	21.94	5.29	12.88	36	1200*550*35	8.0
UHC160M5-7200	160	30.04	5.26	37.70	5.94	12.45	72	1580*809*35/45/50	14.9
UHC165M5-7200	165	34.30	4.81	43.05	5.27	12.84	72	1580*809*35/45/50	14.9
UHC170M5-7200	170	34.76	4.89	43.54	5.38	13.23	72	1580*809*35/45/50	14.9
UHC175M5-7200	175	34.65	5.05	44.10	5.47	13.62	72	1580*809*35/45/50	14.9
UHC180M5-7200	180	35.09	5.13	44.31	5.15	14.01	72	1580*809*35/45/50	14.9
UHC185M5-7200	185	35.60	5.20	44.50	5.58	15.20	72	1580*809*35/45/50	14.9

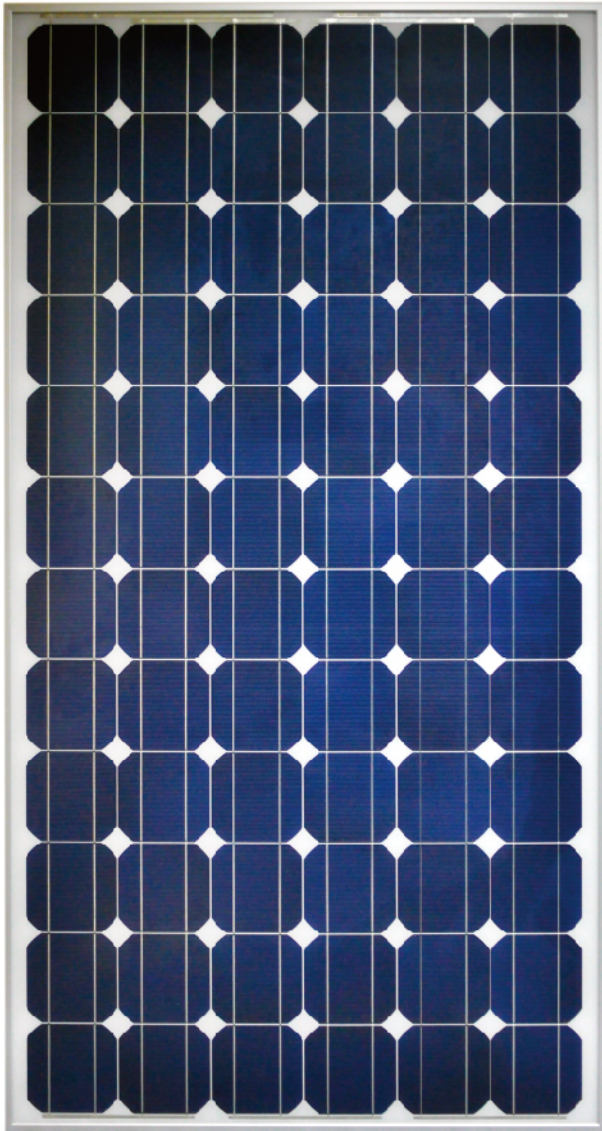
NOTE: Product specifications are subjected to change without prior notice.



Universal Group



In Progress



M6 MODULE SERIES 200 - 280 W Maximum Output. Highest Return.

UHC 6" mono-crystalline solar modules

Key Features

- Most powerful solar modules of all classes
- Highest efficiency and performance
- Maximum solar electricity generation
- Ideal for construction of solar plant
- Best IRR at most cost and time saving per installation
- High reliability with +/-3% power output tolerance
- Withstands extreme weather conditions
- Max. system voltage 1000V



*The below data are average figures presently measured at STC.

*STC (STANDARD TESTING CONDITIONS) : 1000W/m², AM1.5, 25°C.

UHC Item No.	Max.Power (W)	Max.Power Voltage, Vmp(V)	Max.Power Current, Imp(A)	Open Circuit Voltage, Voc(V)	Short circuit Current(A)	Module efficiency(%)	No. of cells and connections (in Series)	Dimensions (mm)	Weight (kg)
UHC200M6-6000	200	29.00	6.90	36.30	7.65	12.29	60	1650*992*50	19.5
UHC210M6-6000	210	29.00	7.25	36.50	7.90	12.91	60	1650*992*50	19.5
UHC220M6-6000	220	29.40	7.49	36.80	8.02	13.52	60	1650*992*50	19.5
UHC230M6-6000	230	29.80	7.72	36.90	8.30	14.14	60	1650*992*50	19.5
UHC240M6-7200	240	30.40	7.91	37.10	8.58	14.66	60	1650*992*50	19.5
UHC260M6-7200	260	35.00	7.43	44.30	8.04	13.39	72	1656*992*50	23.0
UHC270M6-7200	270	35.00	7.71	44.80	8.14	13.90	72	1656*992*50	23.0
UHC280M6-7200	280	35.20	7.95	44.80	8.33	14.43	72	1656*992*50	23.0

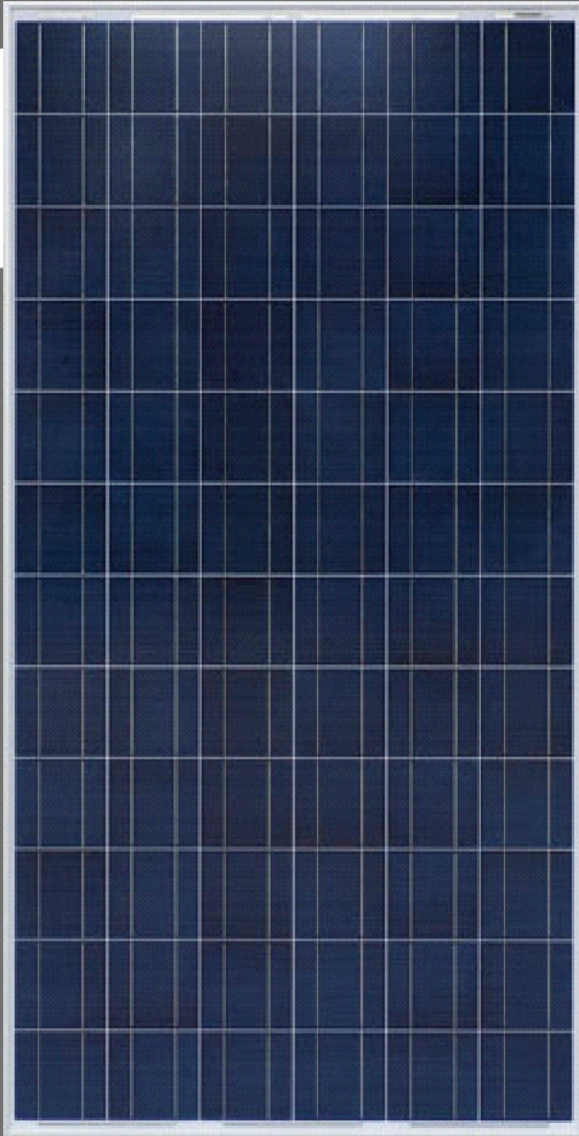
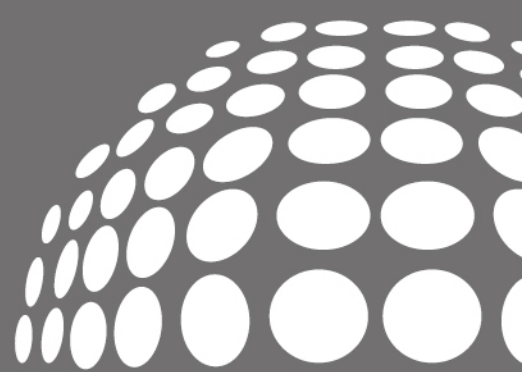
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Universal Group



In Progress



P6 MODULE SERIES

200 - 290 W

Premium Quality. Extra Powerful.

UHC 6" poly-crystalline solar modules

Key Features

- Mainstream technology empowers high electricity output
- Ideal for residential and commercial grid system
- Balance of size and weight to power output
- Supported by most major mounting structures
- High reliability +/-3% power output tolerance
- Withstands extreme weather conditions
- Max. system voltage 1000V



*The below data are average figures presently measured at STC.

*STC (STANDARD TESTING CONDITIONS) : 1000W/m², AM1.5, 25°C.

UHC Item No.	Max.Power (W)	Max.Power Voltage, Vmp(V)	Max.Power Current, Imp(A)	Open Circuit Voltage, Voc(V)	Short circuit Current(A)	Module efficiency(%)	No. of cells and connections (in Series)	Dimensions (mm)	Weight (kg)
UHC200P6-6000	200	28.60	6.98	36.50	7.65	12.29	60	1650*992*50	19.5
UHC210P6-6000	210	29.00	7.24	36.50	7.88	12.91	60	1650*992*50	19.5
UHC220P6-6000	220	29.50	7.45	37.00	8.10	13.52	60	1650*992*50	19.5
UHC230P6-6000	230	29.80	7.73	37.00	8.22	14.14	60	1650*992*50	19.5
UHC250P6-7200	250	34.30	7.29	43.20	7.82	12.88	72	1656*992*50	23.0
UHC260P6-7200	260	34.80	7.47	43.60	7.90	13.39	72	1656*992*50	23.0
UHC270P6-7200	270	35.20	7.67	43.80	8.10	13.90	72	1656*992*50	23.0
UHC280P6-7200	280	35.20	7.95	44.10	8.31	14.43	72	1656*992*50	23.0

NOTE: Product specifications are subjected to change without prior notice.



Solar System Matrix

Easy access to your own Solar Power

We provide simple, DIY solutions solution to meet your own solar system demands; taking into consideration: space availability, power capacity and budget.

Special Features:

- 3 sizes of high-efficiency solar panels (60W, 90W & 135W)
- Work with world brand inverters in field tests
- Packaged installation kits with media support

60W Panel

System Size	Panel Quantity	Inverter Type	Package Measurement	Installation Area Required (m ²)
300W	5	Morningstar	0.13CBM / 49.5KGS	3.35
480W	8	Morningstar	0.17CBM / 66KGS	5.36
960W	16	KACO	0.28CBM / 110KGS	10.73
1.5KW	25	KACO	0.4CBM / 160KGS	16.76
1.98KW	33	SMA	0.52CBM / 209KGS	22.12
2.46KW	41	SMA	0.61CBM / 247.5KGS	27.48
3KW	50	SMA	0.73CBM / 297KGS	33.52

90W Panel

System Size	Panel Quantity	Inverter Type	Package Measurement	Installation Area Required (m ²)
270W	3	Morningstar	0.16CBM / 46KGS	2.97
450W	5	Morningstar	0.21CBM / 62KGS	4.95
990W	11	KACO	0.34CBM / 110KGS	10.89
1.44KW	16	KACO	0.48CBM / 158KGS	15.84
1.98KW	22	SMA	0.62CBM / 206KGS	21.78
2.43KW	27	SMA	0.71CBM / 238KGS	26.73
2.97KW	33	SMA	0.85CBM / 286KGS	32.67

135W Panel

System Size	Panel Quantity	Inverter Type	Package Measurement	Installation Area Required (m ²)
270W	2	Morningstar	0.2CBM / 46KGS	2.91
405W	3	Morningstar	0.23CBM / 58KGS	4.36
945W	7	KACO	0.37CBM / 106KGS	10.18
1.485KW	11	KACO	0.54CBM / 146KGS	16.00
1.89KW	14	SMA	0.64CBM / 202KGS	20.36
2.43KW	18	SMA	0.74CBM / 238KGS	26.18
2.97KW	22	SMA	0.88CBM / 286KGS	32.00



The Universal Group.

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