

Absolyte .....	134	DC-DC converter .....	99	hydroelectric generators.....	66, 67
AccuManager .....	189	Delta .....	142	hydrometers.....	128, 141
AEE Solar .....	16, 18, 27, 32, 33, 119, 146, 184, 186	desulfators.....	141	hydropower information .....	64, 65
AIR X wind generators .....	61	digital meters.....	119	IBE .....	133, 139
American Solar Electric .....	181	Direct Power & Water.....	51-55, 136, 137	insolation maps .....	194-199
amp meters .....	119, 120	disconnects.....	148	inverter bypass switch .....	153
amp-hour meters .....	121, 122, 128	diversion loads .....	118	inverter information .....	68, 69
Apollo Solar .....	87, 106	Dr. LED.....	178	inverters.....	68-99
Appropriate Power .....	185	East Penn.....	130, 135	inverters, commercial.....	80-83
APRS.....	59	EL-SID.....	176	inverters, dual-function .....	69
array combiners.....	144-146	Enphase.....	70	inverters, grid-tie.....	70-86
array sizing.....	14, 15	E-Panel.....	100, 101	inverters, off-grid .....	87-98
array wiring.....	159-161	ES&D.....	67	IOTA.....	140, 153
ASC.....	113	evaporative coolers, DC.....	187	IronRidge .....	50
Atkinson.....	115,116, 119	Evergreen Solar.....	20	KACO .....	79
autotransformers .....	99	EverLite.....	179	Kestrel .....	59
backpacks.....	190	Exeltech.....	94	Kill-a-Watt .....	120
batteries .....	126-141	fans.....	184-187	kWH meters .....	120
batteries, flooded.....	132, 133	fans, DC .....	185, 186	Kyocera .....	26
batteries, sealed.....	130, 134	Fat Spaniel .....	124, 125	lamps, DC .....	180
battery cables .....	156	flashing.....	42	lamps, fluorescent .....	179-181
battery chargers – AAA, AA, D.....	189	Flexcharge.....	154	lamps, halogen .....	177
battery chargers .....	139, 140	FLEXnet.....	89	lamps, incandescent .....	180
battery clip extension cord.....	162	FLEXware.....	89, 90, 102, 103, 144	lighter plugs .....	162
battery enclosures.....	136-138	float switch.....	164	lighting controllers.....	114-115
Battery Power Solutions .....	141	Flowlight.....	172	lighting .....	177-181
battery selector switch.....	152	fountain pump .....	165	lighting, outdoor.....	181
battery sizing.....	126, 128,129	freezers.....	182, 183	linear current boosters.....	164
battery vent fans.....	141	Fronius .....	74, 75	load centers .....	150, 151
BD-2.....	141	fuse holders .....	90, 147	low temp overvoltage bypass.....	69
Blue Sky Energy .....	108, 109	fuses .....	147, 149, 152	LVM.....	168
Bogart Engineering .....	122	generator start controller .....	116	lugs.....	143, 157
C-12, C-40, C-60.....	114	Global Solar .....	28	Magnum .....	92, 93, 100, 116
cable clips.....	161	glossary .....	200, 201	Mastech .....	119
ceiling fans .....	184	GNB .....	134	MidNite Solar .....	100, 104, 136, 144
CFL lighting.....	180	grid-tie solar systems .....	4	Mitsubishi .....	22
charge controllers.....	106-118	grid-tie system design .....	8, 9	MK Battery .....	130, 131
Citel.....	142	grid-tie systems w/ backup.....	11,17	modified sine wave inverters .....	93, 96
circuit breakers.....	105, 149, 151	grounding .....	142, 143	monitoring services.....	124, 125
combiners breakers .....	147	Grundfos .....	165-167	Morningstar.....	94, 110-112, 117
combiner boxes .....	144, 146	GSCM .....	116	motion sensor.....	115, 154
connectors .....	155	Harris.....	67	mounting structures.....	31-58
Co-Pilot light.....	179	Hartell .....	176	mounting structures, grnd .....	43-47, 54-55
CreoTecc .....	35	heat shrink tubing.....	157	mounting structures, pole.....	48-53
crimpers.....	161	High Lifter .....	175	mounting structures, roof/grnd .....	44-47
DC disconnects .....	104	Hi-Power.....	66	mounting structures, two-tier .....	54
DC timer.....	154	Hoyt.....	120	MPPT .....	106-111
		HuP Solar-One .....	133	Multi-Contact.....	159-161

- multimeter ..... 119
- Natural Light ..... 186
- Obvius ..... 123
- off-grid system design ..... 12-15
- Osram ..... 178
- OutBack ..... 84, 88-90, 99, 102, 103, 105-107, 144
- outdoor lighting ..... 181
- outlets ..... 155
- Pentametric meter ..... 122
- Perko ..... 152
- Phocos ..... 115
- portable power ..... 188-190
- PowerFab ..... 51-55
- PowerFilm ..... 29, 30
- PowerHub ..... 97
- Powerpack ..... 97, 188
- Power Panels ..... 99
- Power Up ..... 179
- Pulse ..... 144
- pump control ..... 168, 169
- pump wire ..... 154, 158
- pump, fountain ..... 165
- pump, jet ..... 170
- pump, pool ..... 170
- pumps ..... 163-176
- pumps, centrifugal, DC ..... 170
- pumps, circulator ..... 176
- pumps, pressure booster ..... 171, 172
- pumps, submersible AC ..... 165
- pumps, submersible DC ..... 169
- pumps, submersible ..... 165-169
- PV Powered ..... 78
- PV modules ..... 20-30
- PV modules, portable ..... 28-30
- PWM ..... 110-115
- QuickCharger ..... 189
- Quick-Cote ..... 140
- Quick Mount PV ..... 34
- RAB ..... 154
- radio ..... 189
- RapidRac ..... 47
- RCH Fanworks ..... 184
- REC Solar ..... 21
- refrigerators ..... 182-183
- relays and controls ..... 117
- Rennsteig ..... 161
- Rolls Battery ..... 132
- rope light ..... 179
- RPPS ..... 18, 19
- RV charge controllers ..... 110, 113
- RV generator start ..... 116
- RV roof connector ..... 162
- S-5! ..... 43
- safety labels ..... 147
- Samlex ..... 95, 96, 99, 119, 140
- SatCon ..... 81
- SB connectors ..... 157
- SHURflo ..... 168, 174
- sine wave inverters ..... 85, 87, 92, 94, 95
- Skystream ..... 63
- SMA ..... 72, 73, 83, 146, 147
- SnapRack ..... 32, 33
- SolaDeck ..... 145
- solar array sizing ..... 14, 15
- Solar Boost ..... 108, 109
- Solar Chill ..... 187
- Solar Converters ..... 99, 164
- solar fans ..... 186
- solar insolation, US cities ..... 194
- solar lighting ..... 179, 181
- Solar Stream ..... 165
- SolarMount ..... 36-39, 43
- Solar Slowpump ..... 173
- SolarWorld ..... 23
- Solectria ..... 79, 80
- Soltronix ..... 189
- Southwest Windpower ..... 62, 63
- Specialty Concepts ..... 113
- SQFlex ..... 166, 167
- Square-D ..... 148-153
- standoffs ..... 32, 33, 42, 46
- strain reliefs ..... 161
- submersible pumps ..... 165-169
- submersible pumps, AC ..... 165
- submersible pumps, DC ..... 169
- SunDanzer ..... 183
- SunFrame ..... 46
- Sun Frost ..... 182, 183
- SunGuard ..... 112
- SunLight ..... 110
- SUNLINQ ..... 28
- Sunny Beam ..... 73
- Sunny Boy ..... 72
- Sunny Island ..... 73
- Sunny Tower ..... 83
- SunPumps ..... 169-171
- SunSaver ..... 110, 111
- SunTracer ..... 57
- surge protection ..... 142
- Surrette Battery ..... 132
- system design, grid-tie ..... 8-11
- system design, off-grid ..... 12-15
- terminal blocks ..... 155
- thermostats ..... 185
- Thin-Lite ..... 180
- timer ..... 154
- trackers ..... 56-58
- transfer switches ..... 153
- Trimetric meter ..... 122
- Trojan ..... 131
- Two Seas (now IronRidge) ..... 50
- Tyco ..... 160, 161
- U-LA ..... 46
- Unirac ..... 36-50, 143
- volt meters ..... 119
- voltage-controlled switches ..... 117
- Voltaic ..... 190
- water heating elements ..... 118
- Water Miser battery cap ..... 138
- water pumps ..... 163-176
- Wattsun ..... 56, 57
- WebBox ..... 73
- WEEB grounding products ..... 143
- Whisper ..... 62
- Wiley Electronics ..... 143, 145
- wind generators ..... 59-63
- wind generators, grid-tie ..... 63
- wind generators, off-grid ..... 61-62
- wind meter ..... 59
- wind power information ..... 59
- wire ..... 158
- wire loss tables ..... 192-193
- wiring information ..... 191
- Xantrex E-panels ..... 101
- Xantrex GT ..... 77, 80
- Xantrex Trace (TR) ..... 96
- Xantrex XW ..... 85
- Xantrex ..... 77, 80, 85, 86, 96, 97, 99, 101, 104, 121, 139, 187
- XPower ..... 97, 187
- Zephyr ..... 141
- Zomeworks ..... 44, 58

## ADVERTISERS

Apollo Solar .....	208
Direct Power & Water .....	35
Enphase .....	71
Evergreen Solar .....	back cover
Fronius .....	76
Magnum Energy .....	91
MidNite Solar .....	101
MK Battery .....	131
Morningstar .....	112
OutBack Power .....	2
REC Solar .....	24, 25
SMA America .....	98
Solar Energy International .....	7
SolarWorld .....	inside front cover
Southwest Windpower .....	60
Surrette Battery .....	inside back cover
Unirac .....	31
Xantrex .....	86
Zomeworks .....	44

# Off-Grid PV as Simple as Grid-Tie

Introducing the  
**Apollo Solar SPC 120/240**  
**SOLAR POWER CENTER**

Split-phase, true sine wave inverter/charger, 80-amp MPPT charge controller, plus all breakers, GFP and lightning protection – fully integrated into one box! Pre-wired, pre-tested and ready for quick installation – a true plug-and-play, off-grid PV power system.

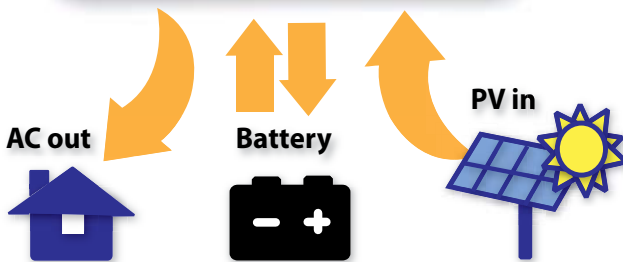


◀ Compact 3 ft by 2 ft secured enclosure – *only 9 inches deep* – keeps equipment safe and clean.

System monitor shows PV performance, battery state-of-charge, and AC load.



Wireless Remote Display for system monitoring with range up to 1 mile.



Call or visit online to learn more

**APOLLO SOLAR**  
 ApolloSolar.com • 203-790-6400

## Innovative power electronics make it possible...

Building on the success of the T80 Charge Controller with its patent-pending MPPT technology and robust thermal design, Apollo Solar completes the off-grid PV power suite with two products installers have been asking for (also available separately):



### TrueSineWave™ Split-Phase Inverter/Charger

- Pure sine wave, 120/240 split-phase
- No external transformers required
- 200% surge to start well pumps and motors
- 12-, 24- and 48-VDC models

**Ideal replacement for older non-sine wave inverters with the same footprint**



### T100 MPPT Charge Controller

With up to 100 amps of continuous output, the T100 extends the benefits of Apollo's superior energy harvest technology to higher-voltage PV modules and arrays up to 200 Voc. Includes integrated TriMetric™ battery state-of-charge metering, also available via Wireless Remote Display.

## ...integrated into a complete off-grid PV power center



The TrueSineWave Inverter/Charger and the T80 MPPT Charge Controller provide superior performance and reliability whether alone or working together seamlessly in the **Apollo Solar SPC 120/240 Solar Power Center**.