

Complete Systems

CENTROSOLAR photovoltaic complete systems
Minimal installation effort, maximum performance!



CentroPack™ Residential Grid-Tie PV System Packages D-Series

CENTROSOLAR offers many system packages tailored to suit every roof type. Every CentroPack system is provided with CENTROSOLAR 'D' series high efficiency polycrystalline PV modules enabling maximum output in limited space, featuring a 25 year power warranty to 80%.

Each CentroPack system has been professionally engineered for optimum performance, utilizing products of field proven technology, designed in accordance with NEC and building code standards. While saving time and money for solar integrators is foremost, our years of experience have resulted the industry's most complete-code compliant PV system package. CentroPack grid tie systems have been certified by Florida Solar Energy Center (FSEC) for safe and reliable operation compliant to NEC article 690. The FSEC certification is useful for the permitting & interconnection process in some

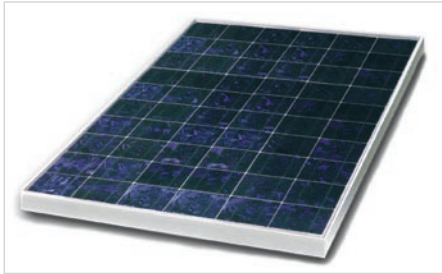
states. Pre-Packaged Balance of System electrical and mechanical components, eliminates separately sourcing hard to find parts. Many items which are considered as optional in Solar-Kits by others are standard parts in every CentroPack.

The heart of the CentroPack system is the DC-AC power inverter. SMA and Fronius inverters are selected for their outstanding reliability and many features, ranging from 2.4kW to 18.4kW AC output power. CentroPack systems can be combined in parallel for even higher power requirements, refer to combined-dual inverter system models - CP300/400. CentroPack grid tie PV systems are configured for residential applications 240VAC split-phase. Other CentroPack system configurations are available for 208/277/480 VAC three-phase applications, contact your sales manager.

- One Part Number Delivers a Complete, Compatible System
- Pre-Packaged & Engineered for Compatibility and Superior Performance
- Ready to ship - Eliminates Second Sourcing of Long Lead and Special Components
- Design Package Includes Drawings and All Required NEC Equipment Labels
- Quick Shipment – No Back Orders = No More Waiting
- Many Upgrades Included as Standard Equipment
- PV Mounting Structures Are Modular Allowing Flexibility in Layout
- FSEC Approved - SP100/200 models



CENTROSOLAR CentroPack™ System



Modules

- CENTROSOLAR D series 220W, high efficiency polycrystalline silicon PV modules, tempered glass laminate with anodized aluminum frames
- Bypass diodes, #12AWG X 36" wire leads w/MC4 latching connectors
- ETL Listed, UL1703, US and Canada, FSEC approved, CE compliant
- 25 year warranty to 80% output power
- +/-5W power tolerance

Inverters



- Power Inverter - choice of packages with SMA 'Sunny Boy' or Fronius 'IG Plus' pure sine wave utility interactive inverters, UL1741 listed, outdoor rated, includes digital display monitor, 'DC' on/off switch, wall mounting bracket, PV fused string combiner (15A fuses supplied with package), ground fault protection, corrosion resistant aluminum enclosure
- These inverters are thermally regulated fan cooled, high efficiency and 10 year standard warranty. (Extended warranties available) Fronius inverters rated to 122°F, SMA rated to 113°F
- Data communication, monitoring and collection options are available for both



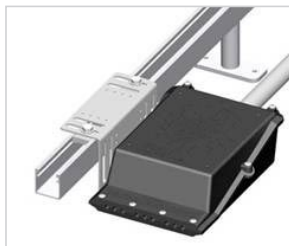
Mounting System

- Support Structure - Unirac 'SolarMount' anodized aluminum flush mount rail system with top clamp mounting, 'L' feet and stainless steel fasteners. 10 year warranty designed for 90 mph and wind loads.
- Supplied in rail lengths of 132" (3 modules) and 168" (4 modules) this modularity enables flexibility for landscape or portrait arrangements of roof top layouts. Rails are slightly longer than module groups allowing extra space for skylights or vent pipes. SolarMount rail system requires the minimal number of roof penetrations with attachment spans up to six feet apart. All are supplied with rail 'splice bars' for continuous rail connections, serving to further minimize roof penetrations



'SolaDeck' PV Wire Pull Box (Accessory)

- 'Derby Brown' color, low profile, outdoor, rain-tight electrical enclosure UL listed 50R
- Flashing allows for direct access into attic for wiring penetrations
- CentroPack includes cord fittings, terminal blocks and grounding lug
- Facilitates transition from open wiring to conduit, 5 conduit entries



'ACE' PV Wire Pull Box (Accessory)

- Outdoor electrical enclosure, non-metallic pull box is UL listed 1741
- Mounting bracket allows for flexible attachments options to almost any structure
- Facilitates transition from open wiring to conduit
- CentroPack includes terminal blocks

CENTROSOLAR CentroPack™ System

All System Components

Solar Modules

CENTROSOLAR D series 220W, high efficiency poly crystalline silicon PV modules, tempered glass laminate with anodized aluminum frames, bypass diodes, #12AWG X 36" wire leads w/MC4 latching connectors. 25 year warranty to 80% output power.

Support Structure

Unirac 'SolarMount' anodized aluminum flush mount rail system with top clamp mounting, 'L' feet and stainless steel fasteners. Meets 'IBC' and Ca. building code requirements.

Supplied in rail lengths of 132" (3 modules) and 168" (4 modules) this modularity enables flexibility for landscape or portrait arrangements of roof top layouts. Rails are slightly longer than module groups allowing extra space for skylights or vent pipes. SolarMount rail system requires the minimal number of roof penetrations with attachment spans up to six feet apart. All are supplied with rail 'splice bars' for continuous rail connections, serving to further minimize roof penetrations.

Power Inverter

Choice of packages with SMA or Fronius pure sine wave utility interactive inverters, UL1741 listed, outdoor rated, includes digital display monitor, on/off switch, wall mounting bracket, PV fused string combiner (15A fuses supplied with package), ground fault protection, corrosion resistant aluminum enclosure. Extended warranty available. Dual inverter systems include a 100A main lug outdoor AC load center with combining breakers.

PV Array Wiring

All interconnect wiring from every PV string to collection 'pull-box' is supplied as #10AWG 'PV Wire' UL4703 with type MC4 male/female locking connectors in 50' & 75' lengths. Grounding lugs and fasteners for equipment ground connections of all PV frames and structural rails included with #8 AWG stranded cu wire. Wire management includes cable ties & stainless steel wire clips, two-hole non metallic 1/2" cord grips for pull box.

DC-AC Disconnect

Outdoor rated, UL listed, service safety disconnect switches (non-fused) are included with externally operable lockable handle as required by most utilities. The PV-DC disconnect is 600V heavy duty 3 pole rated 18A/pole. The AC disconnect is general duty 240V, - 30A, 60A or 100A rated, depending on size of system.

AC kWh Meter

Included in package is a self contained solid state Kilowatt-hour meter with digital display, form 2S 240V, 3 wire class 200. Meter is designed in accordance with UL, IEEE, ANSI & Canadian standards for Utility meters, 0.2% accuracy. Non glass construction eliminates damage. Meter socket box included, 125A UL listed

Equipment Labeling

permanent labels are supplied in each package tailored with the appropriate markings and ratings as required by NEC 609.53 and local utilities. These labels are black engraved plastic with adhesive back, not be easily removed, non-fading won't crack or peel. Warning labels are red.

Installation & Owner's Manual

A complete and comprehensive system manual is provided in every shipment tailored to the specific CentroPack system, includes wiring diagrams, instructions, warranty statements.

PV Array 'Pull-Box'

Accessory 'Pull-Boxes' are sold separately for either composition – asphalt shingle or tile roof installations. Pull boxes are outdoor rated and UL listed. SolaDeck pull box for shingle roof includes integrated flashing and allows penetration of conductors into attic space. ACE pull box for tile roof (or ground mounts) is attached to support structure. Both pull boxes allow up to 4 PV strings with ground. Pressure connection screw terminal blocks, grounding terminals included with CentroPacks.

CENTROSOLAR offers many accessory items which facilitate installation of CentroPacks to various roof construction. see separate accessory item brochure.



Owner's Manual



NEC Equip. Labeling



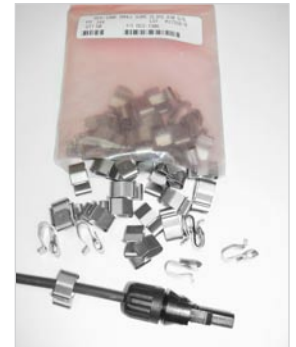
AC kWh Meter & Box



DC Disconnect Switch



AC Disconnect Switch



PV Wire Clips



PV Module Ground Kit



Rail-Rail Ground Lug



'MC4' Extension Cords



Ground Wire

CENTROSOLAR CentroPack™ System

CentroPack™ Single-Inverter Configurations - 240Vac

Model *Number	D220 Modules in Series	Parallel Strings	Total No. PV Modules	Array Area Square Ft.	Array Power STC (W)	Array Power PTC (W)	Qty of Racks x # PV Modules	Inverter Model	Inverter Power (kW)
SP100.3-	12	1	12	208	2640	2342.4	4 x 3	SB 3000US	3.0
SP100.4-	11	1	11	191	2420	2147.2	2 x 4 + 1 x 3	SB 3000US	3.0
SP101.3-	14	1	14	243	3080	2732.8	2 x 4 + 2 x 3	SB 4000US	4.0
SP102.1-	12	2	24	416	5280	4684.8	6 x 4	SB 5000US	5.0
SP102.2-	11	2	22	381	4840	4294.4	4 x 4 + 2 x 3	SB 5000US	5.0
SP103.2-	14	2	28	485	6160	5465.6	4 x 4 + 4 x 3	SB 6000US	6.0
SP103.3-	13	2	26	451	5720	5075.2	2 x 4 + 6 x 3	SB 6000US	6.0
SP104.1-	12	3	36	624	7920	7027.2	9 x 4	SB 7000US	7.0
SP104.2-	11	3	33	572	7260	6441.6	6 x 4 + 3 x 3	SB 7000US	7.0
SP105.0-	13	3	39	676	8580	7612.8	3 x 4 + 9 x 3	SB 8000US	8.0
SP105.1-	14	3	42	728	9240	8198.4	6 x 4 + 6 x 3	SB 8000US	8.0
SP200.1-	14	1	14	243	3080	2732.8	2 x 4 + 2 x 3	IG plus 3.0-1	3.0
SP200.2-	13	1	13	225	2860	2537.6	1 x 4 + 3x 3	IG plus 3.0-1	3.0
SP200.3-	12	1	12	208	2640	2342.4	4 x 3	IG plus 3.0-1	3.0
SP201.1-	10	2	20	347	4400	3904.0	2 x 4 + 4 x 3	IG plus 3.8-1	3.8
SP202.1-	11	2	22	381	4840	4294.4	4 x 4 + 2 x 3	IG plus 5.0-1	5.0
SP202.2-	12	2	24	416	5280	4684.8	6 x 4	IG plus 5.0-1	5.0
SP203.1-	10	3	30	520	6600	5856.0	3 x 4 + 6 x 3	IG plus 6.0-1	6.0
SP203.2-	13	2	26	451	5720	5075.2	2 x 4 + 6 x 3	IG plus 6.0-1	6.0
SP204.1-	13	3	39	676	8580	7612.8	3 x 4 + 9 x 3	IG plus 7.5-1	7.5
SP204.2-	12	3	36	624	7920	7027.2	9 x 4	IG plus 7.5-1	7.5
SP204.3-	11	3	33	572	7260	6441.6	6 x 4 + 3 x 3	IG plus 7.5-1	7.5

CentroPack™ Combined-Inverter Configurations - 240Vac

Model *Number	D220 Modules in Series	Parallel Strings	Total No. PV Modules	Array Area Square Ft.	Array Power STC (W)	Array Power PTC (W)	Qty of Racks x # PV Modules	Inverter Model	Inverter Power (kW)
CP300.0-	11	4	44	763	9680	8588.8	8 x 4 + 4 x 3	2x SB 5000US	10.0
CP300.1-	12	4	48	832	10560	9369.6	12 x 4	2x SB 5000US	10.0
CP301.0-	13	4	52	901	11440	10150.4	4 x 4 + 12 x 3	2x SB 6000US	12.0
CP301.1-	14	4	56	971	12320	10931.2	8 x 4 + 8 x 3	2x SB 6000US	12.0
CP302.0-	11	6	66	1144	14520	12883.2	12 x 4 + 6 x 3	2x SB 7000US	14.0
CP302.1-	12	6	72	1248	15840	14054.4	18 x 4	2x SB 7000US	14.0
CP303.0-	13	6	78	1352	17160	15225.6	6 x 4 + 18 x 3	2x SB 8000US	16.0
CP303.1-	14	6	84	1456	18480	16396.8	12 x 4 + 12 x 3	2x SB 8000US	16.0
CP400.0-	10	4	40	693	8800	7808.0	4 x 4 + 8 x 3	2x IG PLUS 3.8-1	7.6
CP401.1-	11	4	44	763	9680	8588.8	8 x 4 + 4 x 3	2x IG PLUS 5.0-1	10.0
CP401.2-	12	4	48	832	10560	9369.6	12 x 4	2x IG PLUS 5.0-1	10.0
CP402.1-	13	4	52	901	11440	10150.4	4 x 4 + 12 x 3	2x IG PLUS 6.0-1	12.0
CP402.2-	10	6	60	1040	13200	11712.0	6 x 4 + 12 x 3	2x IG PLUS 6.0-1	12.0
CP403.1-	11	6	66	1144	14520	12883.2	12 x 4 + 6 x 3	2x IG PLUS 7.5-1	15.0
CP403.2-	12	6	72	1248	15840	14054.4	18 x 4	2x IG PLUS 7.5-1	15.0
CP403.3-	13	6	78	1352	17160	15225.6	6 x 4 + 18 x 3	2x IG PLUS 7.5-1	15.0

*CentroPack™ Part Numbers:
Add Suffix - X (w/o solar mounts)

CentroPack™ Systems are designed for best operation in regions with average temperatures from 5°F to 113°F. For other temperature extremes, contact CentroSolar for assistance.

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