



CENPAC

The Standard Photovoltaic Complete System for the UK



Reliable, durable and with a particularly high yield: The photovoltaic complete systems from Centrosolar AG are the first choice throughout Europe for all performance classes and roof types.

The extraordinary PV system

With CENPAC, Centrosolar has developed a complete system which combines the advantages of a tailor-made photovoltaic system with the opportunities provided by a standard solution which is available immediately. The result is an extraordinarily high-quality PV system which is as powerful as it is pleasing to the eye, the components of which have been specially developed for use within the complete system. This guarantees optimum yields under nearly all conditions.

Quality and performance in their most attractive form

Thanks to the use of black modules from the S-Class Excellent series, the system looks less like a foreign object than a logical add-on which blends in with the roof with an impressive and attractive appearance - without equal in this price range.



CENPAC by CENTROSOLAR

Now, Centrosolar AG is taking one step further with CENPAC: the complete solution, which is available in four individual versions, is delivered in its entirety in a package on just one pallet, pre-fitted with all the necessary components and ready to install.

Attractive and robust

- Classy system design in black for the highest aesthetic standards
- Seamless installation of the modules using special mounting technology
- All components used are made of black anodised aluminium and corrosion-resistant stainless steel
- 10-year product guarantee on all components
- “Made in Germany” quality
- Low system price due to standardisation

Easy to install

- Simple, fast mounting on almost all roof types
- Comprehensive documentation allows for an accurate installation even without a special background in photovoltaics
- Fast replacement of modules for maintenance purposes
- Complete solution including service: all components directly from Centrosolar AG



The tailor-made photovoltaic solution

The CENPAC is available in six variants, in order to meet individual requirements and roofing situations in the best possible way.

CENPAC 3.x - the flexible solution

2 x 8 modules



Required roof surface:

9.8 m x 4.30 m generator field + edge area + rafter adjustment space

9.0 m x 4.30 m generator field + edge area

8.0 m x 3.30 m generator field

CENPAC 5.x - the efficient solution

2 x 12 modules



Required roof surface:

13.8 m x 4.30 m generator field + edge area + rafter adjustment space

13.0 m x 4.30 m generator field + edge area

12.0 m x 3.30 m generator field

4 x 4 modules



Required roof surface:

5.8 m x 7.30 m generator field + edge area + rafter adjustment space

5.0 m x 7.30 m generator field + edge area

4.0 m x 6.30 m generator field

3 x 8 modules



Required roof surface:

9.8 m x 5.75 m generator field + edge area + rafter adjustment space

9.0 m x 5.75 m generator field + edge area

8.0 m x 4.75 m generator field

Our CENPAC 3.x with an output of between 3.28 and 3.44 kWp is excellently suited to installation on your family home or terrace house with a roof surface of at **least 42.1 m²**.

The CENPAC 3.x contains the following components:

- 16 S-Class Excellent modules, 205-225 Wp
- Powerstocc 3.6 Excellent inverter
- MS Constocc Excellent mounting system, incl. all materials
- All necessary accessories

The CENPAC 5.x with an output of between 5.0 and 5.4 kWp is particularly suited for larger family homes and apartment buildings, or semi-detached houses **with an available roof surface of 56.4 m²** and above.

The CENPAC 5.x contains the following components:

- 24 S-Class Excellent modules, 210-225 Wp
- Powerstocc 5.5 Excellent inverter
- MS Constocc Excellent mounting system, incl. all materials
- All necessary accessories

...ready-made and supplied immediately!

CENPAC 2.5 - the clever solution

3 x 4 modules



Required roof surface:

5.8 m x 5.75 m generator field + edge area + rafter adjustment space
 5.0 m x 5.75 m generator field + edge area
 4.0 m x 4.75 m generator field

The CENPAC 2.5 with an output of 2,520 Wp was developed especially for the typical houses of the United Kingdom. With its perfect design and the compact size it is a fit for almost every house.

CENPAC 2.5 + extension pack

2 x 4 + 2 x 2 modules



Required roof surface:

2 x 4: 4.0 m x 3.30 m generator field
 2 x 2: 2.0 m x 3.30 m generator field

The CENPAC 2.5 in combination with the extension pack can be adapted to almost every kind of roof. With the CENPAC 2.5 extension pack you are able to divide the system into two parts so you can also equip roofs with blocked spaces like windows, chimneys or dormers.

The CENPAC 2.5 contains the following components:

- 12 S-Class Excellent modules, 205-225 Wp
- SMA SunnyBoy 2500 HF inverter
- MS Constoc Excellent mounting system, incl. all materials
- All necessary accessories



A CENPAC for all occasions

Centrosolar's first real complete system CENPAC can be installed in various regions if some prerequisites are observed. With the use of the CENPAC 2.5 extension pack, the system can also be installed on complex roofs with blocked spaces like windows, chimneys and dormers. Thus the system provides a maximum flexibility with the lowest complexity. One system fits all.



Everything in the green?

Prerequisites

Building height:	up to 13.7 m	Alignment:	from south-east to south-west
Roof pitch:	20-50 degrees	Terrain category:	III and IV
Rafter distance:	40-80 cm	Wind speed:	up to 25 m/s
Roofing:	tilled roof without on-roof insulation		

CENPAC
up to 290 m above sea level
Snow load zone 1-3

CENPAC
up to 185 m above sea level
Snow load zone 4+5



Modules

S-Class Excellent

For CENPAC, we use only high-performance, S-Class Excellent series modules with anti-reflective coated solar glass. The S-Class Excellent modules are made of crystalline, high-performance cells and black anodised frames, and create a visually satisfying module which is Made in Germany.



Mounting system

MS Constocc Excellent

Thanks to its modular plug-in system, the special insertion technology and clever construction, the MS Constocc Excellent is quick to mount and particularly robust. Its components are made solely of corrosion-resistant stainless steel and aluminium and come in elegant black. Combined with the modules, the system creates a visually homogeneous surface which turns your roof into a real eye-catcher.

No compromises when it comes to design and performance

Inverters

Powerstoccc Excellent for CENPAC 3.x/5.x

SMA SunnyBoy 2500 HF for CENPAC 2.5

The Powerstoccc Excellent inverters have been specially developed for our new CENPACs and are designed to work under almost all conditions with an optimum degree of efficiency.

The CENPAC 2.5 comes with a 10-year guarantee and an additional SunnyBeam that allows you to monitor your PV output at all times.



Additional accessories

CENPACs are delivered with all mounting materials needed for installation. These include 100 m of solar cable with a diameter of 6 mm² and the necessary adapter sets for the cable connections to the modules and inverters.

Technical specifications

S-Class Excellent high-performance modules

Electrical Data*

Type of module	S 205M/P54 Excellent	S 210M/P54 Excellent	S 215M/P54 Excellent	S 220M/P54 Excellent	S 225M/P54 Excellent	
Number of cells	54	54	54	54	54	
Nominal power (P_{MPP})	205	210	215	220	225	Wp
Voltage (U_{MPP})	26.38	26.45	26.88	27.26	27.61	V
Current (I_{MPP})	7.77	7.94	8.00	8.07	8.15	A
Open circuit voltage (U_{OC})	32.67	32.78	32.83	32.89	32.94	V
Short circuit current (I_{SC})	8.49	8.66	8.71	8.78	8.94	A
Power coefficient (ΔP_{MPP})	-0.43	-0.43	-0.43	-0.43	-0.43	%/K
Voltage coefficient (ΔU_{OC})	-0.37	-0.37	-0.37	-0.37	-0.37	%/K
Current coefficient (ΔI_{SC})	0.03	0.03	0.03	0.03	0.03	%/K

* Under standard testing conditions STC (1.000 W/m², spectrum AM 1.5, cell temperature 25 °C)

Mechanical data

Mechanical data	Value	Quality standards	Value
Length	1503 mm	Performance tolerance	±3%
Width	990 mm	Max. system voltage	1000 V
Height with junction box	40 mm	Product warranty**	10 years
Weight	17.5 kg	Performance guarantee**	10 years at 90%, 26 years at 80% performance

** According to the Centrosolar guarantee conditions (incl. product and performance guarantee).

Construction Characteristics

Manufactured at Centrosolar Sonnenstromfabrik
54 cells, 156 x 156 mm
Black or white background film
Black anodized frame
Certified according to IEC 61215 Ed. 2 and IEC 61730
Salt spray test according to DIN EN ISO 9227-NSS
CE conformity



Test anxiety?

Our certificates and tests:

- DIN EN ISO 9227-NSS salt spray test
- Extended mechanical load test with 5400 Pa successfully passed
- Module labelling in compliance with DIN EN 50380
- Quality and environmental management norms DIN ISO 9001:2008 and ISO 14001:2009



- Qualified, IEC 61215
- Safety tested, IEC 61730
- Periodic Inspection



Salt spray test according to DIN EN ISO 9227-NSS



...CENPAC at a Glance

Powerstocc Excellent / SMA SunnyBoy 2500HF inverters



Electrical Data

Type of inverter	Powerstocc 3.6 Excellent	Powerstocc 5.5 Excellent	SMA SunnyBoy 2500HF	
Input side (DC)				
Max. DC Input	3800	5800	2600	W
Nominal DC Input	3450	5250	2600	W
Nominal DC current	8	8	max. 15 A per String	A
Min. input voltage $U_{DC \min}$	180	180	175	V
Max. input voltage $U_{DC \max}$	950	950	700	V
Nominal MPP-voltage range (incl. extended)	180–850	180–850	175 - 560	V
Output side (AC)				
Nominal AC power	3300	5000	2500	W
Max. AC output (peak output)	3600	5500	2500	W
Nominal AC output per phase	14.4	7.3	14.2	A
Number of feed-in phases	1	3	1	piece
Efficiency factor (relating to nominal DC voltage)				
Stand-by consumption	< 1	< 1	<1	W
Night consumption	< 1	< 1	<1	W
Max. efficiency	94.8	95.3	96.3	%
European-standard efficiency	93.8	94.2	95.3	%

Design / Conversion

Design	transformerless	transformerless	HF transformer
Self commuting / line commutated	self commuting	self commuting	self commuting
Data logging	integrated	integrated	Sunny Beam
Interface	Ethernet (RJ45) / RS485	Ethernet (RJ45) / RS485	Bluetooth / RS485 optional

Safety

Protection type	IP 55	IP 55	IP65
Protection class	SKL I	SKL I	SKL I
VDEW-compatible	yes	yes	yes
ENS grid monitoring (procedure)	Frequency-Shifting	3-phase monitoring	SMA Grid Guard
Grid voltage monitoring	yes	yes	yes
Insulation monitoring	yes	yes	yes
Disconnection device	Integrated electronic disconnection device	Integrated electronic disconnection device	Integrated electronic ESS
Reverse polarity protection	Short circuit diodes on the DC side	Short circuit diodes on the DC side	yes

Mechanical data

Height	350	350	580	mm
Width	420	420	348	mm
Depth	211	211	145	mm
Weight	ca. 20	21.1	17	kg

Environment

Environmental temperature from	-20	-20	-25	°C
Environmental temperature to	60	60	60	°C
Location	interior + exterior	interior + exterior	interior + exterior	
DC connection type	MC4	MC4	SUNCLIX	

Sunshine is our business.

GERMANY

CENTROSOLAR AG
Stresemannstraße 163
22769 Hamburg
GERMANY
Tel.: +49 40 391065-0
hamburg@centrosolar.com

CENTROSOLAR AG
Otto-Stadler-Straße 23c
33100 Paderborn
GERMANY
Tel.: +49 5251 50050-0
paderborn@centrosolar.com

CENTROSOLAR AG
Daimlerstraße 22
87437 Kempten
GERMANY
Tel.: + 49 831 540214-0
kempten@centrosolar.com

INTERNATIONAL

CENTROSOLAR AMERICA INC.
8350 E. Evans Road, Suite E-1
Scottsdale, AZ 85260
USA
Tel.: +1 480 3482555
info.usa@centrosolar.com

CENTROSOLAR BELGIUM BVBA
Uitbreidingstraat 80
2600 Berchem
BELGIUM
Tel.: +31 344 767002
info.benelux@centrosolar.com

CENTROSOLAR BENELUX B.V.
De Prinsenhof 1.05
4004 LN Tiel
THE NETHERLANDS
Tel.: +31 344 767002
info.benelux@centrosolar.com

CENTROSOLAR CANADA INC.
3415 14th Avenue, Unit C
Markham, Ontario, L3R 0H3
CANADA
Tel.: +1 9056044012
info.can@centrosolar.com

CENTROSOLAR FOTOVOLTAICO
ESPAÑA S.L.
Moll de Barcelona s/n
Edifici Nord, 7a planta
08039 Barcelona
SPAIN
Tel.: +34 93 3435048
info.espana@centrosolar.com

CENTROSOLAR FRANCE SARL
Espace Européen
15, chemin du Saquin, Batiment G
69130 Ecully
FRANCE
Tel.: +33 4 69848210
info.france@centrosolar.com

CENTROSOLAR HELLAS MEPE
Ag. Alexandrou 57-59
17561 Paleo Faliro
GREECE
Tel.: +30 210 6228791
info.hellas@centrosolar.com

CENTROSOLAR ITALIA S.R.L.
V.le del Lavoro 33
37036 S. Martino B.A. Verona
ITALY
Tel.: +39 045 8781225
info.italia@centrosolar.com

CENTROSOLAR UK LTD
Building 3, Chiswick Business Park
566 Chiswick High Road
London W4 5YA
GREAT BRITAIN
Tel.: +44 20 88495740
info.uk@centrosolar.com