

SOLAR ENERGY AND STORAGE

Technical specifications and application concepts



Strong structures. Smart energy.

We approach solar generation, battery storage and steel building design as parts of one integrated project.

PRODUCT & SOLUTION CATALOGUE / 2026

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CATALOGUE GUIDE

We approach solar generation, battery storage and steel building design as parts of one integrated project.

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Specifications refer to the model options in the product catalogue. Final equipment, usable energy, performance and delivery scope follow the selected model's approved datasheet. Larger capacities are planned per project. kW / MW express power; kWh / MWh express energy.

Solar carport

Energy-generating carports for airports, hotels, shopping centres and car dealerships. Single- or double-sided structures are planned to suit the parking layout.



Applications

Airports, hotels, shopping centres, dealerships and commercial car parks

Supporting structure

Steel structure; spans, columns and foundations designed per project

PV system

Module power, quantity and inverter capacity according to layout

Electrical infrastructure

DC/AC cabling, protection, earthing and connection design

Integration

Battery and EV charging infrastructure as project options

Design requires parking dimensions, vehicle clearance, geotechnical study, wind loads and grid connection conditions.



Residential systems

Generate by day and store according to need. We select panels, hybrid inverter and batteries together around daily consumption and priority appliances.



System components	PV modules, hybrid inverter, lithium battery and monitoring
Power sizing	Simultaneous loads and appliance currents
Battery capacity	Critical loads and backup target
Operating scenario	Self-consumption and backup with suitable equipment
Installation	Roof, switchboard, protection and earthing

Capacity and warranty terms are specified in the quotation for the selected equipment and project scope.

Steel structures

Warehouses, showrooms, car dealerships, offices and industrial buildings. Purpose-built structures with PV integration.



Supporting structure

Steel columns, beams, purlins and connection details

Geometry and loads

Spans, storey heights, service loads and site conditions

Roof and façade

Cladding, insulation, drainage and façade options; panel loads, anchoring and maintenance access.

PV compatibility

Cladding, insulation, drainage and façade options; panel loads, anchoring and maintenance access.

Foundations and infrastructure

Coordination of foundations, anchors, drainage and electrical infrastructure. Sections and scope are defined by structural design.

Sections, steel grade, corrosion protection and foundation dimensions are defined by structural design. Images are illustrative concepts.

Ground-mounted solar

PV layouts based on terrain, irradiation, access routes and grid capacity. Storage is sized alongside generation and load profiles.



Installed PV capacity	kWp / MWp: module quantity × rated module power
Site design	Terrain slope, shading, row spacing and service roads
Inverter architecture	DC/AC ratio, string voltages and connection capacity
BESS	Power (kW/MW) and energy (kWh/MWh) sized separately
Generation estimate	Based on location, irradiation, orientation and system losses

Annual production and storage duration are calculated from site data and load profiles; images do not imply a production guarantee.

Commercial solutions

Use surplus generation, manage peak loads and support critical circuits with suitable system design. Power and energy capacity are calculated separately.



Industry / business park scale	0.5-10 MW / 1-20 MWh
Data centre / hospital scale	0.5-5 MW / 1-10 MWh
Charging / energy station scale	100-500 kW / 200-1000 kWh
Standalone site scale	50-200 kW / 200-800 kWh
Energy management	Peak-load support, self-consumption and scheduled charging/discharging

Ranges describe total application scales, not a single product's capacity. Critical-load backup requires suitable switching and protection design.



50 kW hybrid cabinet

50 kW / 200.7 kWh

Rated power / energy	50 kW / 200.7 kWh
AC voltage / DC range	400 V AC / 627.2-784 V DC
PV power / maximum voltage	60-120 kWp / 1000 V
MPPT / full-load MPPT range	250-850 V / 450-850 V DC
Isolation / STS	Included / included
Cooling / noise / protection	Air cooling / <70 dB / IP55
Temperature / humidity	-30 ... +55 °C / 5-95%, non-condensing
Altitude	5000 m; derating above 3000 m
Dimensions / weight	2130 × 2250 × 1400 mm / approximately 3 t
Interfaces / protocols	BMS: RS485, CAN; EMS: RS485, TCP/IP; Modbus TCP/RTU, IEC104

PV input, inverter output and battery energy are different quantities. Component configuration is verified when selecting the product.

10 ft container BESS

Compact and modular



Rated power	50 / 100 / 150 / 250 kW
Rated current	72 / 144 / 216 / 360 A
AC overload	55 / 110 / 165 / 275 kVA
Energy (kWh)	100-430 / 100-430 / 100-430 / 430
STS	Optional / Optional / Optional / Not available
Grid connection	Three-phase, four-wire / 400 V AC ($\pm 15\%$)
Frequency / harmonic distortion	50/60 Hz (± 2.5) / $\leq 3\%$
Power factor / system efficiency	0.99; -1 ... +1 / 91.50%
Isolation / auxiliary supply	Isolation transformer / 220 V, ≤ 5 kVA

Energy depends on the selected battery arrangement. Images illustrate branding concepts.



10 ft container BESS / System equipment and environment

Dimensions / weight	2991 × 2438 × 2596 mm / approximately 7 t
Protection / corrosion	IP55 / C3; C5 Optional
Cooling / noise / protection	Smart air cooling / <75 dB
Temperature / humidity	-20 ... +55 °C / 5-95%, non-condensing
Altitude	3000 m; derating at higher altitude
Parallel units	Up to 5 on-grid; up to 4 off-grid
Interfaces / protocols	RS485, Ethernet, CAN / Modbus TCP/RTU, IEC104
Cooling / heating capacity	5 kW / 3 kW
Fire detection / suppression	Smoke, temperature, CO / PERFLUOR, 30 kg

Corrosion protection, parallel operation and fire protection are confirmed against project conditions and selected equipment.

20 ft container BESS

500 kW / 1.2 MWh

Rated power / energy	500 kW / 1.2 MWh
AC connection / rated current	Three-phase, three-wire / 760 A
Grid voltage	380/400 V AC ($\pm 15\%$)
Frequency / AC overload	50/60 Hz (± 2.5) / 550 kVA
Harmonic distortion / power factor	$\leq 3\%$ / 0.99; -1 ... +1
DC voltage / input channels	600-900 V DC / 1, 2, 4, 8
Maximum DC current	880 / 440 / 220 / 110 A; depending on channel configuration
PCS conversion efficiency	maximum 97.1%
Overall system efficiency	$\leq 92.4\%$ (as shown in source catalogue)

PCS efficiency and overall system efficiency differ. The source inequality sign is retained and must be verified in the final datasheet.





20 ft container BESS / Mechanical and environmental data

BATTERY + PCS + BMS + EMS

Dimensions / weight	5998 × 2438 × 2596 mm / approximately 21 t
Protection / corrosion	IP55 / C3; C5 Optional
Cooling / noise / protection	Air cooling / <75 dB
Operating temperature	-20 to +55 °C; derating above 50 °C
Altitude	3000 m; derating at higher altitude
Temperature / humidity	5-95%, non-condensing
Isolation / STS	Optional / Optional
Auxiliary power supply	<13 kVA
Interfaces / protocols	RS485, Ethernet, CAN / Modbus TCP/RTU, IEC104, IEC61850
PCS dimensions / weight	1100 × 2160 × 800 mm / 640 kg
PCS DC range / maximum current	600-900 V DC / 880 A

Source lists system isolation as optional and the PCS isolation transformer as included. Delivery scope is confirmed for the selected configuration.



LFP battery architecture

01 / Cell

Chemistry / rated voltage	LFP / 3.2 V
Capacity / charge-discharge rate	280 Ah / 0.5 C
Cycles / internal resistance / energy efficiency	>6000 / $\leq 0.25 \text{ m}\Omega$ / $\geq 97\%$

02 / Module

Rated voltage / energy	51.2 V / 14.336 kWh
Charge-discharge rate / cycles	0.5 C / >6000

03 / Battery cluster

Arrangement / capacity	1P240S / 280 Ah
Voltage / operating range	768 V DC / 672-876 V
Rated energy / continuous current	215.040 kWh / 140 A
Charge / discharge temperature	0 ... +45 °C / -20 ... +55 °C
Dimensions / weight	1000 × 840 × 2100 mm / 1680 kg

Cycle life depends on test conditions. Cluster energy and complete-system energy differ; cluster count and usable energy are verified per model.



Smart management and protection

BMS + EMS

BMS monitors voltage, temperature, current, insulation and state of charge, with over/undervoltage, current and temperature protections.

Energy flow	Charge/discharge, SOC, efficiency and system status
Equipment monitoring	PCS, BMS, climate control and fire protection equipment
Operating strategies	Energy management and settings matched to the load profile
Alarms and reports	Fault logs, historical data, performance and export
Remote access	Subject to system communications and authorization scope

Standards and documentation references

Source references for cells/clusters include IEC 62619, IEC 63056, UL 1973, UL 9540A and UN 38.3; power conversion includes IEC 62477 and IEC 61000. This does not certify every product to every standard. Model-specific documentation is checked at procurement. Monitoring and remote control vary by model.



Project planning and implementation

We clarify capacity, site requirements and delivery responsibilities at every stage.

01 / NEEDS	Consumption, hourly load profile, critical equipment and project goals.
02 / Engineering	Coordination of PV, BESS, electrical and structural systems
03 / Design and procurement	Layout, single-line diagrams, equipment selection and delivery responsibilities
04 / Installation and commissioning	Infrastructure, connections, tests, settings and user training
05 / OPERATION	User training, monitoring, maintenance and technical support scope.

Power and energy are calculated separately

kW / MW indicate instantaneous power; kWh / MWh indicate stored energy. Approximate backup time = usable energy (kWh) / average load (kW). Discharge limits, conversion losses and auxiliary consumption must be included.

Capacity, generation, warranty, service and implementation scope are defined by model and project in the quotation and contract.



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LET'S PLAN YOUR PROJECT

WEB

www.royaldaylight.com

Telephone

+90 533 854 42 01

WhatsApp

+90 532 610 40 01

Email

cemsen001@icloud.com

Address

İskele, Long Beach / Northern Cyprus

Images show illustrative concepts. Layouts and equipment are specified for each project.