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**ENERGY
SAVER**

**LED
LIGHT**

**WIND
POWER**

**SOLAR
POWER**

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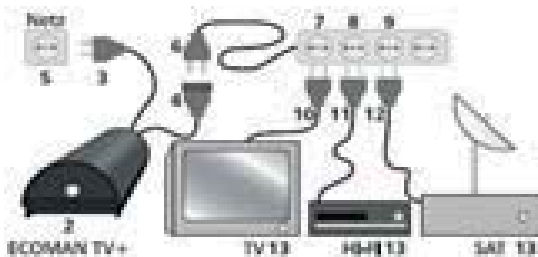
ENERGY SAVER



ECOMAN TP100



- ✓ Computer Systems / Notebooks
- ✓ Monitors / Displays
- ✓ Printers / Multifunction Devices
- ✓ Scanners / Fax
- ✓ Modem / Router
- ✓ Chargers (Handy, Organiser, Camera ect.)
- ✓ TV Equipment (LCD, Plasma, etc.)
- ✓ Video / DVD-Recorder
- ✓ SAT / Receiver
- ✓ Set top Boxes
- ✓ HIFI / Stereo / Home Cinema
- ✓ Game consoles etc.



ECOMAN Type	TP100
Standby power consumption	~ 0.1 W
Time to automatic shut down	5 minutes
Sensoric	Activated by Infrared Remote Control or the button (compatible for all Infrared Remote Control)
Max. power capacity	2300 W / 10 A
Connection	AC ~ 220 - 250 V
Standby detection	recognises Standby values to 150 watts
Over voltage protection	Interrupts the current supply to the terminals (> 275 volts)
Length of power cord	ca. 1.5 m
Plugs	worldwide
Manual	in the packaging
Worldwide patent	pending
Development	Swiss Technology
Brand	OEM (Original Equipment Manufacturer)
Norm	ROHS WEEE-Compliant (EU2002/95/CE)
Certification	




Description	Dimension/Mass (W x H x D)
Single box	12.5 x 5.5 x 23.0 cm
Packaging unit	1 Piece
Weight	0.38 kg

ECOMAN KK500



- ✓ Computer Systems / Notebooks
- ✓ Monitors / Displays
- ✓ Printers / Multifunction Devices
- ✓ Scanners / Fax
- ✓ Modem / Router
- ✓ Chargers (Handy, Organiser, Camera ect.)
- ✓ TV Equipment (LCD, Plasma, etc.)
- ✓ Video / DVD-Recorder
- ✓ SAT / Receiver
- ✓ Set top Boxes
- ✓ HIFI / Stereo / Home Cinema
- ✓ Game Consoles etc.



ECOMAN Type	KK500
Standby power consumption	~ 0.1 W
Time to automatic shut down	60 minutes
Sensoric	Activated by existing sensor (max 40 cm) or button
Max. power capacity	2300 W / 10 A
Connection	AC ~ 220 - 250 V
Standby detection	Recognises Standby values to 150 W
Over voltage protection	Interrupts the current supply to the terminals (> 275 volts)
Length of power cord	ca. 1.5 m
Plugs	worldwide
Manual	in the packaging
Worldwide patent	pending
Development	Swiss Technology
Brand	OEM (Original Equipment Manufacturer)
Norm	ROHS WEEE-Compliant (EU2002/95/CE)
Certification	  

Description	Dimension/Mass (W x H x D)
Single box	12.5 x 5.5 x 23.0 cm
Packaging unit	1 Piece
Weight	0.38 kg

ECOMAN Beamer IR10



USE

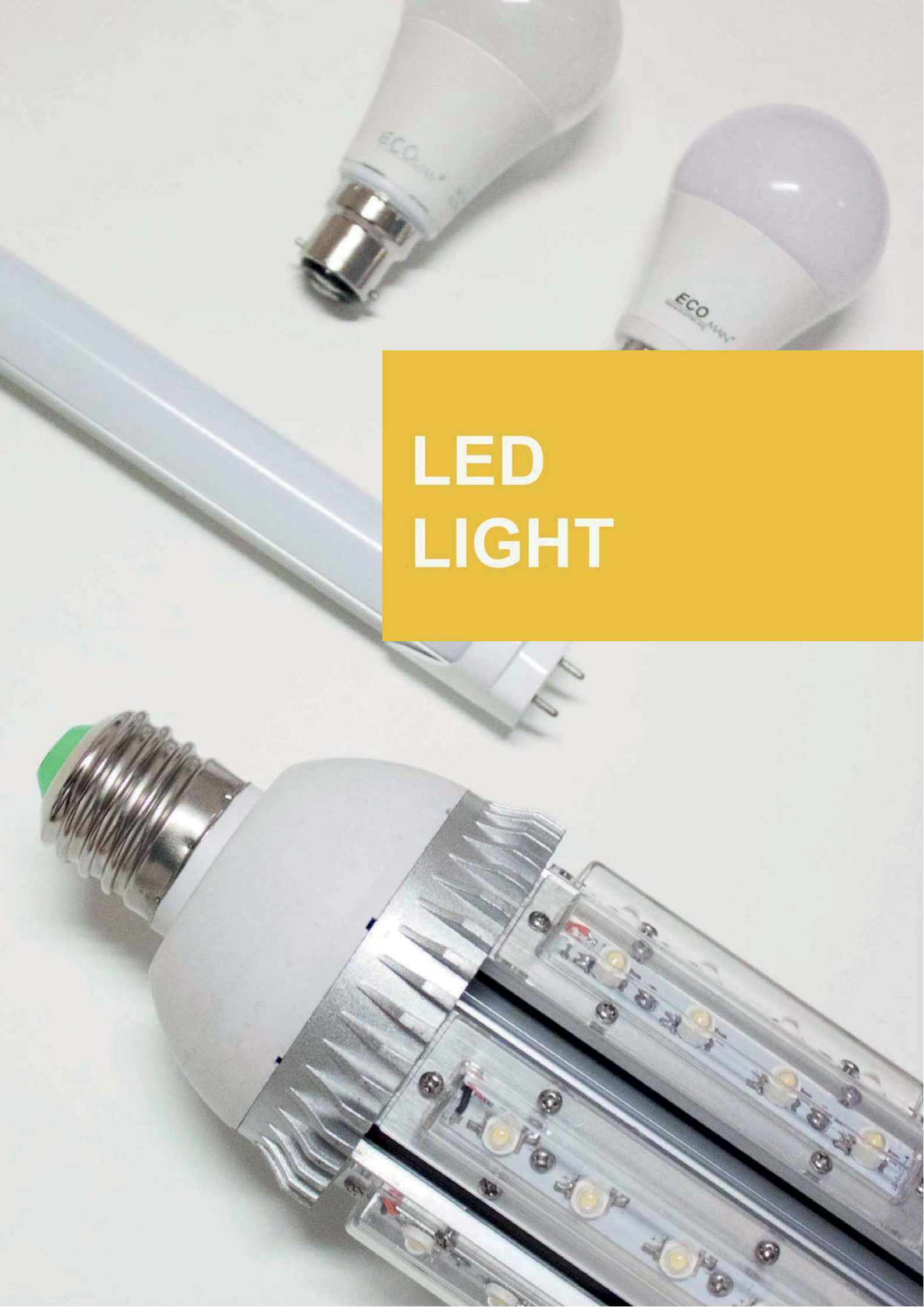
The switchable ECOMAN automatically disconnects the connected projector from the power supply after about 5 minutes in standby mode. This means that the post-cooling of the projector is guaranteed. With ECOMAN you avoid the high cost of the standby power consumption. The activation of the ECOMAN is easy with the respective Projector Infrared Remote Control - the projector is switched on again from the switch off mode immediately with a gentle touch of the button.

It's that simple!



ECOMAN Type	BEAMER IR10
Standby power consumption	~ 0.1 W
Time to automatic shut down	5 minutes
Sensoric	Activated by Infrared Remote Control.
Max. power capacity	2300 W / 10 A
Connection	AC ~ 220 - 250 V
Threshold	Programmed
Over voltage protection	Interrupts the current supply to the terminals (> 275 volts)
Length of power cord	ca. 1.5 m
Plugs	worldwide
Manual	in the packaging
Worldwide patent	pending
Development	Swiss Technology
Brand	OEM (Original Equipment Manufacturer)
Norm	ROHS WEEE-Compliant (EU2002V/95/CE)
Certification	

Description	Dimension/Mass (W x H x D)
Single box	12.5 x 5.5 x 23.0 cm
Packaging unit	1 Piece
Weight	0.38 kg



LED LIGHT

ECOMAN LED Light Assortment

ECOMAN - LED BULB - ALUMINIUM



Type	Description & Diameter	Colour temperature	Base	Lifetime
BA-3	150-270V 3W Φ 50	White 6500K Natural white 4000K Warm white 3000K	E27/B22	50`000 hrs
BA-5	150-270V 5W Φ 65			
BA-7	150-270V 7W Φ 65			
BA-9	150-270V 9W Φ 70			
BA-12	150-270V 12W Φ 80			

ECOMAN - LED BULB - PLASTIC



Type	Description & Diameter	Colour temperature	Base	Lifetime
BP-3	150-270V 3W Φ 45	White 6500K Natural white 4000K Warm white 3000K	E27/B22	50`000 hrs
BP-5	150-270V 5W Φ 50			
BP-7	150-270V 7W Φ 55			
BP-9	150-270V 9W Φ 60			
BP-12	150-270V 12W Φ 70			

ECOMAN - LED CANDLE - SHAPE ALUMINIUM



Type	Description & Diameter	Colour temperature	Base	Lifetime
CSA-3	150-270V 3W	White 6500K Natural white 4000K Warm white 3000K	E14	50`000 hrs
CSA-4	150-270V 4W			

ECOMAN - LED CANDLE - TAIL ALUMINIUM



Type	Description & Diameter	Colour temperature	Base	Lifetime
CTA-3	150-270V 3W	White 6500K Natural white 4000K Warm white 3000K	E14	50`000 hrs
CTA-4	150-270V 4W			

ECOMAN - LED T5 - FITTING



Type	Description & Diameter	Colour temperature	Base	Lifetime
T5-9	150-270V 9W 60CM	White 6500K Natural white 4000K Warm white 3000K	3 pins	50`000 hrs
T5-14	150-270V 14W 90CM			
T5-18	150-270V 18W 120CM			

ECOMAN - LED T8 - TUBE



Type	Description & Diameter	Colour temperature	Base	Lifetime
T8-9	150-270V 9W 60CM	White 6500K Natural white 4000K Warm white 3000K	G13	35`000 hrs
T8-14	150-270V 14W 90CM			
T8-16	150-270V 16W 120CM			

ECOMAN LED FLOODLIGHTS



MH-TG-004	Power	1x50W
	Control mode	constant current mode
	LED source	Epistar
	Voltage	AC110-265V
	Working temperature	-20°C~+55°C
	IP Rate	IP65
	Beam angle	120°
	Size	285*225*155mm
	Weight	2.6 kg



MH-TG-006	Power	1x100W
	Control mode	constant current mode
	LED source	Epistar
	Voltage	AC110-265V
	Working temperature	-20°C~+55°C
	IP Rate	IP65
	Beam angle	120°
	Size	360*290*225mm
	Weight	5.1KG



MH-TG-007	Power	2x50W
	Control mode	constant current mode
	LED source	Epistar
	Voltage	AC110-265V
	Working temperature	-20°C~+55°C
	IP Rate	IP65
	Beam angle	120°
	Size	360*290*225mm
	Weight	5.1KG



MH-TG-008	Power	3x50W
	Control mode	constant current mode
	LED source	Epistar
	Voltage	AC110-265V
	Working temperature	-20°C~+55°C
	IP Rate	IP65
	Beam angle	120°
	Size	425*325*200mm
	Weight	8.7KG



MH-TG-009	Power	4x50W
	Control mode	constant current mode
	LED source	Epistar
	Voltage	AC110-265V
	Working temperature	-20°C~+55°C
	IP Rate	IP65
	Beam angle	120°
	Size	425*325*200mm
	Weight	9.2KG



MH-TG-013	Power	1x50W
	Control mode	constant current mode
	LED source	Epistar
	Voltage	AC110-265V
	Working temperature	-20°C~+55°C
	IP Rate	IP65
	Beam angle	120°
	Size	285*275*65mm
	Weight	2.2KG



MH-TG-015	Power	1x100W
	Control mode	constant current mode
	LED source	Epistar
	Voltage	AC110-265V
	Working temperature	-20°C~+55°C
	IP Rate	IP65
	Beam angle	120°
	Size	285*275*65mm
	Weight	2.2KG

ECOMAN LED PERFORMANCE LAMPS



ZYHP-18W	Voltage	85-265V
	Shell material	Aluminium alloy
	Base	E27/E40
	Viewing angle	360°
	Warm white	2600-3000K
	Natural white	4000-4500K
	White	6000-7000K
	Product size	107*107*300 mm
	Lifetime	50000 hrs



ZYHP-24W	Voltage	85-265V
	Shell material	Aluminium alloy
	Base	E27/E40
	Viewing angle	360°
	Warm white	2600-3000K
	Natural white	4000-4500K
	White	6000-7000K
	Product size	107*107*210mm
	Lifetime	50000 hrs



ZYHP-36W	Voltage	85-265V
	Shell material	Aluminium alloy
	Base	E27/E40
	Viewing angle	360°
	Warm white	2600-3000K
	Natural white	4000-4500K
	White	6000-7000K
	Product size	107*107*245mm
	Lifetime	50000 hrs



ZYHP-42W	Voltage	85-265V
	Shell material	Aluminium alloy
	Base	E27/E40
	Viewing angle	360°
	Warm white	2600-3000K
	Natural white	4000-4500K
	White	6000-7000K
	Product size	107*107*190mm
	Lifetime	50000 hrs



ZY-LD28W	Voltage	AC80-265V
	Shell material	Aluminium alloy
	Base	E40
	Viewing angle	120°
	Warm white	2600-3000K
	Natural white	4000-4500K
	White	6000-7000K
	Product size	80*80*255mm
	Lifetime	50000 hrs



ZYJD-20W-5050SMD	Voltage	85-265V
	Shell material	PBT
	Base	E27
	Viewing angle	360°
	Warm white	2600-3000K
	Natural white	4000-4500K
	White	6000-7000K
	Product size	80*80*255mm
	Lifetime	50000 hrs



ZYJD-15W-5050SMD	Voltage	85-265V
	Shell material	PBT
	Base	E27/E40
	Viewing angle	360°
	Warm white	2600-3000K
	Natural white	4000-4500K
	White	6000-7000K
	Product size	80*80*255mm
	Lifetime	50000 hrs

ECOMAN LED STREETLAMPS

ECOMAN - LED APOLLO SERIES LED STREET LIGHT (14LED'S/MODULE)



Type	Nominal power	Driver/LED	Color temperature
RL2R101-4B	30W	Basic/Basic	4000/5000K
RL2R101-4S	30W	Standard/Standard	3000/4000/5000K
RL2R102-8B	60W	Basic/Basic	4000/5000K
RL2R102-8S	60W	Standard/Standard	3000/4000/5000K
RL2R104-2B	90W	Basic/Basic	4000/5000K
RL2R104-2S	90W	Standard/Standard	3000/4000/5000K
RL2R105-6B	120W	Basic/Basic	4000/5000K
RL2R105-6S	120W	Standard/Standard	3000/4000/5000K
RL2R107-0B	150W	Basic/Basic	4000/5000K
RL2R107-0S	150W	Standard/Standard	3000/4000/5000K
RL2R108-4B	180W	Basic/Basic	4000/5000K
RL2R108-4S	180W	Standard/Standard	3000/4000/5000K
RL2R109-8B	210W	Basic/Basic	4000/5000K
RL2R109-8S	210W	Standard/Standard	3000/4000/5000K
RL2R111-2B	240W	Basic/Basic	4000/5000K
RL2R111-2S	240W	Standard/Standard	3000/4000/5000K
RL2R112-6B	270W	Basic/Basic	4000/5000K
RL2R112-6S	270W	Standard/Standard	3000/4000/5000K
RL2R114-0B	300W	Basic/Basic	4000/5000K
RL2R114-0S	300W	Standard/Standard	3000/4000/5000K

ECOMAN - LED HERA SERIES LED STREET LIGHT (80LED'S/MODULE)



Type	Nominal power	Driver/LED	Color temperature
RL354001	45W	Basic configuration	3000/4000/5000K
RL354002	90W		
RL354003	135W		
RL354004	180W		
RL354005	225W		

ECOMAN - LED HERA SERIES LED STREET LIGHT (100LED'S/MODULE)



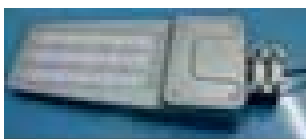
Type	Nominal power	Driver/LED	Color temperature
RL354006	57W	Basic configuration	3000/4000/5000K
RL354007	115W		
RL354008	160W		
RL354009	220W		

ECOMAN - LED HERA SERIES LED STREET LIGHT (20LED'S/MODULE)



Type	Nominal power	Driver/LED	Color temperature
RL354010	45W	Basic/Basic	4000/5000K
RL354011	45W	Basic/Standard	3000/4000/5000K
RL354012	90W	Basic/Basic	4000/5000K
RL354013	90W	Basic/Standard	3000/4000/5000K
RL354014	135W	Basic/Basic	4000/5000K
RL354015	135W	Basic/Standard	3000/4000/5000K
RL354016	180W	Basic/Basic	4000/5000K
RL354017	180W	Basic/Standard	3000/4000/5000K
RL354018	225W	Basic/Basic	4000/5000K
RL354019	225W	Basic/Standard	3000/4000/5000K

ECOMAN - LED CUPID SERIES LED STREET LIGHT (10LED'S/MODULE)



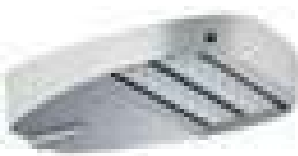
Type	Nominal power	Driver/LED	Color temperature
RL2N200-1B	20W	Basic/Basic	4000/5000K
RL2N200-1S	20W	Standard/Standard	3000/4000/5000K
RL2N200-2B	40W	Basic/Basic	4000/5000K
RL2N200-2S	40W	Standard/Standard	3000/4000/5000K
RL2N200-3B	60W	Basic/Basic	4000/5000K
RL2N200-3S	60W	Standard/Standard	3000/4000/5000K

ECOMAN - LED MINI COB LED STREET LIGHT (1COB LED)



Type	Nominal power	Driver/LED	Color temperature
RL283001	30W	Basic/Basic	3000/4000/5000/6000K

ECOMAN - LED MINI APOLLO SERIES LED STREET LIGHT (14 LED'S/MODULE)



Type	Nominal power	Driver/LED	Color temperature
RL2K280-1B	30W	Basic/Basic	4000/5000K
RL2K280-1S	30W	Standard/Standard	3000/4000/5000K
RL2K280-2B	60W	Basic/Basic	4000/5000K
RL2K280-2S	60W	Standard/Standard	3000/4000/5000K
RL2K280-3B	90W	Basic/Basic	4000/5000K
RL2K280-3S	90W	Standard/Standard	3000/4000/5000K
RL2K280-4B	120W	Basic/Basic	4000/5000K
RL2K280-4S	120W	Standard/Standard	3000/4000/5000K

ECOMAN LED SOLAR-GARDEN AND STREETLAMPS



IN-108	Power	8W
	Material	Aluminium
	Sun collector	18V/20W (Silicon solar cell)
	LED-Brand	12V/8W (Bridgelux)
	Battery	Lithiumbattery 8AH
	Installation height	3-4 m
	Discharge time	36-48 hrs
	Working temperature	-20°C ~+60°C
	Product size	515*320*52mm



IN-112	Power	12W
	Material	Aluminium
	Sun collector	18V/20W (Silicon solar cell)
	LED-Brand	12V/20W (Bridgelux)
	Battery	Lithiumbattery 8.8AH
	Installation height	3-4 m
	Discharge time	36-48 hrs
	Working temperature	-20°C ~+60°C
	Product size	515*320*52mm



IN-115	Power	15W
	Material	Aluminium
	Sun collector	18V/30W (Silicon solar cell)
	LED-Brand	12V/15W (Bridgelux)
	Battery	Lithiumbattery 12AH
	Installation height	3-4 m
	Discharge time	36-48 hrs
	Working temperature	-20°C ~+60°C
	Product size	515*320*52mm



IN-218	Power	18W
	Material	Aluminium
	Sun collector	18V/50W (Silicon solar cell)
	LED-Brand	12V/18W (Bridgelux)
	Battery	Lithiumbattery 18AH
	Installation height	5-6 m
	Discharge time	36-48 hrs
	Working temperature	-20°C ~+60°C
	Product size	960*325*43mm



IN-220	Power	20W
	Material	Aluminium
	Sun collector	18V/65W (Silicon solar cell)
	LED-Brand	12V/20W (Bridgelux)
	Battery	Lithiumbattery 24AH
	Installation height	5-6 m
	Discharge time	36-48 hrs
	Working temperature	-20°C ~+60°C
	Product size	1200*325*140mm



IN-225	Power	25W
	Material	Aluminium
	Sun collector	18V/65W (Silicon solar cell)
	LED-Brand	12V/25W (Bridgelux)
	Battery	Lithiumbattery 22AH
	Installation height	6-7 m
	Discharge time	36-48 hrs
	Working temperature	-20°C ~+60°C
	Product size	1200*325*140mm



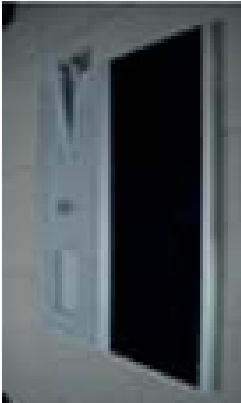
IN-230	Power	30W
	Material	Aluminium
	Sun collector	18V/65W (Silicon solar cell)
	LED-Brand	12V/30W (Bridgelux)
	Battery	Lithiumbattery 28AH
	Installation height	6-7 m
	Discharge time	36-48 hrs
	Working temperature	-20°C ~+60°C
	Product size	1200*325*140mm



IN-240	Power	40W
	Material	Aluminium
	Sun collector	18V/65W (Silicon solar cell)
	LED-Brand	12V/40W (Bridgelux)
	Battery	Lithiumbattery 32AH
	Installation height	7-8 m
	Discharge time	36-48 hrs
	Working temperature	-20°C ~+60°C
	Product size	1200*325*140mm



IN-250	Power	50W
	Material	Aluminium
	Sun collector	18V/80W (Silicon solar cell)
	LED-Brand	12V/50W (Bridgelux)
	Battery	Lithiumbattery 36AH
	Installation height	8-9 m
	Discharge time	36-48 hrs
	Working temperature	-20°C ~+60°C
	Product size	1200*450*140mm



IN-260	Power	60W
	Material	Aluminium
	Sun collector	18V/100W (Silicon solar cell)
	LED-Brand	12V/60W (Bridgelux)
	Battery	Lithiumbattery 40AH
	Installation height	9-10 m
	Discharge time	36-48 hrs
	Working temperature	-20°C ~+60°C
	Product size	1200*450*140mm



IN-270	Power	70W
	Material	Aluminium
	Sun collector	18V/100W (Silicon solar cell)
	LED-Brand	12V/70W (Bridgelux)
	Battery	Lithiumbattery 40AH
	Installation height	10-12 m
	Discharge time	36-48 hrs
	Working temperature	-20°C ~+60°C
	Product size	1200*450*140mm

ECOMAN SOLAR LED LIGHT



Solar LED BULB MH-DB-001	Solar panel	5V, 2W
	Battery	3.6v 10000MAH
	Light source	low power; 2 bulbs (bulb/20LED`s)
	Components	solar panel(160*195*33H) electrical wire (about 5 meters) Material and size: aluminium(130*90mm)
	Operating mode	always on
	Working time	>12 hours



Solar energy flood light MH-TG-040	Solar panel	6V, 2W
	Battery	3.6v 10000MAH
	LED	30 pieces
	Components	solar panel(160*195*33H) electrical wire(about 5 meters) Material and size: aluminium(130*90mm)
	Operating mode	always on



Solar LED BULB MH-DB-002	Solar panel	5V, 2W
	Battery	3.6v 10000MAH
	Light source	low power; 2 bulbs (bulb/20LED`s)
	Components	solar panel(160*195*33H) electrical wire(about 5 meters) Material and size: aluminium(130*90mm)
	Operating mode	always on
	Working time	>12 hours

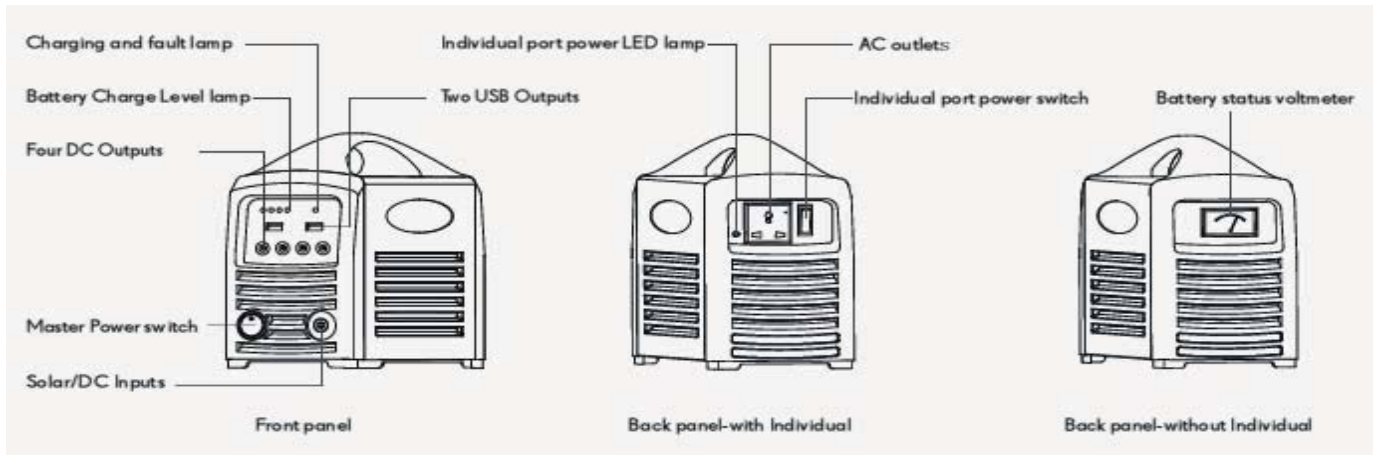
**INTELLIGENT.
PORTABLE.**

The new solar power source with ECOMAN smart series



Create New Energy

How to use your Smart



There are 3 ways to charge your Smart

-The Sun

The Smart can be charged by connecting a compatible solar panel.

-Wall

The Smart can be charged by being plugged into a regular wall outlet.

-Car

The Smart can also be charged by plugging into your car 12V adapter.

The Smart Powers your device in ways

-USB

The USB part best charges all your large sized or multiple USB powered devices.

-DC12V

The 12V best charges all your 12V powered devices.

-AC Outlet

Plug in your device just as you use the wall's outlet.

Electronic Protections

-PV array short circuit

-Over discharging




-Over charging

-Load overload

-Load short circuit

-Vreverse polarity

Essential Features

Model		Smart-80	Smart-120	Smart-200	Smart-240	Smart 360
Battery						
Battery Type		Sealed Lead-acid (AGM) or Lithium iron phosphate				Lithium iron phosphate
Battery Capacity, 12V		7AH	10AH	17AH	20AH	30AH
Optimal Charging Current		1.5A	2A	3A	4A	6AH
DC Output						
Overload Protection		With, Automatic fault protection, Activated after the restart				
 USB Port	Capability, 5V	1A;5W;0.6A,3W				
	Port number	2				
 DC Port	Capability, 12V	Single port: 3A,36W: Total: 10A,120W				
	Port number	4				
AC Inverter Outputs						
	Output Voltage	N/A		110V or 220V		
	Frequency	N/A		50 or 60 Hz		
	Capability Max	N/A		200W		
	Port number	N/A		1		
	AC Out Port	N/A		all-purpose		

Characteristic

Model		Smart-80	Smart-120	Smart-200	Smart-240	Smart-360	
Characteristic							
	Sheating Material	ABS					
	Sheating Color	...other					
	Weight (only Box)	Sealed Lead-acid	3.5 kg 7.7 lb	4.1 kg 9 lb	6.4 kg 14 lb	7 kg 15.4 lb	N/A
		Lithium iron Phosphate	2.4 kg 39.2 lb	2.8 kg 5.6 lb	N/A N/A	4 kg 8.8 lb	5.5 kg 21.1 lb
	Size (LxBxH)	292 x 128 x 235 (11.5 x 5.03 x 9.25 in)					
	Certification test	CE, ISO , RoHS					



Load Reference




	LED Light 3W	Phone 0.5W	Radio 0.2W	iPad 2.5W	TV 70W	Laptop 25W
Smart-80	21 Hr	5.5 Day	14 Day	26 Hr	N/A	N/A
Smart-120	31 Hr	8 Day	20 Day	37 Hr	N/A	N/A
Smart-200	50 Hr	13 Day	33 Day	62 Hr	2 Hr	5.5 Hr
Smart-240	62 Hr	16 Day	40 Day	74 Hr	2.5 Hr	7 Hr
Smart-360	93 Hr	24 Day	60 Day	112 Hr	3.75 Hr	10.5 Hr

Solar Panel Selection

Solar Panel							
Capability		10W	15W	20W	30W	40W	50W
Operating Current		0.7A	1.1A	1.38A	2.1A	2.76A	3.45A
Net Weight		1.72kg	1.75kg	2.35kg	2.7kg	4.2kg	4.2kg
		3.78lb	3.85lb	5.17lb	5.94lb	9.24lb	9.24lb
Dimensions (LxBxH)	mm	356x39x17	356x391x17	560x36x25	554x50x25	636x55x25	678x542x25
	in	14x13.1x0.67	14x15.4x0.67	22x14.3x1	21.8x17.7x1	25x21.8x1	26.7x21.3x1
Certification test							
Charge time							
	Smart-80	9Hr	6Hr	4.5Hr	N/A	N/A	N/A
	Smart-120	N/A	N/A	6Hr	4Hr	3.5Hr	N/A
	Smart-200	N/A	N/A	10Hr	6.5Hr	5Hr	4Hr
	Smart-240	N/A	N/A	12Hr	8Hr	6Hr	4.5Hr
	Smart-360	N/A	N/A	18Hr	11Hr	9Hr	7Hr

Accessoires Selection

Laptop Charger					
 <ul style="list-style-type: none"> · Reverse polarity protection · Sensing and following the battery voltage · Constant output current to protect both battery pack and charger · Lowering voltage once charge completed · Discoloring LED displaying working state 	Input Voltage	100-240VAC, 50/60Hz			
	Output Current	1.5A	2A	3A	5A
	Smart Type	Smart-80	Smart-120	Smart-200 Smart-240	Smart-360
	Charge time	4Hr	4.2Hr	5Hr/6Hr	5Hr
LED Light with Switch, LED					
 <p>5m Cables with E27 pin connection and Switch</p>	Operating Voltage	DC12V			
	Light Power	3W	6W	9W	
	Selection	With 2set	Optional		

USB Output Suite		On-board link line		The adapter Connector	
	Appropriate for: Iphone, HTC, Samsung, Nokia, LG, Huawei, etc		Selection: Optional Notes: Auto start after connect Course		Selection: Optional



WIND POWER

ENVERGATE - WINDPOWER

QUINTA 20

OPERATING DATA	
Installed power	20 kVA
Shutdown speed	22m/s
Sound emission in standard operation	38-43 dB

ROTOR	
Wingspan	6m
Rotor diameter	5m
Area	30qm
Wings	100% CFK / matt white
Blade angle adjustment	electronically controlled
Generator	Permanent Magnet Generator (PMG) 20 kVA

SECURITY SYSTEM	
Control	1 PLC/SPS

FREQUENCY CONVERTER	
Adjustable grid feed	10-20 kVA
Grid inverter / Battery charge	optional
Efficiency at 20 kVA	>97%
Grid inverter (50/60 Hz)	400 VAC(+/-3%)
CosPhi (adjustable)	0.8 ind. to 0.8 cap.

ENVERGATE - WINDPOWER

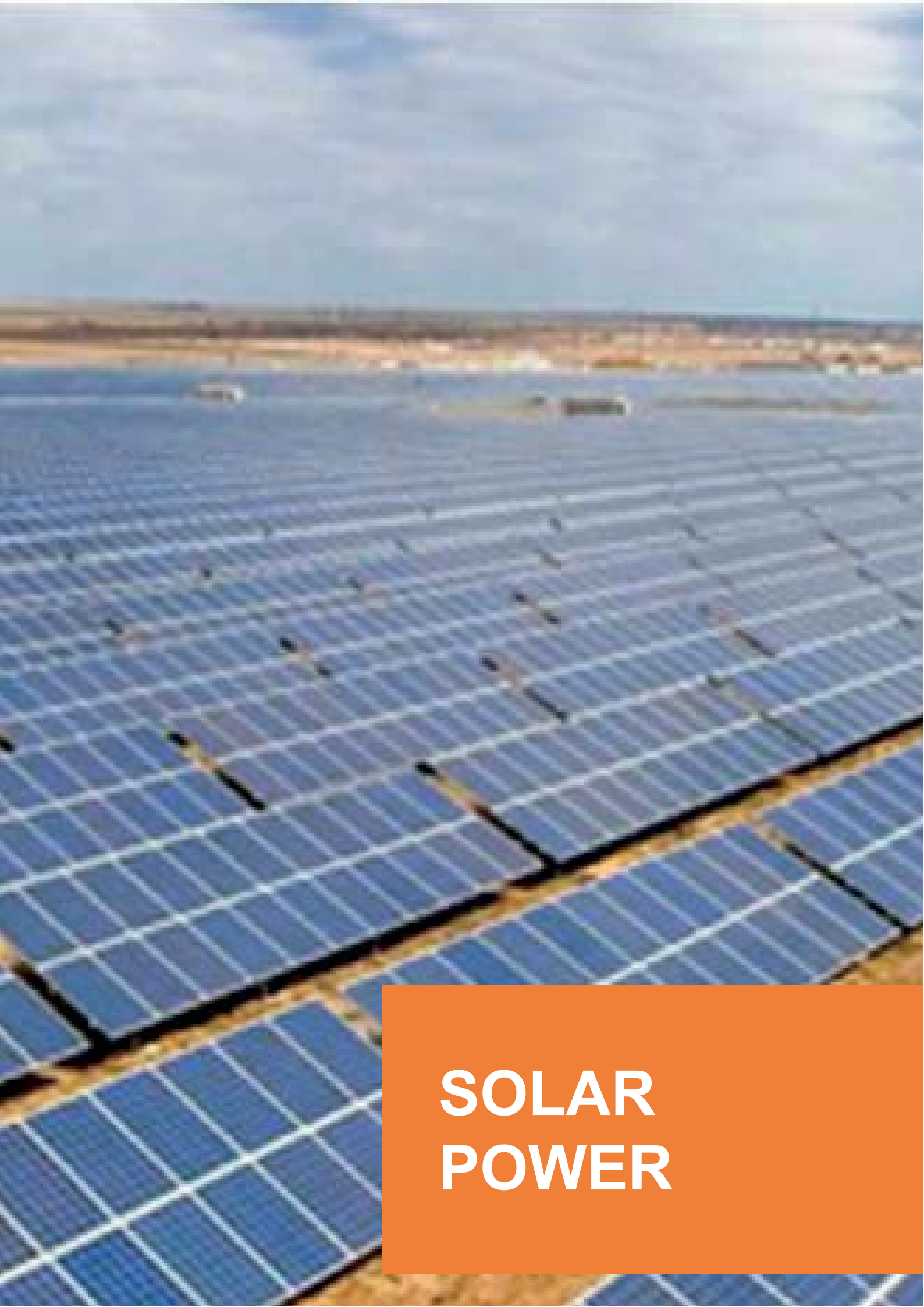
QUINTA 20

POLE	
Switch board	ventilated, heated, IP54
Control voltage	24 VDC
Remote monitoring	GPRS / UMTS

CONTROLS	
Dimension	3.3m x 3.3m

FOUNDATION	
Type	Steel (protected against corrosion) concrete
Standard pole height / incl. Rotor	15m / 19.5m





SOLAR POWER

SOLABRIO

PV POWER PLANT SOLUTION OVERVIEW

Together with our partners we provide the following solutions:



Grid Integration

Our advanced grid integration technology provides PV plants that actively stabilize the electricity grid and operate more like traditional electricity generation plants.



Solar Field Set-up

The construction concept of our partner allows fast installation and high stable mounting of the modules and reliable electrical commissioning of the solar field.



PV Plant Control System

Our data acquisition, plant control and monitoring system enables the PV Power Producer to provide reliable and predictive solar energy supply and system availabilities.



Operations & Maintenance

By leveraging our experience in plant optimization and maximizing energy output, we have developed the most advanced operations and maintenance program in the PV industry.

SOLABRIO

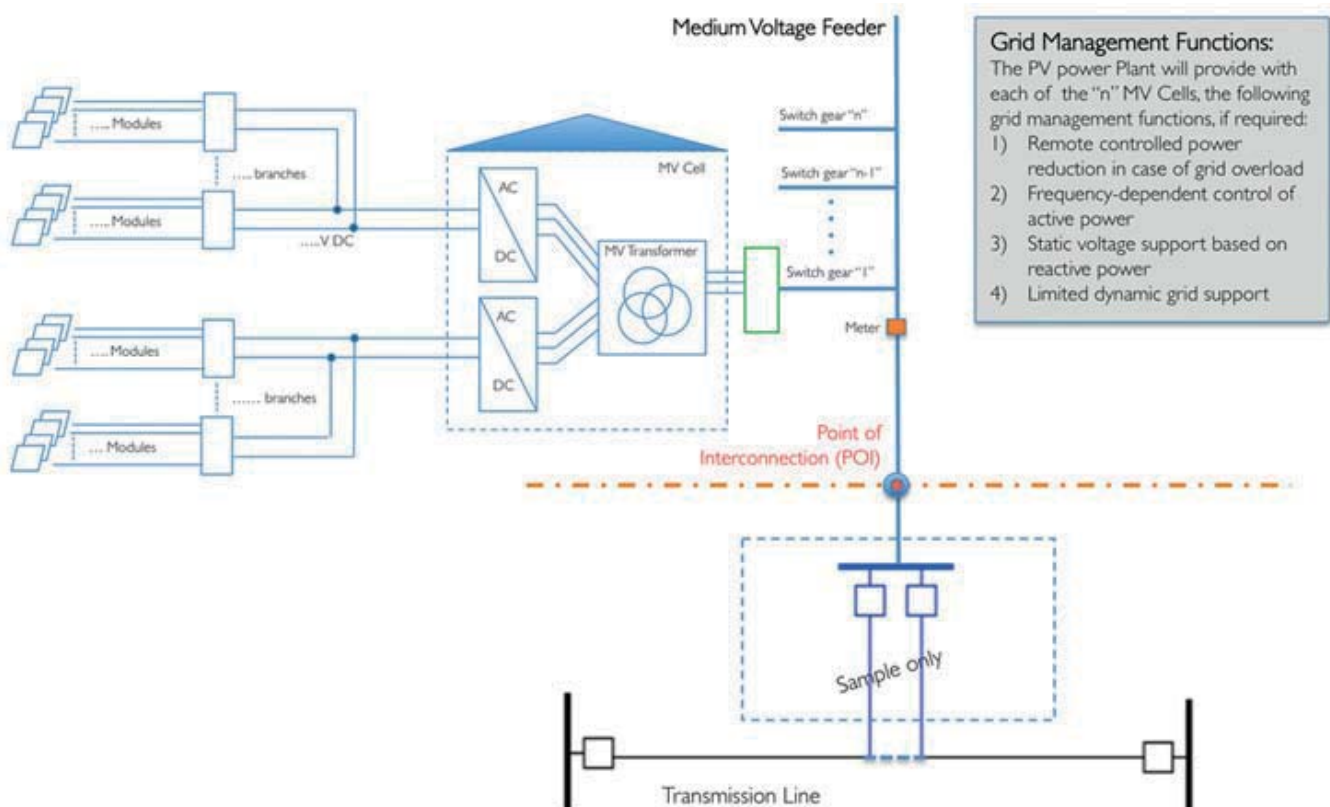
GRID INTEGRATION

Advanced Grid Integration Technology

An advanced grid integration technology makes sure that PV plants actively participate to stabilize the electricity grid and operate more like traditional electricity generation plants.

The system architecture shows in the picture below, a modular concept of a PV power plant, which can participate in the stabilizing of the grid with the following features:

- Remote controlled power reduction in case of grid overload.
- Frequency-dependent control of active power.
- Static voltage support based on reactive power.
- Limited dynamic grid support.



SOLABRIO

SOLAR FIELD SET-UP

You can expect the highest-quality technical standards

Our general contractor deploys highly specialized teams throughout every phase of a photovoltaic investment property, whether they're needed for a particular module or the entire process. And that's around the world. When you work with us, you experience the peace of mind and solid foundation for your capital investment that comes with across-the-board configuration. From finding the right plot to commissioning your equipment. And you can expect the highest-quality technical standards, complete with the "made in Germany" label.

The best foundation for your capital investment

The quality of the substructures on your photovoltaic module are a deciding factor in the long-term value of your overall system. That's why we guarantee extremely high standards when manufacturing racks. This is true for the materials we use, the finishes we choose and all the design details we create. Every time, we draw on our extensive expertise as well as our understanding of the specific site. So you enjoy uncomplicated assembly and a long service life. And what makes your system a safe investment property? Protection against corrosion. Super-safe cable routing. Resistance to twisting and the weather.



SOLABRIO

Solar panels to provide stable power output over the lifetime

Our solar panels are designed and engineered to meet the highest quality standards and provide stable power output over the lifetime of the product. We offer new industry leading product and power output warranty that provides real security to your project. At least 97% output guaranteed during the first year of performance, And a maximum of 0,7% reduction of power output per year from year 2-25. This guarantees more than 90% annual power output after 10 years and more than 80% annual power output after 25 years.



Solar inverter, transformer, and medium voltage switchgear optimized for the specific site

Our megawatt station design capitalizes on long experience in the development and manufacture of secondary substations for electrical authorities and major end-users worldwide in conventional power transmission installations. A station houses two central inverters, an optimized transformer, medium voltage switchgear, monitoring system and solar generator terminal boxes, which connect a PV power plant to a medium voltage electricity grid easily and rapidly.



SOLABRIO

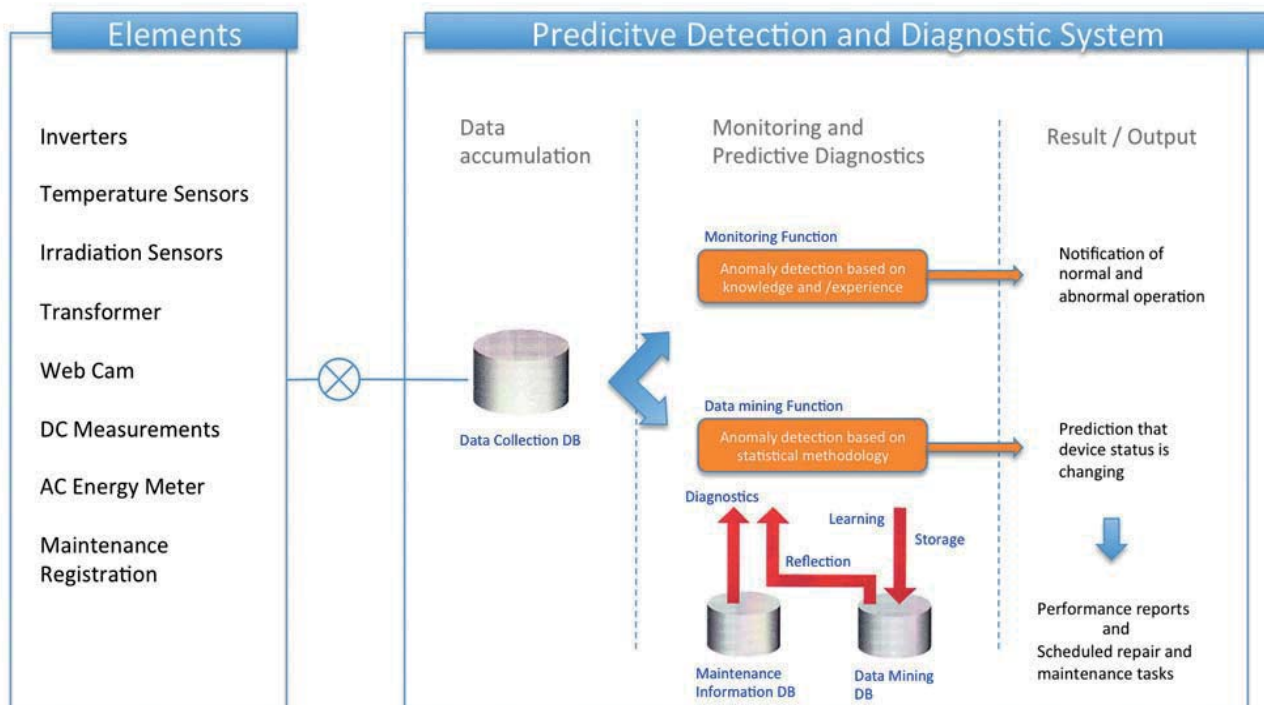
PV POWER PLANT CONTROL SYSTEM

PV Power Plant Monitoring System

Our PV Power Plant Monitoring system offers smart and flexible solutions for managing PV Power Plants in the megawatt range. The PV monitoring and optimization includes a data acquisition system, supervisory monitoring and control station at plant level and Decision Support System (DSS) at the Central Control Station. Plant level system is for basic data acquisition from DC, AC equipments and weather sensors and for providing PC based monitoring and control system for operational purposes. DSS at central control station is used for advanced analytics, enterprise level monitoring and reporting.

Functionally, our solution for the grid interactive solar PV power plant and as shown in the figure below consists of:

- Plant level monitoring system covering PV Strings, String Junction Boxes/String Combiner Boxes, PCU/Inverters, Protection relays, Energy meters, Weather monitoring station/sensors, LT and HT control panels, DC Switches and Transformers.
- Alarms, events and trends of all parameters logically grouped and filtered for easy reading.
- Event and predictive maintenance notification on SMS/e-mail.
- Decision Support System (DSS) at secure Web based Control System with Data Analysis, KPI monitoring and Scheduling.
- Web portal of DSS is accessible to authorized users.
- Key parameters can be ported to corporate web site also.



SOLABRIO

OPERATION & MAINTENANCE

Solar Power Production Guarantee

Our mission is to provide ongoing operation and maintenance services for utility scale and commercial photovoltaic systems. Utilizing our state-of-the-art technology and highly experienced solar energy engineering staff, we have the ability to track all of the indicators and parameters to optimize performance and to carry out the required maintenance of our client's solar farm.



The total operation and maintenance program

Together with our partner, we offer the essential elements for implementing a total operation and maintenance program. Our proprietary operation and maintenance management system organizes preventative and corrective maintenance, task assignments, report generation, budgeting, stock inventory and document management. The user interface is customizable to the customer's unique needs and allows the customer to have access to review the status of the ongoing operation and maintenance work on each

Our bankable Operation and Maintenance Solution.

Our solution is bankable for the operation and maintenance of solar energy generation plants. Our O&M agreement provides a working plan to cover repairs, protect warranties, and perform preventive maintenance. To ensure a facility is operating at optimum efficiency and not losing money, our O&M provider will generally install a monitoring system to not only keep a close watch on all of the arrays working components to achieve maximum performance, but also to analyze and report on energy production, trend costs, produce quick budgets on site and more.

ECOMAN[®]

ECOMAN WORLDWIDE



ECOMAN MISSION STATEMENT

If we see a common future and a common goal in front of us, then we should agree on a common path, shared values, principles and behaviours. This is the only way how we will be able to achieve our goal successfully and planned in common agreement. These common principles are the mission statement of the company ECOMAN.

We share common values

We maintain an open, active and honest communication.

We say what we do and we do what we say.

Our behavior is characterized by integrity, responsibility, trust, tolerance and respect.

We create additional value

We want that our customers and partners can benefit from the cooperation with us.

Therefore we offer innovative products and services.

We design our future

We want to be sustainable profitable and create additional value for our company.

This will secure our freedom of action and competitiveness.

We are proud of our employees

We employ qualified, motivated and performance-oriented employees with high social and professional competence.

We offer an attractive environment for superior performance. We expect our managers to behave exemplary.

We act prudently

Responsibility and safety awareness characterize our actions towards humans and the environment.

We are pacemakers

We recognize new opportunities immediately and use them.

ECOMAN CONTACT



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