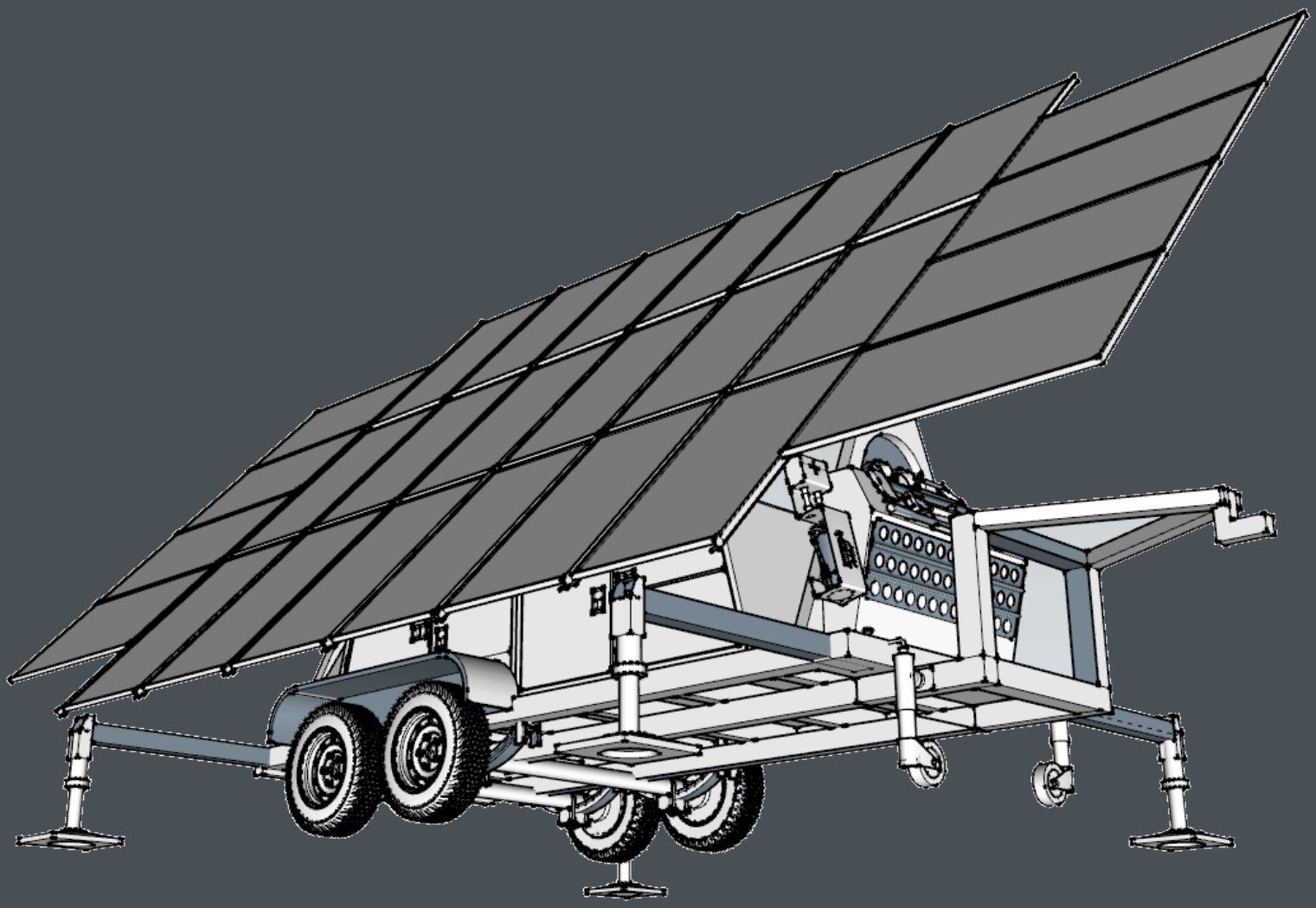
PRODUCT CATALOG

SIRIUS Compact



Portable/Storable Solar Energy System

www.modultechnics.com

SIRIUS Compact

SIRIUS Compact

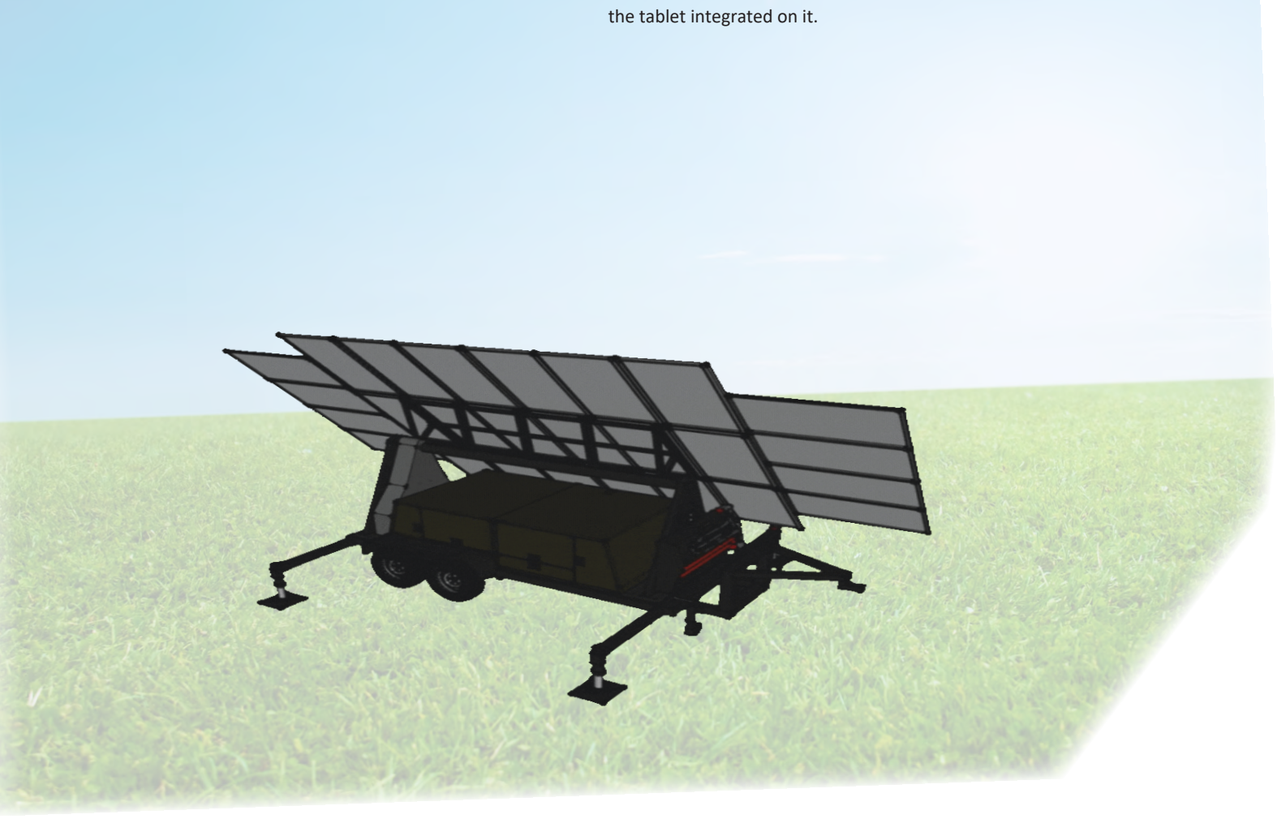
Portable/Storable Solar Energy System

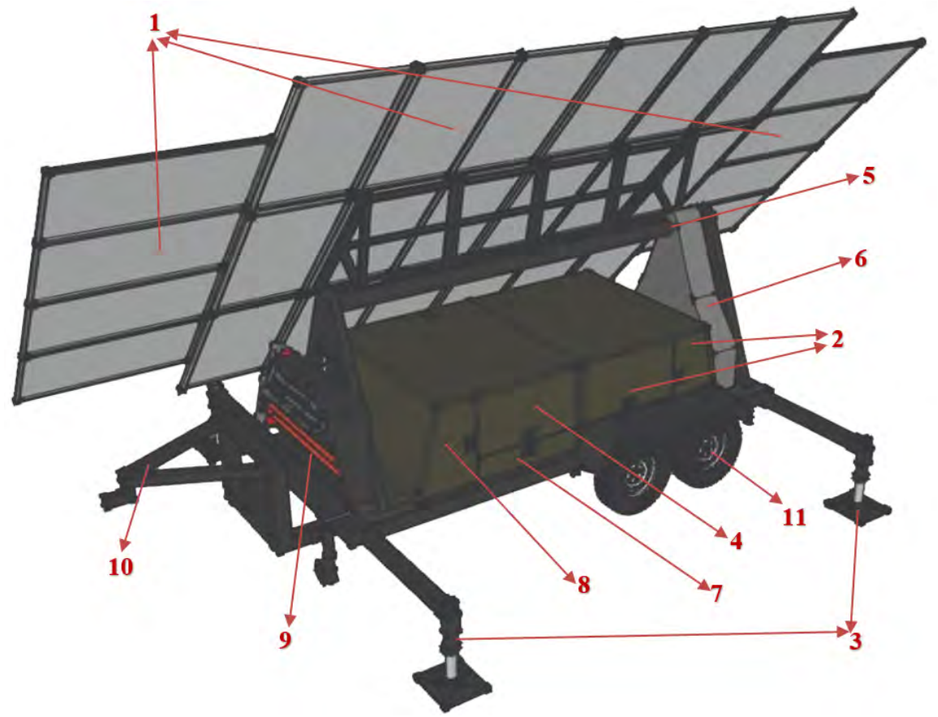
GENERAL

SIRIUS Compact - Our Portable / Storable Solar Energy System; is a device that converts sunlight into electricity via photovoltaic (PV) cells by making maximum use of sunlight. When exposed to light, PV cells produce direct current (DC) electricity to operate various devices and to be stored in batteries and/or accumulators by flowing through the circuit. Our system is designed to be completely mobile and can be transported to the location where it will be used when needed without any extra parts or intervention. The system is designed to suit difficult terrain conditions.

Working Principle of SIRIUS Compact

SIRIUS Compact, mono crystal (PV) cells, body and wing system of our system, the lower case of the trailer is designed as accumulator bed, control panel, movement mechanisms and accessories area. When our trailer is placed in the position where it will be used by towing, it positions itself at the appropriate angle via the user's mobile phone or tablet and compass thanks to our own software. The trailer, which reaches the appropriate angle, fixes its position with hydraulic legs that automatically come out from the sides of the unit when our system starts working. After this process, it opens its panels again by getting approval from the user or automatically, finds the direction of the sun and continues to move with the sun with the oscillation depending on the relevant software. Our system can be monitored over the internet thanks to the software, energy production and consumption can be tracked. The system is designed to be opened and closed remotely via the software and control panel. In environments where there is no internet, the control panel is designed to be operated and controlled manually via the tablet integrated on it.





Sustainability

Today, solar energy is an alternative to fossil fuels because it is an environmentally clean source. Solar energy is both abundant, continuous, renewable and a free source of energy. In addition, the fact that most of the environmental problems caused by the use of traditional fuels are not present in solar energy production makes this type of energy a clean and environmentally friendly energy. The use of photovoltaic (PV) electricity is constantly increasing worldwide due to reasons such as the absence of fuel problems, ease of operation, no mechanical wear, being modular, being able to be put into operation in a very short time, working without problems for many years and being a clean source of energy.

The trailer's center of gravity calculation is made according to the gel battery/battery group; off-road axles and suspensions are arranged according to this calculation. In this way, the load that the trailer will apply to the front coupling is minimized, and the trailer is designed in a way that it will not strain the tractor even on slopes.

Standard Equipment

1. Solar Panels (PV)
2. Gel Accumulator/Battery Area
3. Hydraulic Stabilization Feet
4. Electrical Fuse Panel
5. Movement Axle
6. Movement Mechanism
7. Hydraulic System Manual Control Panel
8. Closed Circuit Control Panel
9. Accessory Compartment
10. Towbar
11. Undercarriage of The Trailer

SIRIUS Compact

Sonar Panel (PV)

APEXM6HC-455W
Hulf-Cut Monocrystal Module
Positive Power Tolerance 0~+5
IEC 61730 Product Certified

KEY FEATURES

Multi Bus Bar Technologies
Better light capture and current collection to increase module power output and safety

PID Resistance
Guaranteed excellent Anti-PID performance through optimized mass production and material control

Anti-PID

Reduced Temperature
Optimized electrical design and lower operating current for lower hot spot loss and better temperature coefficient

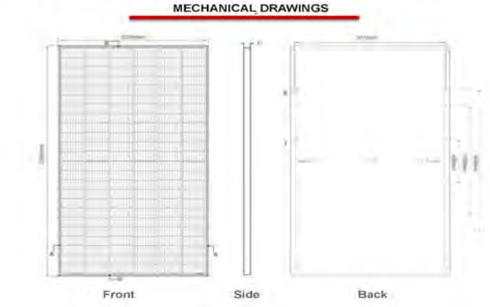
Advanced Mechanics
Durability Certificate: Wind Load (2,400 Pascal) and Snow Load (5,400 Pascal)

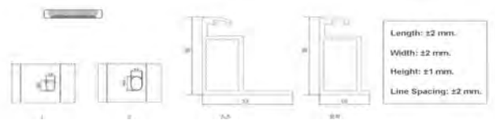
LINEAR PERFORMANCE GUARANTEE

12 Years Production Warranty | 25 Years Linear Power Warranty | 0.55% Annual Deterioration in 25 Years

Guaranteed Power Performance

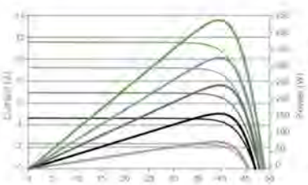
MECHANICAL DRAWINGS



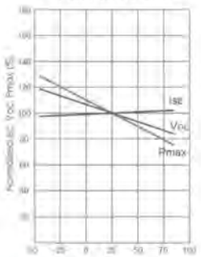


ELECTRICAL PERFORMANCE AND TEMPERATURE

Current - Voltage & Power - Voltage Curves (445 W)



Temperature Dependence of Isc, Voc, Pmax



MECHANICAL CHARACTERISTICS

Cell Type	Monocrystal PERC 166x83 mm.
Number of Cells	144 (6x24)
Dimensions	2096x1039x25 mm. (82.5x40.91x1.38 inch)
Weight	23 kg. (50.70 lbs)
Windscreen	3.2 mm., AR coating tempered glass, low iron high transmission
Frame	Anodized Aluminum Alloy
Connection Box	IP68 Rated
Output Cables	1x4.00 mm², Length 900/1200 mm. or customized length

FEATURES

Module Type	APEXM6HC-455W	
	STC	NOCT
Max Power (Pmax)	455Wp	339Wp
Max Power Voltage (Vmp)	41.56V	38.47V
Max Power Current (Imp)	10.95A	8.80A
Open Circuit Voltage (Voc)	49.46V	46.59V
Short Circuit Current (Isc)	11.60A	9.37A
Module Efficiency STC (%)	20.89%	
Operating Temperature (°C)	-20°C~+85°C	
Max System Voltage	1000/1500VDC(IEC)	
Power Tolerance	0~+5	
Temperature Coefficients of Pmax	-0.35%/°C	
Temperature Coefficients of Voc	-0.29%/°C	
Temperature Coefficients of Isc	0.048%/°C	
Nominal Cell Operating Temperature (NOCT)	45±2°C	

STC: Radiance 1000 W/m² | Cell Temperature 25°C | AM=1.5

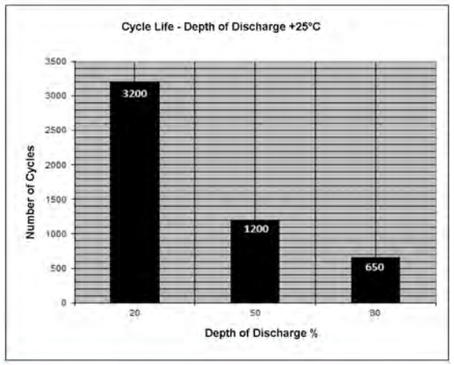
NOCT: Radiance 800 W/m² | Cell Temperature 20°C | AM=1.5

Wind Speed 1 m/s

* Power Measurement Tolerance ±5W

Solar Gel Accumulator

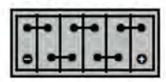
Product Code	YGE12-100
Design Code	26002108E
Nominal Capacity (Ah)	100
Case Type / Number of Cells	D2 / 6
Voltage (V)	12
Electrolyte Type	Gel
Weight (kg) (± 5%)	34,9
Dimensions (mm) L / W / H (H1-H2)	355/174/210-232 [+5/-1mm]
Terminal Type	Round (DIN 72311-4) + M8 Optional
Float Voltage	13,6 - 13,8 VDC @25°C
Cycle Voltage	14,25 - 14,6 VDC @25°C
Recommended Charging Current Limit (Ah)	10
Discharge Cut-Off Voltage 100% Discharge Depth DOD	1,75 VDC @ (A) <=0,2 C
Capacity C20 (Ah)	100,0
Capacity C10 (Ah)	88,9
Capacity C5 (Ah)	79,6
Capacity C3 (Ah)	75,8
Self Discharge	Less than 2% per month @25°C
Storage Period	6 months @25°C. Recommended to charge before use.
Cycle Life DOD 80%	650
Cycle Life DOD 50%	1200
Cycle Life DOD 20%	3200
Internal Resistance (milliohm)	7,1 @25°C
Short Circuit Current (Ampere)	2235
Cell Cut-off Voltage (1.70V)	237.5 W/10 sec.

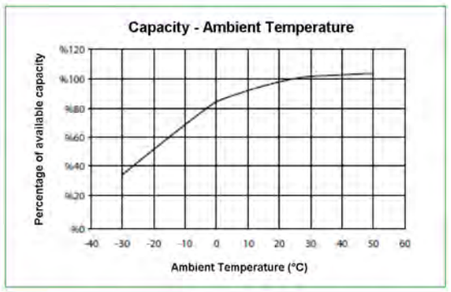


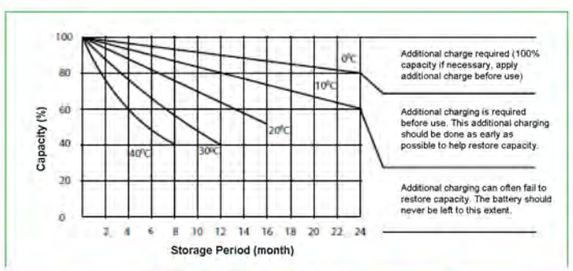
Terminal Type A
DIN 72311-4 Round Type

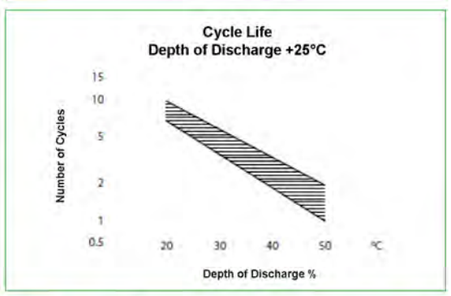
Terminal Type S
(M8-Optional)

Layout (0)





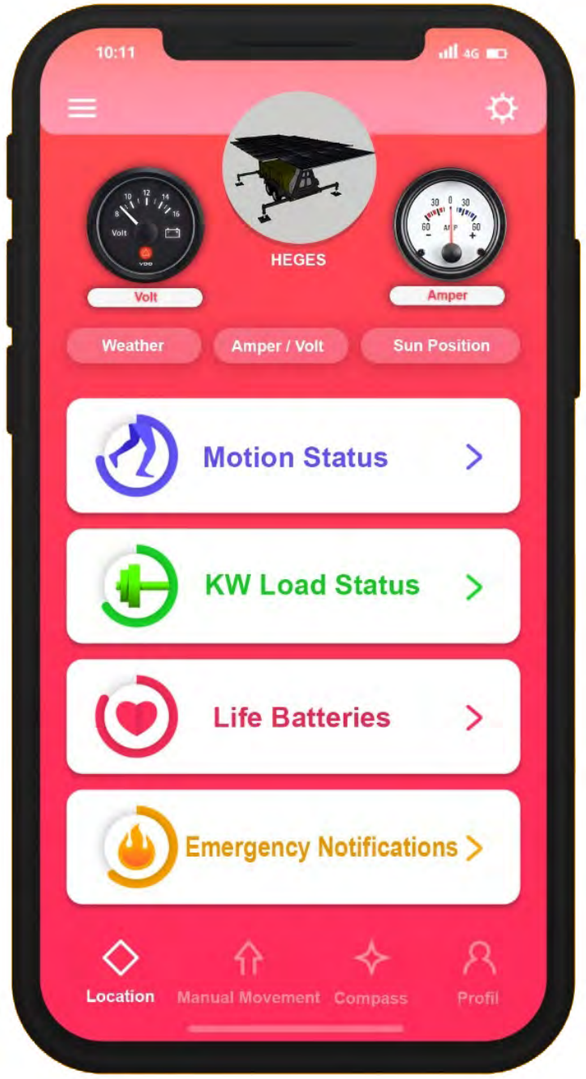




GelEnergy

SIRIUS Compact

Main Control Panel



- Wi-Fi Connection
- Simultaneous remote control
- Continuous energy production and consumption monitoring module
- Continuous energy storage monitoring module
- Solar Panels (PV) direction tracking module
- Battery and Panel life status monitoring module
- Digital Positioning tracking module
- Defining User Profile
- Emergency Notifications Module

In locations where the trailer is positioned and doesn't have an internet connection, it will be managed by controlling it from the tablet located on the trailer.

Features & Area of Usage

Solar energy systems can currently only be used economically in places where there is no electricity grid, in places far from settlements, and where it is difficult and expensive to carry fuel to the generator. For this reason, it is generally used in applications such as signaling and meeting rural electricity needs. However, SIRIUS Compact, due to its design structure and ability to meet high energy needs continuously; It is a solution to all user needs that require continuity in agricultural irrigation, farm projects, mines, dairies, construction sites and mobilization, in short, in every area where electricity is needed.

Accessories

2 Pcs. 6 kg. Dry Chemical Type Fire Extinguisher
1 Piece Hi-Jack Off Road Jack 48''
2 Pcs. Off-Road Pallets (against sinking in soft ground)
1 Piece Spare Tire - Rim Set
1 Set Hand Tools That May Be Needed in the Field

***An optional crane can be placed at the front and rear of the trailer.

Undercarriage of The Trailer

In our SIRIUS Compact model, thanks to our high-sized tires suitable for terrain conditions, the movement capacity has been increased in a way that is suitable for every terrain. The terrain axles and suspensions placed on the system have been placed by calculating the center of gravity of the trailer. The static load has been balanced by using double axles.
SIRIUS Compact, considering all the negative conditions that may occur during transportation; 2 pallets have been placed at the front of the trailer to be used on the grounds that may sink, mud, snow and ice due to the softness of the terrain.

Classification

The solar panels (PV) used in our SIRIUS Compact system are manufactured, tested and certified in accordance with IEC 61730 – IEC 61215 – IEC 61446 standards, gel batteries are manufactured in accordance with 2004/108/EC electromagnetic compatibility directive, TS EN IEC 61000-6-1 electromagnetic compatibility standard, fire extinguishers are manufactured in accordance with TS 862-7 EN 3-7 + A1 – TSE EN 3-10/13.01.2011 – TSE EN 3-8/22.11.2011 standards.

Capacity & Technical Details

40 KvA, 26 Cell, 24 Accumulator	SRSC040.01

*** Please contact our sales department for your needs outside of standard production and optional product requests.

Warranty & Spare Part

All our products are under our 2 years warranty against manufacturing defects. Spare parts supply is under our warranty for 10 years after the end of the warranty period.

Storage and Handling

All products are separately packaged and stored in under controlled conditions.

SIRIUS Natural Technology

MODULTEKNIK YAPI SAN. ve TIC. A.S.
Aşık Veysel Mah. Vedat Altun Sok. 78E1
Esenyurt / İSTANBUL / TURKEY