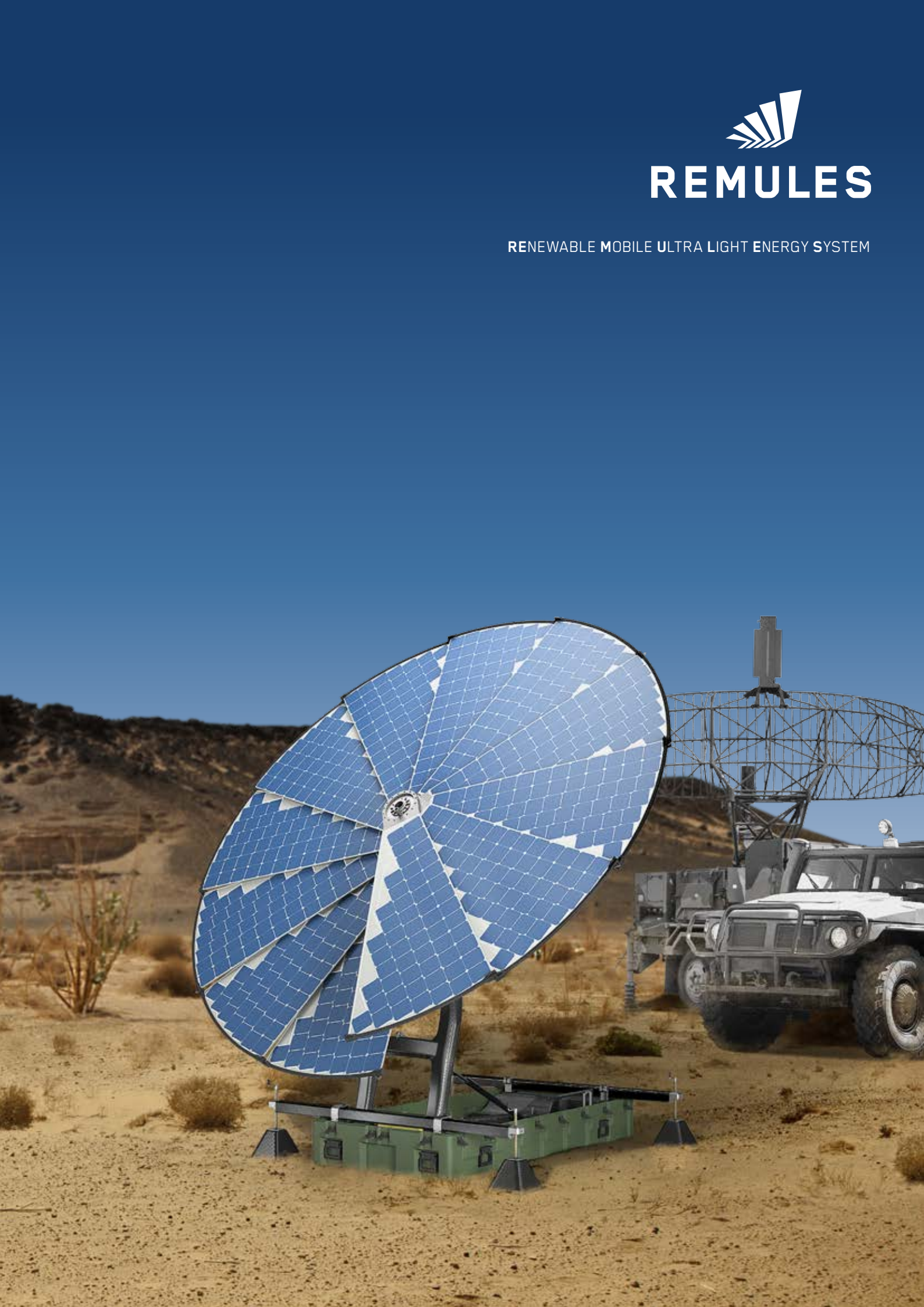




REMULES

RENEWABLE MOBILE ULTRA LIGHT ENERGY SYSTEM



THE WORLD'S FIRST ALL-IN-ONE CARBON FIBER SOLAR ENERGY SYSTEM FOR HUMANITARIAN AND MILITARY OPERATIONS

OUR MISSION: FLEXIBLE AND FAST

Today's humanitarian organizations and armies need maximum mobility, autonomy, and security, which is why it is so important that they take advantage of modern and sustainable energy solutions.

REMULES – the world's first all-in-one, fully mobile solar energy system with an output power of 2 kWp – is built to perfection using the highest quality materials available in the solar and aerospace industries.

Carbon fiber technology ensures a robust design while minimizing the weight of all main components. The REMULES system can therefore be carried comfortably by four people and set up by just one person in under ten minutes. REMULES is also airdrop proved.

Furthermore – REMULES, with its integrated bi-axial sun tracking mechanism, is the most efficient solar energy system available, producing up to 40% more energy than fix mounted systems.



ONE-PERSON SETUP
IN LESS THAN 10 MINUTES



190 KG NET
SYSTEM WEIGHT



2 KWP POWER
OUTPUT



SAND ABRASION TEST,
MECHANICAL LOAD TEST



ALL-IN-ONE SOLAR
ENERGY SYSTEM



CONSTRUCTED ENTIRELY
FROM CARBON FIBER



BI-AXIAL TRACKING
FOR MAXIMUM YIELD



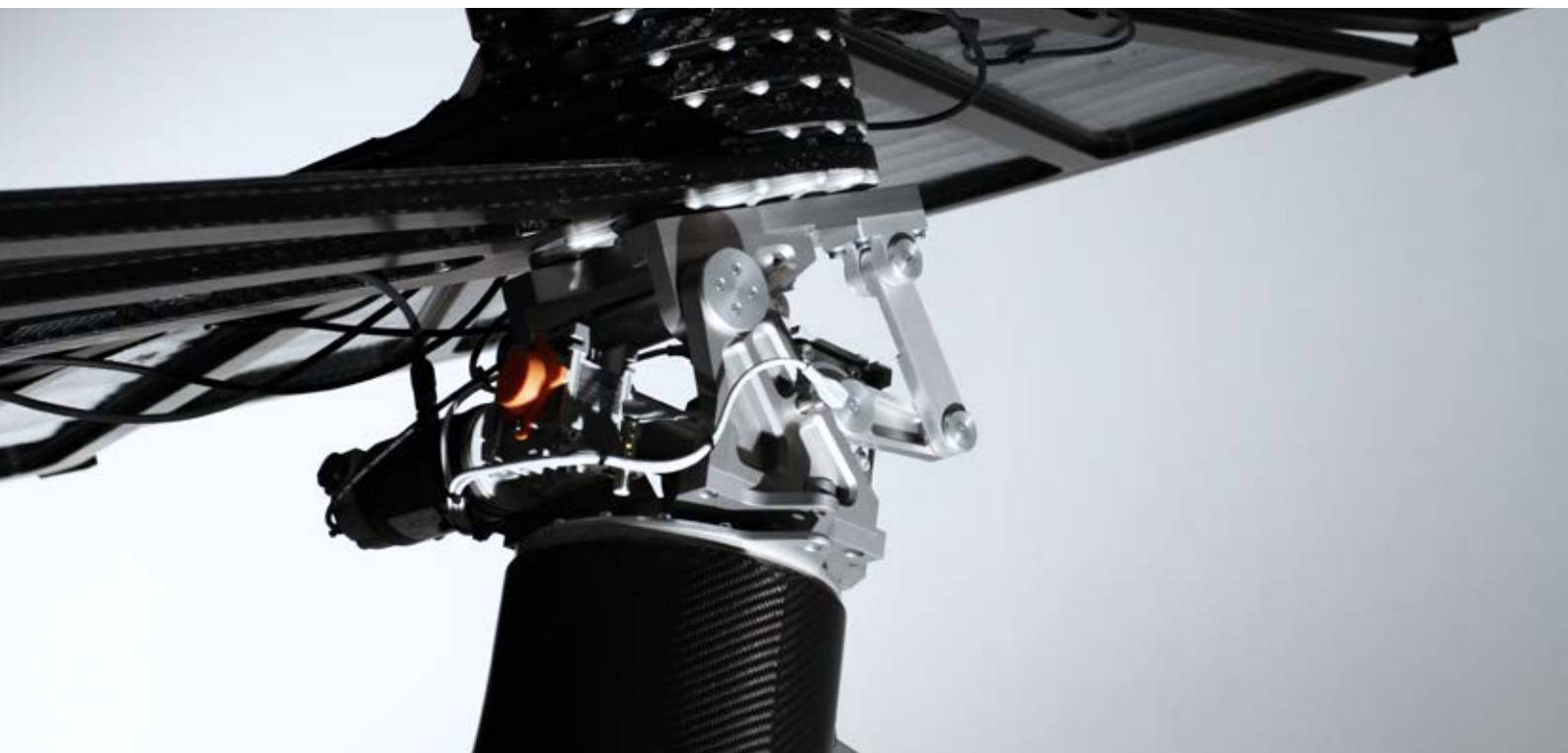
MAXIMUM EFFICIENCY
SOLAR CELLS



AIRDROP
PROVED

A REVOLUTIONARY FUSION OF SOLAR AND AEROSPACE TECHNOLOGIES

DESIGNED FOR AND TESTED
UNDER THE TOUGHEST OF CONDITIONS





ULTRA-LIGHTWEIGHT CARBON FIBER DESIGN

Constructed entirely from light carbon fiber, the complete REMULES system (not including the PELI packaging) weighs only 190 kg. This state-of-the-art engineering feat was accomplished in cooperation with companies from the aerospace and solar industries.

BI-AXIAL SOLAR TRACKING FOR OPTIMIZED POWER OUTPUT, INITIALIZED USING GPS DATA

Thanks to the integrated GPS tracking system, REMULES solar modules can follow the position of the sun in two axes. Power output is optimized as a result and energy yield is increased by as much as 40% compared to standard fix mounted solar energy systems.

MOBILE ALL-IN-ONE SOLAR ENERGY SYSTEM

REMULES is a complete, all-in-one solar energy system that can be set up for operation by just one person within ten minutes. The REMULES solar energy system is therefore an ideal highly mobile renewable energy solution for use in the field.

HIGH EFFICIENCY SOLAR MODULES

The solar modules are made from composite materials used in the aerospace industry. The efficiency of the high efficiency monocrystalline cells exceeds 22%. The module technology is certified in accordance with the IEC solar norms.

AIRDROP PROVED

REMULES is designed to withstand the toughest environmental conditions and has shock absorbing capabilities. The system has been airdrop tested according to NATO standards.

ANTI-REFLECTION AND STEALTH PV MODULES

Thanks to the use of cutting edge SST (stealth solar technology) and special composite materials for the REMULES solar modules, the modules cannot be detected by radar signals.

NOT DETECTABLE BY TI

Since REMULES does not produce heat, it cannot be detected by thermal imaging devices. Furthermore, the system operates completely silently.



TECHNICAL SPECIFICATIONS

COMPOSITION

- › Constructed entirely from carbon fiber to keep weight to a minimum
- › Successfully combines aeronautic and photovoltaic technologies
- › Highest efficient PV technology
- › Modules without glass sheets
- › Extremely light, semi-flexible foil laminates
- › All modules work independently (bypass technology)
- › Fully automated bi-axial tracking
- › Easy to exchange in the event of damage
- › Ultra-robust packaging (PELI box)
- › System setup via hydraulic pump
- › Separate battery unit
- › All necessary components included
- › 100 % stand-alone operation
- › Co-generation with other generators

ELECTRICS AND MEASURES

POWER OUTPUT

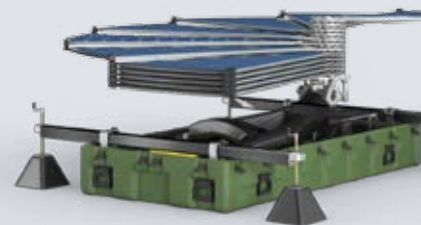
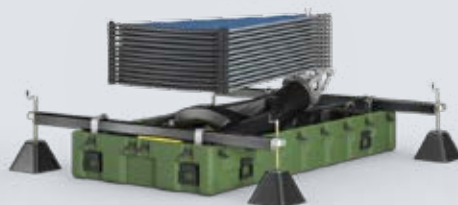
Nominal power output	2 kWp
Energy yield due to tracking	equivalent to 2.7 kWp
Power output	AC or DC

SYSTEM

Module type	Foil technology, without glass sheets
Cell type	Monocrystalline
Inverter module	Single-phase, optional

MEASUREMENTS & WEIGHT

Net system weight	190 kg
Weight of transport box	100 kg
Box footprint	1.2 m x 2.4 m
Hub height	2.3 m
Max. system height	4.2 m
PV diameter	3.8 m



REMULES – THE BACKGROUND

REMULES WAS THE RESULT OF A SUCCESSFUL PARTNERSHIP BETWEEN RESEARCH AND PRACTICE

The REMULES system is manufactured by smartflower energy technology GmbH. Based in Austria, smartflower is a solar technology company that specializes in "all-in-one" solar solutions. REMULES was developed by smartflower in collaboration with leading partners from the Austrian and German aerospace industry. Its

development was supported by the Austrian Ministry of National Defence and Sport, the Red Cross, the Johanniter organization, and the Austrian Institute of Technology, as part of KIRAS, a national security programme, owned by the Austrian Ministry for Transport, Innovation and Technology and the Austrian Research Promotion Agency.





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