OMNILED

Solar Power

60W High Efficiency Solar Cells
23.5% Efficiency

Wind Power

Patented vertical technology
100W @ 11m/s

Built in Batteries

1000Wh Battery
Continuous power for multiple applications

Omniflow®

morelli S.p.A.
divisione green

OMNILED 07 SMART ENERGY PLATFORM

Models

OMNILED Smart Grid	Grid-tie unit with lighting but no generation or battery
OMNILED Smart Storage	Grid-tie unit with lighting and battery but no generation
OMNILED Autonomous	Wind & Solar generation with built in battery no lighting
OMNILED 360	Wind & Solar generation with built in battery with lighting

Wind Turbine

Generator	Permanent magnet generator – Axial flux type
Diffuser	Single-element flatback shroud
Rotor	6 blades, reinforced polyamide PAG Dimension: 0.70m diameter
Controller	12VDC Programable PWM
Noise	<28 db(A) at 25m @ 8m/s (very low)
Vibration	Anti-Vibration mounts
Power	100W rated power (@11 m/s, steady)
Regulation	Turbine stops rotating when system is fully charged, wind is too high or by remote manual shutdown

Solar

Solar Cell	n-type, mono crystalline Si, >22%Eff @STC
Controller	MPPT Solar Charge Controller
Power	60Wp, 0 degrees Optional: 70Wp mast integrated, 90 degrees

Battery

Battery Bank	500Wh (3x 12V 14Ah C10 Lead Crystal) Optional: 1000Wh (6x 12V 14Ah C10 Lead Crystal)
Charging	Initial Charging Current 4.2A14.7V/ (25°C)
Cycle Life	Typical 3,392 cycles (@40% DOD, 25°C), Max 6,000+ cycles

Smart Lighting

Luminaire	15 or 30 LED array Lens: Optical Grade PMMA 9300 lm (60W), 3655 lm (20W smart mode) – Grid Tie 5100 lm (30W), 1968 lm (10W smart mode) Efficiency 170 lm/W at 350mA (30W) Efficiency 196 lm/W at 125mA (10W) 4000K light temperature Light Pattern: Type IV(15LED) or Type V(30LED)
Control	OmniConnect IoT Platform Remote On/Off/Dim with Timer, Time control, Auto Night/Day Operation mode defined by 3 battery voltage levels Auto DIM via integrated infrared motion sensor 2 (Two) additional functionalities independently programmed and triggered by night/day, Time or Sensors events
Lighting Spacing	Recommended spacing (simulation recommended): 35-40m (12m mast) 25-30m (8m mast) 20-25m (6m mast)

Mast

Height	6, 8 or 12m *
Material	Galvanized Steel
Paint	C3 or C4 paint scheme (optional) Color: RAL 9010 *only use approved mast designs

Body Shell

Material	Composite Fiberglass/Resin Transparent to radio waves
Finishing	Marine grade gel coat
Color	RAL 9010
Space inside	Can fit 3 (Three) objects up to: 270 x 400 x 50mm Antennas or other electronics. See Optional accessories

OmniBrain

Energy	AI energy and functionalities management system Connection to: Wind, Solar, Battery, Sensors, LED drivers and extra functionalities.
Light functions	PWM for LED driver control 2 (Two) motion sensor control (infrared*; optical or radar) *1 (One) infrared motion sensor included
Accessory Ports	2 (Two), 12VDC/5A (Max) each
Communications	Communication link via integrated industrial GPRS modem with included Global SIM card
Built in memory	Stores 5 days hourly based vital data. Voltage (V) Current (A) Rotor Speed (RPM) Temperature (°C)

General

Dimensions	0.3m height, 1.2m diameter
Weight	35Kg (500Wh) 55Kg (1000Wh)
Nominal Voltage	12VDC
Ingress Protection	IP66
Impact Protection	IK08
Mounting	Mounts on 80mm tube 2 (Two) crossed stainless steel M10 bolts for fixing
Transportation	Package dimensions: 1.3m x 1.3m x 0.35m Foam protected Up to 5 units stackable 70 units per 40' container
Approvals and Standards	CE Marking Eye Safety IEC 62471 Standard for Safety UL 8750 CAN/CSA No. 250.13 IEC 61400-2 Small wind design 2005/88/EC – noise limits ISO 2394:1998(E) Reliability for structures EMC Directive 2004/108/EC Low Voltage Directive (LVD) 2016/95/EC
Grid-Tie (optional)	Input Voltage: 230VAC/50Hz or 110VAC/60Hz Isolation Class: Class II Ingress Protection: IP 67 Rated Power: 60W
Operating conditions	Temperature: -20 to 55 °C Max wind speed: 45m/s
Protection	20A 32V fuse

Optional Accessories	IoT integration inside Body Shell for multi-application:
	-USB Charger ports
	-Wifi Ethernet Router AP
	-Wifi Ethernet Fiberoptic Router AP
	-LoRA Gateway (under consultation)
	-Transmission - 4G Modem, ethernet, fiber, P2P, P2MP
	-Small Cell integration (under consultation)
	-Autonomous traffic lights (under consultation)
	-E-Bike Charging Station
	-Weather station
	-Environmental sensors (under consultation)
	-Surveillance cameras:
	  IP modular camera (single dual or quad lens) integrated
	  1080p WDR Forensic Capture
	  IP PTZ Camera (mast mounted)
	  IP Thermal Camera (mast mounted)
	Video analytics: Plate recognition, smart parking, perimeter security, face recognition, smoke and fire detection, audio processing, people counting, crowd monitoring, heat map…
	*use of some accessories may require extra solar PV or grid-backup
	** only use approved accessories

Monitoring Software	Remote web management cloud based Open API for Smart City platform integration Realtime reporting and control of device subsystems and accessories AI and machine learning capability User and Administrator Level control Configuration and reading of 92 telemetry parameters Alarms settings Maintenance triggers by proprietary algorithm Single unit and group configuration Multi-unit light synchronization by Time Control function Real time unit test (Shows actual program being used by blinking code on lighting system) Day, Week, Month, Year data reports
Warranty	2-year warranty, Extended EOL support option

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B. OMNIFLOW ® products are protected by Industrial Patent and Design Patent in various jurisdictions

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