



One IoT node. Two connectivity options

Libelium **One** is a low-power IoT node designed to connect sensors for water management, industrial digitalisation, agricultural monitoring and smart city applications.

Available with 4G or LoRaWAN connectivity, it allows each project to select the right balance of power consumption, coverage, data capacity and network ownership while maintaining sensor integration and data management through **iris360**.

GENERAL DESCRIPTION

Libelium **One** continuously monitors environmental and operational parameters through a wide range of integrated sensors. Automatic sensor detection and no-code configuration simplify deployment, while its compact and robust enclosure supports installation on walls or poles in demanding outdoor environments.

TYPICAL APPLICATIONS

- Water management and water quality
- Smart agriculture
- Industrial monitoring
- Smart cities and environmental monitoring



One platform. Multiple field configurations.

SENSOR INTEGRATION

- 30+ integrated sensors
- Four sensor sockets
- Automatic sensor detection
- Multiple parameters in one device
- Maximum configuration flexibility

EASY TO DEPLOY

- No-code configuration
- Plug-and-play installation
- Wall or pole mounting
- Remote configuration through iris360
- Local storage for more than 100,000 entries

FLEXIBLE CONNECTIVITY

- Available with 4G or LoRaWAN
- Global cellular connectivity with One 4G
- Private, public or existing networks with One LoRaWAN
- HTTPS and MQTT integration
- Data forwarding to leading cloud platforms

FROM FIELD DATA TO OPERATIONAL INSIGHT

Iris360 provides a unified environment to configure devices, monitor their status, visualise measurements, create dashboards and alarms, and forward data to external platforms.

- Remote device configuration
- Data visualisation and dashboards
- Alerts and operational monitoring
- Cloud connectors and external integrations

ARCHITECTURE DIAGRAM

Sensors

Sensors → Libelium One → 4G or LoRaWAN → iris360 / External cloud platforms

LoRaWAN

Libelium One → LoRaWAN gateway or network → ChirpStack → iris360

4G

Libelium One → Cellular network → iris360

DESIGNED FOR EFFICIENT FIELD OPERATION

- Low-power architecture
- Reusable sensors across different projects
- Repairable and refurbishable design
- Recyclable polycarbonate enclosure

Technical Features

MECHANICAL SPECIFICATIONS

Dimensions	135 x 135 x 60 mm
IP Grade	IP66/IP67/IP68
IK Grade	IK09
Operating temperature	-20°C to +50 °C
Material	Polycarbonate
Accessories	Solar panel, installation kit, power cables, extension cords
Weight	490 grs (without sensors)
Sensor sockets	4

GENERAL SPECIFICATIONS

Power sockets	1
Remote configuration	Through iris360 cloud platform
OTAP	Yes
Visual indication	LEDs for connectivity, status and charge monitoring
Sensors	Wide range of sensors
Loop time	Configurable from 5 minutes to 24 hours
Transmission time	Configurable from 5 minutes up to 10 days
iris360 cloud platform	Device management and configuration
One Smart App	Desktop application for configuration and firmware upgrade
Memory	+100.000 Entries
Other	Magnetic contactless reset. Maintenance / debug through power socket

WIRELESS COMMUNICATIONS

Wireless communications	Worldwide LTE Cat 4, UMTS/HSPA+ and GSM/GPRS/EDGE coverage
GNSS	Yes
Antenna	Internal
SIM card	4FF Global SIM. Provided by Libelium

LoRaWAN CONNECTIVITY

LoRaWAN regions supported	EU 863-870 MHz ISM Band (Europe) US 902-928 MHz ISM Band (United States) AU 915-928 MHz ISM Band (Australia) IN 865-867 MHz ISM Band (India) AS 923 MHz ISM Band (Asia and ASEAN) KR 920-923 MHz ISM Band (South Korea)
LoRaWAN standalone	Both sensor data and parameter reconfig via LoRaWAN
LoRaWAN + 4G backup	Sensor data via LoRaWAN Optional 4G radio for OTA and remote parameter reconfig

POWER SPECIFICATIONS

Power supply	5 to 24 VDC 800 mA
Internal battery	3.6V - 10.2 Ah Li-Ion. Rechargeable
Consumption	Ultra low power consumption Sleep mode: <10uA
Solar panel (two options)	6.6V - 5.5W Size: 185 x 185 mm. Installation accessory provided 18.3V - 30W Size: 388 x 674 mm. Installation accessory provided



Technical Features

SENSORS

Agriculture

Soil moisture 1.5 m, 4.5m or 8m (watermark) for One
Multilevel soil moisture and conductivity for One
Multilevel soil moisture for One
Fruit diameter for One
Trunk diameter for One
Leaf wetness (LWS) for One
WS-3000 (anemometer + wind vane + pluviometer) for One
Solar radiation (PAR) for One
Solar radiation (SP-510) for One
Weather station GMX-240 (W-PO)
Weather station GMX-550 (W-x-T-H-AP)
Weather station GMX-551 (W-x-T-H-AP-R)
Tipping Bucket Accessory for GMX Weather Stations
Soil water potentials TEROS 21
Non-contact surface temperature measurement SI-411
Soil oxygen level SO-411
Conductivity, water content and soil temperature TEROS 12

Agriculture sensor configurations

Leaf wetness for One
Particle Matter (PM1 / PM2.5 / PM10) for One
Professional 0.25mm pluviometer for One
Professional 0.25mm pluviometer for One
Particle Matter (PM1 / PM2.5 / PM10) for One
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Ultrasonic Wind speed and direction for One - Average
Ultrasonic Wind speed and direction for One - Instant
Temperature, humidity and pressure sensor for One
Ultrasonic weather station (W-T-H-AP-R) for One
Ultrasonic weather station (W-T-H-AP) for One
Ultrasonic weather station (W-T-H-AP-R-S) for One
Evaporation sensor for One
Solar radiation Class 1 sensor for One
Sunshine duration sensor for One
UV sensor for One
Illuminance sensor for One

Combine weather, soil and crop sensors in a single Libelium One device. Sensor availability and compatibility may vary depending on the selected connectivity and power configuration.

Gasses

CO2 sensor for One
H2S sensor for One
CO sensor for One
CH4 sensor for One
NO2 sensor for One
SO2 sensor for One
H2 sensor for One
NH3 sensor for One
PH3 sensor for One
O3 sensor for One
O2 sensor for One

Water

Turbidity and temperature NTU
pH, ORP and temperature PHEHT
Conductivity, salinity and temperature C4E
Inductive conductivity, salinity and temperature CTZN
Optical dissolved oxygen and temperature OPTOD
Titanium optical dissolved oxygen and temperature OPTOD
Suspended solids, turbidity, sludge blanket and temperature MES5
COD, BOD, TOC, SAC254 and temp StacSense, 2 mm path
COD, BOD, TOC, SAC254 and temp StacSense, 50 mm path
Radar level VEGAPULS C21
Virtual Turbidity and temperature NTU probe for One
Manta+ 35A probe for One
Manta+ 35B probe for One
Radar level sensor for One

Water quality sensor configurations

Monitor physical, chemical and biological water parameters with sensor configurations adapted to rivers, reservoirs, distribution networks and industrial installations.

Generic

Temperature and Humidity
Noise Level Sensor v2 for One
Liquid level probe for One - Stainless steel / Titanium
Temperature comfort sensor for One
Solar panel dust soiling for One

CERTIFICATIONS

CE + FCC + IC + UKCA + PTCRB

Technical Features

Agriculture

Recommended solution:



Weather station
GMX-240 (W-PO)
Ref. 9463-O



Conductivity, water content and
soil temperature TERSO 12
Ref. 9499-O



Temperature and Humidity
Ref. 40028-O

Other options:



Weather station
GMX-550 (W-x-T-H-AP)
Ref. 9482-O



Weather station
GMX-551 (W-x-T-H-AP-R)
Ref. 9483-O



Tipping Bucket Accessory
for GMX Weather Stations
Ref. 9600



WS-3000 (anemometer + wind
vane + pluviometer)
Ref. 9256-O



Solar radiation (SP-510) for One
Ref. 9470-O



Soil water potentials
TERSO 21
Ref. 9465-O



Soil oxygen
level SO-411
Ref. 9469-O



Volumetric water content and
soil temperature TERSO 11
Ref. 9512-O



Leaf wetness
Ref. 40030-O



Leaf wetness (LWS) for One
Ref. 9249-O



Non-contact surface
temperature
measurement SI-411
Ref. 9468-O



Vapor pressure, humidity,
temperature and atmospheric
pressure in soil and air VP-4
Ref. 9471-O



Solar radiation (PAR)
Ref. 40031-O



Multilevel soil moisture and
conductivity 80cm for One
Ref. 9518-O



Multilevel soil moisture
80cm for One
Ref. 9517-O



Soil moisture 8 m (watermark)
for One
Ref. 9323-O



Fruit diameter for One
Ref. 9254-O



Trunk diameter for One
Ref. 9252-O



Soil moisture 1.5 m (watermark)
for One
Ref. 9248-O



Soil moisture 4.5 m (watermark)
for One
Ref. 9324-O



Professional 0.25mm
pluviometer for One
Ref. 9561-O



Ultrasonic Wind speed and
direction (OC-M80) for One
Ref. 40047-O

Technical Features

Water

Recommended solution:



Optical dissolved oxygen
and temperature OPTOD
Ref. 9488-O



pH, ORP and
temperature PHEHT
Ref. 9485-O



Conductivity, salinity and
temperature C4E
Ref. 9486-O



Turbidity and
temperature NTU
Ref. 9353-O

Other options:



Inductive conductivity, salinity
and temperature CTZN
Ref. 9487-O



Suspended solids, turbidity, sludge
blanket and temperature MESS
Ref. 9490-O



Titanium optical dissolved oxygen
and temperature OPTOD
Ref. 9489-O



Eureka Manta Probe
+35A+35B
Ref. 9502-O



COD, BOD, TOC, SAC254
and temp StacSense, 2 mm path
Ref. 9500-O



COD, BOD, TOC, SAC254
and temp StacSense, 50 mm path
Ref. 9501-O



Radar level
VEGAPULS C21
Ref. 9514-O

Generic:



Liquid level probe in stainless steel
or titanium
Ref. 9545-O /Ref. 9546-O-15M



Noise Level Sensor
Ref. NLS-v2-O



Temperature and Humidity
Ref. 40028-O



Particle Matter
Ref. 9387-O



Libelium One

La falta de estandarización en el sector del IoT afecta a todas sus áreas: conectividad, interoperabilidad, usabilidad, alimentación, lenguaje y seguridad. Este es el problema más importante para que IoT se convierta en un estándar de mercado.

Libelium ha prestado atención a estos desafiantes retos para garantizar la seguridad agroalimentaria, proteger los ecosistemas y asegurar el uso sostenible del agua.

Libelium One es el resultado de un cuidadoso esfuerzo de Investigación y Desarrollo.

DESCRIPCIÓN GENERAL

Libelium **One** es un gateway IoT inalámbrico de súper bajo consumo. Diseñado para la monitorización continua de una gran variedad de parámetros que cubren las aplicaciones IoT más relevantes. Gracias a la detección automática de sensores, no se necesita programación para su despliegue. La configuración remota se puede realizar de forma inalámbrica a través de la plataforma Libelium Cloud. Instalación fácil y rápida en paredes o postes, en combinación con un panel solar para maximizar su eficiencia.

APLICACIONES HABITUALES

Listo para trabajar en cualquier tipo de entorno, en casos de uso y proyectos de agua y agricultura. Puede solicitar más información y una demostración en el correo electrónico que figura abajo.



Solución "All in One"

INTEROPERABLE

- Integridad de los datos: sensores no hackeables.
- Autodetección de sondas: conexión de cualquier sonda* a cualquier dispositivo One.
- Conectividad 4G configurable.
- Configurable LoRaWAN connectivity
- SIM global suministrada
- Máxima precisión.
- Compatible con 

FÁCIL DE USAR

- No se necesita programación = no hay código.
- Configuración del nodo basada en la nube.
- Dispositivo Plug and Play listo para ser instalado en el campo.
- Fácil instalación, sin necesidad de técnicos cualificados.
- Cualquier sensor integrado puede conectarse a cualquier enchufe para una máxima flexibilidad de configuración.
- Actualización remota del firmware del nodo (OTAP).

SOSTENIBLE

- Arquitectura diseñada para un consumo de energía ultra bajo.
- Dispositivo minimalista y compacto.
- Batería recargable mediante un panel solar.
- Cumple con las 4 R:
 - **Reducir**: consumo, huella de carbono y tamaño
 - **Reutilizar**: los mismos sensores para varios proyectos
 - **Reparar**
 - **Reciclar**: fabricación ecoeficiente de policarbonato



iris360 cloud platform

Una plataforma de gestión de dispositivos que permite la gestión completa de su proyecto IoT de inicio a fin. Almacenar, visualizar y analizar los datos recibidos. Enviar los datos a las principales plataformas cloud del mercado.



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libelium.com

Especificaciones técnicas

ESPECIFICACIONES MECÁNICAS

Dimensiones	135 x 135 x 60 mm
Protección IP	IP66/IP67/IP68
Protección IK	IK09
Temperatura de funcionamiento	-20°C to +50 °C
Material	Polycarbonate
Accesorios	Panel solar, kit de instalación, cables de alimentación, alargadores
Peso	490 grs (sin sensores)
Conectores de sensores	4

ESPECIFICACIONES GENERALES

Conector de alimentación	1
Configuración remota	A través de iris360 cloud platform
OTAP	Si
Indicadores visuales	LEDs para conectividad, estatus y carga
Sensores	Amplia variedad de sensores
Loop time	Configurable desde 5 minutos hasta 24 horas
Tiempo de transmisión	Configurable desde 5 minutos hasta 10 días
iris360 cloud platform	Gestión y configuración del dispositivo
One Smart App	Aplicación de escritorio para configuración y actualización de firmware
Memoria	+100.000 registros
Otros	Reset magnético sin contacto. Mantenimiento / debug vía toma de corriente

COMUNICACIÓN INALÁMBRICA

Comunicación inalámbrica	Cobertura mundial LTE Cat 4, UMTS/HSPA+ y GSM/GPRS/EDGE
GNSS	Si
Antena	Interna
Tarjeta SIM	4FF SIM Global. Proporcionada por Libelium

CONECTIVIDAD LoRaWAN

LoRaWAN regions supported	EU 863-870 MHz ISM Band (Europe)
	US 902-928 MHz ISM Band (United States)
	AU 915-928 MHz ISM Band (Australia)
	IN 865-867 MHz ISM Band (India)
	AS 923 MHz ISM Band (Asia and ASEAN)
LoRaWAN standalone	KR 920-923 MHz ISM Band (South Korea)
	Both sensor data and parameter reconfig via LoRaWAN
	Sensor data via LoRaWAN
LoRaWAN + 4G backup	Optional 4G radio for OTA and remote parameter reconfig

ESPECIFICACIONES ALIMENTACIÓN

Alimentación	5 to 24 VDC 800 mA
Batería interna	3.6V - 10.2 Ah Li-Ion. Recargable
Consumo	Consumo de energía ultra bajo. Sleep mode: <10uA
Panel solar (dos opciones)	6.6V - 5.5W Tamaño: 185 x 185 mm. Accesorio de instalación incluido
	18.3V - 30W Tamaño: 388 x 674 mm. Accesorio de instalación incluido

Especificaciones técnicas

SENSORES

Agricultura

- Soil moisture 1.5 m, 4.5m or 8m (watermark) for One
- Multilevel soil moisture and conductivity for One
- Multilevel soil moisture for One
- Fruit diameter for One
- Trunk diameter for One
- Leaf wetness (LWS) for One
- WS-3000 (anemometer + wind vane + pluviometer) for One
- Solar radiation (PAR) for One
- Solar radiation (SP-510) for One
- Weather station GMX-240 (W-PO)
- Weather station GMX-550 (W-x-T-H-AP)
- Weather station GMX-551 (W-x-T-H-AP-R)
- Tipping Bucket Accessory for GMX Weather Stations
- Soil water potentials TEROS 21
- Non-contact surface temperature measurement SI-411
- Soil oxygen level SO-411
- Conductivity, water content and soil temperature TEROS 12

- Leaf wetness for One
- Particle Matter (PM1 / PM2.5 / PM10) for One
- Professional 0.25mm pluviometer for One
- Professional 0.25mm pluviometer for One
- Particle Matter (PM1 / PM2.5 / PM10) for One
- Professional 0.25mm pluviometer for One
- Professional 0.25mm pluviometer for One
- Ultrasonic Wind speed and direction for One - Average
- Ultrasonic Wind speed and direction for One - Instant
- Temperature, humidity and pressure sensor for One
- Ultrasonic weather station (W-T-H-AP-R) for One
- Ultrasonic weather station (W-T-H-AP) for One
- Ultrasonic weather station (W-T-H-AP-R-S) for One
- Evaporation sensor for One
- Solar radiation Class 1 sensor for One
- Sunshine duration sensor for One
- UV sensor for One
- Illuminance sensor for One

Gases

- CO2 sensor for One
- H2S sensor for One
- CO sensor for One
- CH4 sensor for One
- NO2 sensor for One
- SO2 sensor for One
- H2 sensor for One
- NH3 sensor for One
- PH3 sensor for One
- O3 sensor for One
- O2 sensor for One

Agua

- Turbidity and temperature NTU
- pH, ORP and temperature PHEHT
- Conductivity, salinity and temperature C4E
- Inductive conductivity, salinity and temperature CTZN
- Optical dissolved oxygen and temperature OPTOD
- Titanium optical dissolved oxygen and temperature OPTOD
- Suspended solids, turbidity, sludge blanket and temperature MES5
- COD, BOD, TOC, SAC254 and temp StacSense, 2 mm path
- COD, BOD, TOC, SAC254 and temp StacSense, 50 mm path
- Radar level VEGAPULS C21
- Virtual Turbidity and temperature NTU probe for One
- Manta+ 35A probe for One
- Manta+ 35B probe for One
- Radar level sensor for One

Genéricos

- Temperatura y Humedad
- Sensor de nivel de ruido v2 para One
- Sensor de nivel de líquido para One - Acero inoxidable / Titanio
- Temperature comfort sensor for One
- Solar panel dust soiling for One

CERTIFICACIONES

CE + FCC + IC + UK CA + PTCRB

Especificaciones técnicas

Agricultura

Solución recomendada:



Estación meteorológica
GMX-240 (W-PO)
Ref. 9463-O



Conductivity, water content and
soil temperature TERSO 12
Ref. 9499-O



Temperature and Humidity
Ref. 40028-O

Otras opciones:



Weather station
GMX-550 (W-x-T-H-AP)
Ref. 9482-O



Weather station
GMX-551 (W-x-T-H-AP-R)
Ref. 9483-O



Tipping Bucket Accessory
for GMX Weather Stations
Ref. 9600



WS-3000 (anemometer + wind
vane + pluviometer)
Ref. 9256-O



Solar radiation (SP-510) for One
Ref. 9470-O



Soil water potentials
TERSO 21
Ref. 9465-O



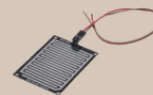
Soil oxygen
level SO-411
Ref. 9469-O



Volumetric water content and
soil temperature TERSO 11
Ref. 9512-O



Leaf wetness
Ref. 40030-O



Leaf wetness (LWS) for One
Ref. 9249-O



Non-contact surface
temperature
measurement SI-411
Ref. 9468-O



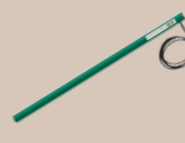
Vapor pressure, humidity,
temperature and atmospheric
pressure in soil and air VP-4
Ref. 9471-O



Solar radiation (PAR)
Ref. 40031-O



Multilevel soil moisture and
conductivity 80cm for One
Ref. 9518-O



Multilevel soil moisture
80cm for One
Ref. 9517-O



Soil moisture 8 m (watermark)
for One
Ref. 9323-O



Fruit diameter for One
Ref. 9254-O



Trunk diameter for One
Ref. 9252-O



Soil moisture 1.5 m (watermark)
for One
Ref. 9248-O



Soil moisture 4.5 m (watermark)
for One
Ref. 9324-O



Professional 0.25mm
pluviometer for One
Ref. 9561-O



Ultrasonic Wind speed and
direction (OC-M80) for One
Ref. 40047-O

Especificaciones técnicas

Agua

Solución recomendada:



Optical dissolved oxygen
and temperature OPTOD
Ref. 9488-O



pH, ORP and
temperature PHEHT
Ref. 9485-O



Conductivity, salinity and
temperature C4E
Ref. 9486-O



Turbidity and
temperature NTU
Ref. 9353-O

Otras opciones:



Inductive conductivity, salinity
and temperature CTZN
Ref. 9487-O



Suspended solids, turbidity, sludge
blanket and temperature MES5
Ref. 9490-O



Titanium optical dissolved oxygen
and temperature OPTOD
Ref. 9489-O



Eureka Manta Probe
+35A+35B
Ref. 9502-O



COD, BOD, TOC, SAC254
and temp StacSense, 2 mm path
Ref. 9500-O



COD, BOD, TOC, SAC254
and temp StacSense, 50 mm path
Ref. 9501-O



Radar level
VEGAPULS C21
Ref. 9514-O

Genéricos



Liquid level probe in stainless steel
or titanium
Ref. 9545-O /Ref. 9546-O-15M



Noise Level Sensor
Ref. NLS-v2-O



Temperature and Humidity
Ref. 40028-O



Particle Matter
Ref. 9387-O



Libelium One

Lack of standardization in the IoT Business affects to all their areas: connectivity, interoperability, usability, power, language and security. This is the most important problem for IoT to become a market standard.

Libelium has paid attention to these defying challenges to assure agrifood security, protect ecosystems and ensure sustainable water use.

One is the result of a careful Research & Development continuous effort.

GENERAL DESCRIPTION

Libelium **One** is an ultra low power wireless IoT gateway. Designed for continuous monitoring of a huge range of parameters covering the most relevant IoT applications. Thanks to the automatic sensor detection, no programming is needed for deployment. Remote configuration can be done wireless through Libelium platform. Easy and quick installation on walls or poles in combination with a solar panel to maximize its efficiency.

TYPICAL APPLICATIONS

Ready to work in any kind of environment for water & agriculture use cases & projects. You can request further info and a demonstration at the e-mail below



All in One solution

INTEROPERABLE

- Data integrity: non-hackable sensors
- Probe autodetection: connecting any probe to any One device
- Configurable 4G connectivity
- Configurable LoRaWAN connectivity
- Global SIM provided
- Maximum accuracy
-  **FIWARE** ready

EASY TO USE

- No programming is needed = no code
- Cloud-based node configuration
- Plug and Play device ready to be installed in the field
- Easy installation, no need for qualified technicians
- Any integrated sensor can be connected to any socket for maximum configuration flexibility
- Node firmware remote update (OTAP)

SUSTAINABLE

- Architecture designed for ultra low power consumption
- Minimalist and compact device
- Rechargeable battery using a solar panel
- 4 Rs compliant:
 - **Reduce**: consumption, carbon footprint and size
 - **Reuse**: same sensors for multiple projects
 - **Repair(able)** and refurbish (able)
 - **Recycle**: polycarbonate eco-efficient manufacturing



iris360 cloud platform

A device management platform that allows you the complete management of your IoT Project end to end. Store, visualize and analyze the data received. Send the data to the main cloud platforms on the market.

Technical Features

SENSORS

Agriculture

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- Liquid level probe for One - Stainless steel / Titanium
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CERTIFICATIONS

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The game-changing IoT solution

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One is the result of a careful Research & Development continuous effort.

GENERAL DESCRIPTION

Libelium **One** is an ultra low power wireless IoT gateway. Designed for continuous monitoring of a huge range of parameters covering the most relevant IoT applications. Thanks to the automatic sensor detection, no programming is needed for deployment. Remote configuration can be done wireless through Libelium platform. Easy and quick installation on walls or poles in combination with a solar panel to maximize its efficiency.

TYPICAL APPLICATIONS

Ready to work in any kind of environment for water & agriculture use cases & projects. You can request further info and a demonstration at the e-mail below



All in One solution

INTEROPERABLE

- Data integrity: non-hackable sensors
- Probe autodetection: connecting any probe to any One device
- Configurable 4G wireless connectivity
- Global SIM provided*
- Maximum accuracy
- Now it is  **FIWARE** ready

EASY TO USE

- No programming is needed = no code
- Cloud-based node configuration
- Plug and Play device ready to be installed in the field
- Easy installation, no need for qualified technicians
- Any integrated sensor* can be connected to any socket for maximum configuration flexibility
- Node firmware remote update (OTAP)

SUSTAINABLE

- Architecture designed for ultra low power consumption
- Minimalist and compact device
- Rechargeable battery using a solar panel
- 4 Rs compliant:
- **Reduce**: consumption, carbon footprint and size
- **Reuse**: same sensors for multiple projects
- **Repair(able)** and refurbish (able)
- **Recycle**: polycarbonate eco-efficient manufacturing



iris360 cloud platform

A device management platform that allows you the complete management of your IoT Project end to end. Store, visualize and analyze the data received. Send the data to the main cloud platforms on the market.



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Technical Features

MECHANICAL SPECIFICATIONS

Dimensions	135 x 135 x 60 mm
IP Grade	IP66/IP67/IP68
IK Grade	IK9
Operating temperature	-20°C to +50 °C*
Material	Polycarbonate
Accessories	Solar panel, installation kit, power cables, extension cords
Weight	490 grs (without sensors)
Sensor sockets	4

GENERAL SPECIFICATIONS

Power sockets	1
Remote configuration	Through iris360 cloud platform
OTAP	Yes
Visual indication	LEDs for connectivity, status and charge monitoring
Sensors	Wide range of sensors
Loop time	Configurable from 5 minutes to 24 hours
Transmission time	Configurable from 5 minutes up to 10 days
iris360 cloud platform	Device management and configuration
One Smart App	Desktop application for configuration and firmware upgrade
Memory	+100.000 Entries
Other	Magnetic contactless reset. Maintenance / debug through power socket

CONNECTIVITY

Wireless communications	Worldwide LTE Cat 4, UMTS/HSPA+ and GSM/GPRS/EDGE coverage
GNSS	Yes
Antenna	Internal
SIM card	4FF Global SIM. Provided by Libelium

POWER SPECIFICATIONS

Power supply	5 to 24 VDC 800 mA
Internal battery	3.6V - 10.2 Ah Li-Ion. Rechargeable
Consumption	Ultra low power consumption Sleep mode: <10uA
Solar panel (two options)	6.6V - 5.5W Size: 185 x 185 mm. Installation accessory provided 18.3V - 30W Size: 388 x 674 mm. Installation accessory provided

Agriculture

Soil moisture 1.5 m, 4.5m or 8m (watermark) for One
Multilevel soil moisture and conductivity for One
Multilevel soil moisture for One
Fruit diameter for One
Trunk diameter for One
Leaf wetness (LWS) for One
WS-3000 (anemometer + wind vane + pluviometer) for One
Solar radiation (PAR) for One
Solar radiation (SP-510) for One

Weather station GMX-240 (W-PO)
Weather station GMX-550 (W-x-T-H-AP)
Weather station GMX-551 (W-x-T-H-AP-R)
Tipping Bucket Accessory for GMX Weather Stations
Soil water potentials TERS 21
Non-contact surface temperature measurement SI-411
Soil oxygen level SO-411
Vapor pressure, humidity, temperature, and atmospheric pressure in soil and air VP-4
Conductivity, water content and soil temperature TERS 12
Volumetric water content and soil temperature TERS 11
Leaf wetness for One
Particle Matter (PM1 / PM2.5 / PM10) for One
Professional 0.25mm pluviometer for One

SENSORS

Water

Turbidity and temperature NTU
pH, ORP and temperature PHEHT
Conductivity, salinity and temperature C4E
Inductive conductivity, salinity and temperature CTZN
Optical dissolved oxygen and temperature OPTOD
Titanium optical dissolved oxygen and temperature OPTOD
Suspended solids, turbidity, sludge blanket and temperature MES5
* COD, BOD, TOC, SAC254 and temp StacSense, 2 mm path
* COD, BOD, TOC, SAC254 and temp StacSense, 50 mm path
Radar level VEGAPULS C21
Virtual Turbidity and temperature NTU probe for One
Manta+ 35A probe for One
Manta+ 35B probe for One

Generic

Temperature and Humidity
Noise Level Sensor v2 for One
Liquid level probe for One - Stainless steel / Titanium

* Chemical Oxygen Demand (COD), Biological Oxygen Demand (BOD), Total Organic Carbon (TOC) and Spectral Absorption Coefficient at 254 nm (SAC254).

CERTIFICATIONS

CE + FCC + IC + UKCA + PTCRB

Technical Features

MECHANICAL SPECIFICATIONS

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WIRELESS COMMUNICATIONS

Wireless communications	Worldwide LTE Cat 4, UMTS/HSPA+ and GSM/GPRS/EDGE coverage
GNSS	Yes
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SIM card	4FF Global SIM. Provided by Libelium

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SENSORS

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Weather station GMX-550 (W-x-T-H-AP)
Weather station GMX-551 (W-x-T-H-AP-R)
Tipping Bucket Accessory for GMX Weather Stations
Soil water potentials TERSO 21
Non-contact surface temperature measurement SI-411
Soil oxygen level SO-411
Conductivity, water content and soil temperature TERSO 12

Gases

CO2 sensor for One
H2S sensor for One
CO sensor for One
CH4 sensor for One
NO2 sensor for One

Water

Turbidity and temperature NTU
pH, ORP and temperature PHEHT
Conductivity, salinity and temperature C4E
Inductive conductivity, salinity and temperature CTZN
Optical dissolved oxygen and temperature OPTOD
Titanium optical dissolved oxygen and temperature OPTOD

Generic

Temperature and Humidity
Noise Level Sensor v2 for One

Leaf wetness for One
Particle Matter (PM1 / PM2.5 / PM10) for One
Professional 0.25mm pluviometer for One
Professional 0.25mm pluviometer for One
Particle Matter (PM1 / PM2.5 / PM10) for One
Professional 0.25mm pluviometer for One
Professional 0.25mm pluviometer for One
Ultrasonic Wind speed and direction for One - Average
Ultrasonic Wind speed and direction for One - Instant
Temperature, humidity and pressure sensor for One
Ultrasonic weather station (W-T-H-AP-R) for One
Ultrasonic weather station (W-T-H-AP) for One
Ultrasonic weather station (W-T-H-AP-R-S) for One
Evaporation sensor for One
Solar radiation Class 1 sensor for One
Sunshine duration sensor for One
UV sensor for One
Illuminance sensor for One

SO2 sensor for One
H2 sensor for One
NH3 sensor for One
PH3 sensor for One
O3 sensor for One
O2 sensor for One

Suspended solids, turbidity, sludge blanket and temperature MES5
COD, BOD, TOC, SAC254 and temp StacSense, 2 mm path
COD, BOD, TOC, SAC254 and temp StacSense, 50 mm path
Radar level VEGAPULS C21
Virtual Turbidity and temperature NTU probe for One
Manta+ 35A probe for One
Manta+ 35B probe for One
Radar level sensor for One

Liquid level probe for One - Stainless steel / Titanium
Temperature comfort sensor for One
Solar panel dust soiling for One

CERTIFICATIONS





Libelium One

La falta de estandarización en el sector del IoT afecta a todas sus áreas: conectividad, interoperabilidad, usabilidad, alimentación, lenguaje y seguridad. Este es el problema más importante para que IoT se convierta en un estándar de mercado.

Libelium ha prestado atención a estos desafiantes retos para garantizar la seguridad agroalimentaria, proteger los ecosistemas y asegurar el uso sostenible del agua.

Libelium One es el resultado de un cuidadoso esfuerzo de Investigación y Desarrollo.

DESCRIPCIÓN GENERAL

Libelium **One** es un gateway IoT inalámbrico de súper bajo consumo. Diseñado para la monitorización continua de una gran variedad de parámetros que cubren las aplicaciones IoT más relevantes. Gracias a la detección automática de sensores, no se necesita programación para su despliegue. La configuración remota se puede realizar de forma inalámbrica a través de la plataforma Libelium Cloud. Instalación fácil y rápida en paredes o postes, en combinación con un panel solar para maximizar su eficiencia.

APLICACIONES HABITUALES

Listo para trabajar en cualquier tipo de entorno, en casos de uso y proyectos de agua y agricultura. Puede solicitar más información y una demostración en el correo electrónico que figura abajo.



Solución "All in One"

INTEROPERABLE

- Integridad de los datos: sensores no hackeables.
- Autodetección de sondas: conexión de cualquier sonda* a cualquier dispositivo One.
- Conectividad inalámbrica 4G configurable.
- SIM global suministrada*
- Máxima precisión.
- Ahora es compatible con



FÁCIL DE USAR

- No se necesita programación = no hay código.
- Configuración del nodo basada en la nube.
- Dispositivo Plug and Play listo para ser instalado en el campo.
- Fácil instalación, sin necesidad de técnicos cualificados.
- Cualquier sensor integrado* puede conectarse a cualquier enchufe para una máxima flexibilidad de configuración.
- Actualización remota del firmware del nodo (OTAP).

SOSTENIBLE

- Arquitectura diseñada para un consumo de energía ultra bajo.
- Dispositivo minimalista y compacto.
- Batería recargable mediante un panel solar.
- Cumple con las 4 R:
- **Reducir**: consumo, huella de carbono y tamaño
- **Reutilizar**: los mismos sensores para varios proyectos
- **Reparar**
- **Reciclar**: fabricación ecoeficiente de policarbonato



iris360 cloud platform

Una plataforma de gestión de dispositivos que permite la gestión completa de su proyecto IoT de inicio a fin. Almacenar, visualizar y analizar los datos recibidos. Enviar los datos a las principales plataformas cloud del mercado.



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Especificaciones técnicas

ESPECIFICACIONES MECÁNICAS

Dimensiones	135 x 135 x 60 mm
Protección IP	IP66/IP67/IP68
Protección IK	IK9
Temperatura de funcionamiento	-20°C hasta +50 °C*
Material	Polycarbonate
Accesorios	Panel solar, kit de instalación, cables de alimentación, alargadores
Peso	490 grs (sin sensores)
Conectores de sensores	4

ESPECIFICACIONES GENERALES

Conector de alimentación	1
Configuración remota	A través de iris360 cloud platform
OTAP	Si
Indicadores visuales	LEDs para conectividad, estatus y carga
Sensores	Amplia variedad de sensores
Loop time	Configurable desde 5 minutos hasta 24 horas
Tiempo de transmisión	Configurable desde 5 minutos hasta 10 días
iris360 cloud platform	Gestión y configuración del dispositivo
One Smart App	Aplicación de escritorio para configuración y actualización de firmware
Memoria	+100.000 registros
Otros	Reset magnético sin contacto. Mantenimiento / debug vía toma de corriente

CONECTIVIDAD

Comunicación inalámbrica	Cobertura mundial LTE Cat 4, UMTS/HSPA+ y GSM/GPRS/EDGE
GNSS	Si
Antena	Interna
Tarjeta SIM	4FF SIM Global. Proporcionada por Libelium

ESPECIFICACIONES ALIMENTACIÓN

Alimentación	5 a 24 VDC 800 mA
Batería interna	3.6V - 10.2 Ah Li-Ion. Recargable
Consumo	Consumo de energía ultra bajo. Sleep mode: <10uA
Panel solar (dos opciones)	6.6V - 5.5W Tamaño: 185 x 185 mm. Accesorio de instalación incluido 18.3V - 30W Tamaño: 388 x 674 mm. Accesorio de instalación incluido

SENSORES

Agricultura

Soil moisture 1.5 m, 4.5m or 8m (watermark) for One
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Professional 0.25mm pluviometer for One

Agua

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Conductivity, salinity and temperature C4E
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Radar level VEGAPULS C21
Virtual Turbidity and temperature NTU probe for One
Manta+ 35A probe for One
Manta+ 35B probe for One

Genéricos

Temperatura y Humedad
Sensor de nivel de ruido v2 para One
Sensor de nivel de líquido para One - Acero inoxidable / Titanio

* Demanda Química de Oxígeno (DQO), Demanda Biológica de Oxígeno (DBO), Carbono Orgánico Total (COT) y Coeficiente de Absorción Espectral a 254 nm (SAC254).

CERTIFICACIONES

CE + FCC + IC + UK CA + PTCRB