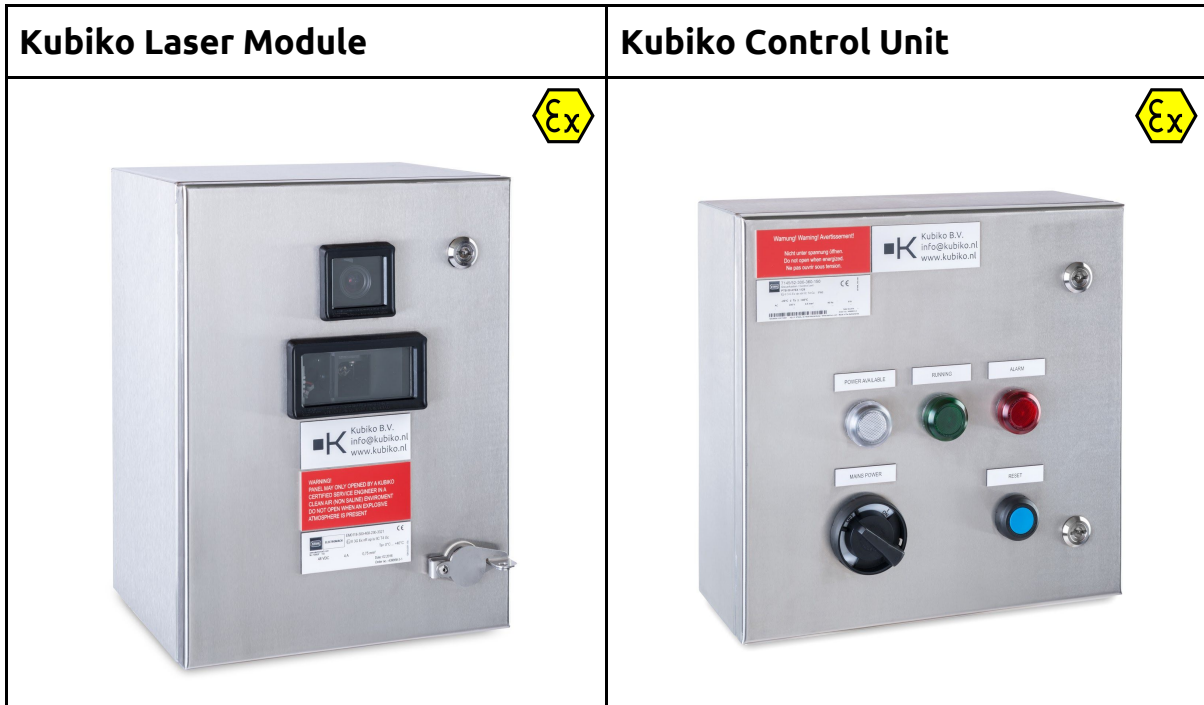


Kubiko System | Specifications & Installation



This document describes the Kubiko bird deterrent system. The system consists of two separate Ex nR | 316L units: a laser module and a control unit. The laser module contains a laser, camera and computers and is mounted facing the helideck area. The laser module is connected to the control unit, containing the power, reset function and light indicators.



Kubiko System View

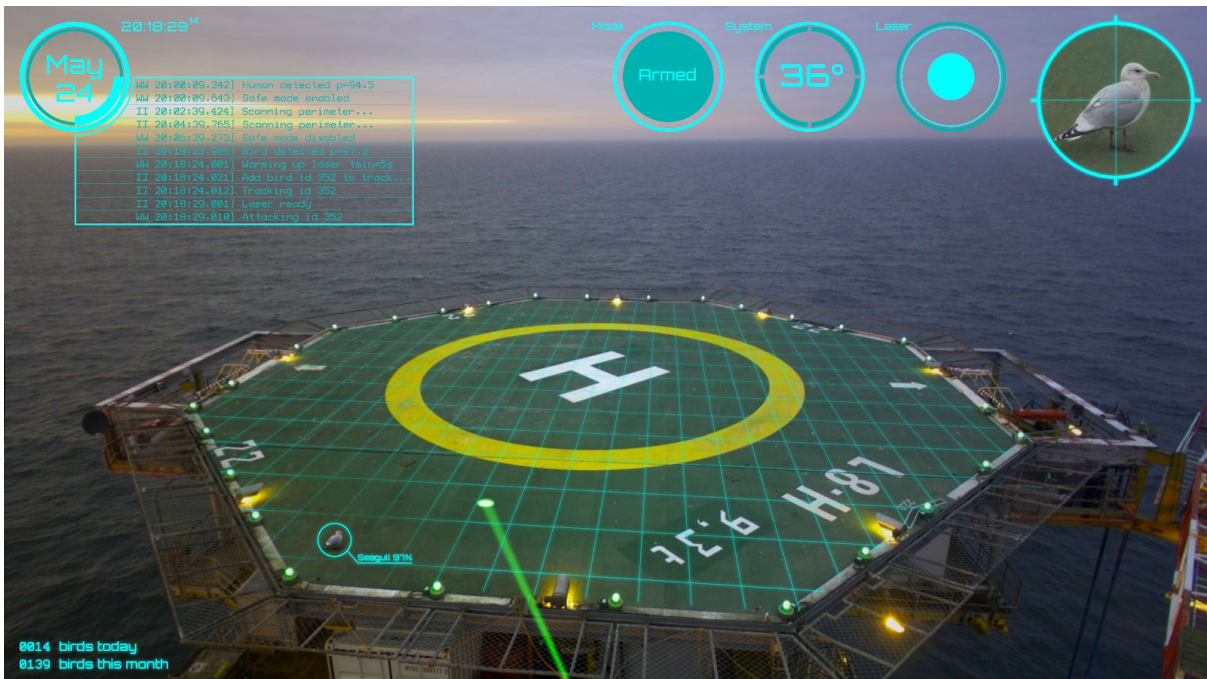
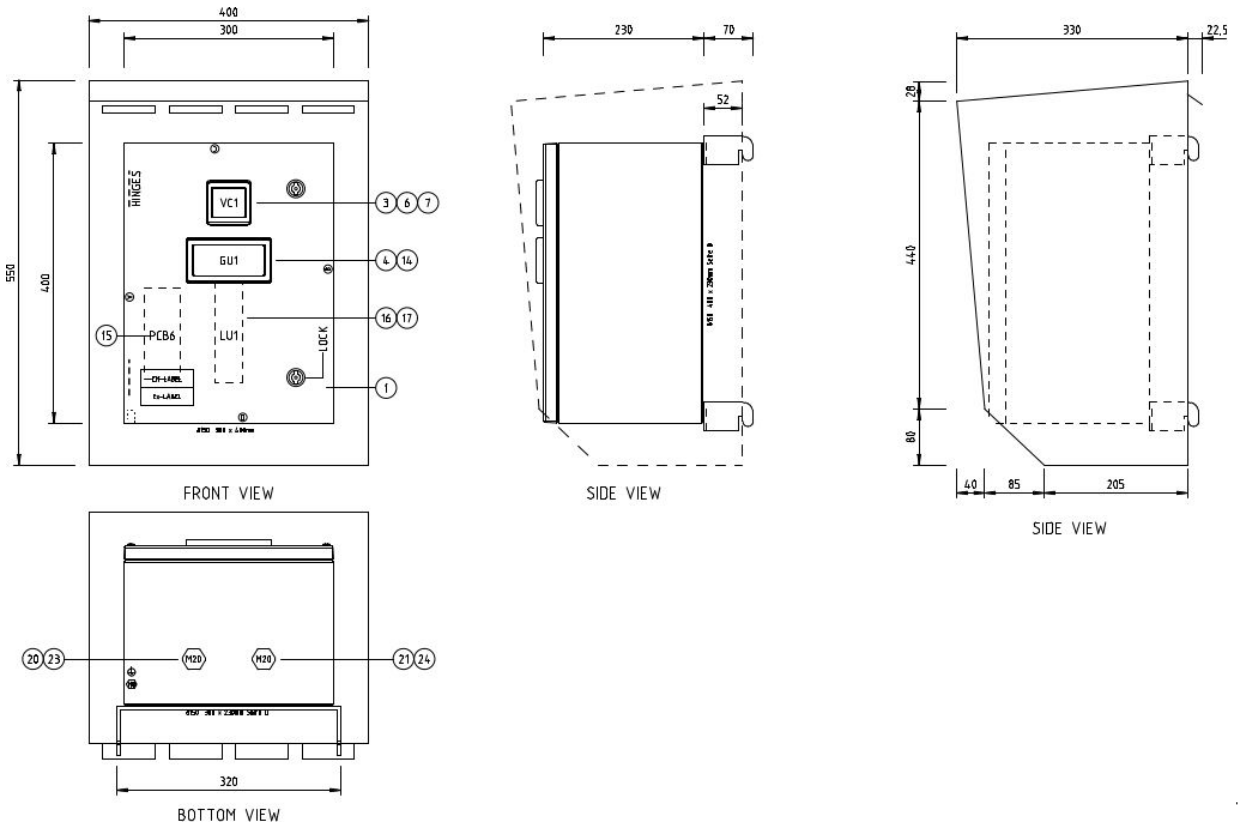


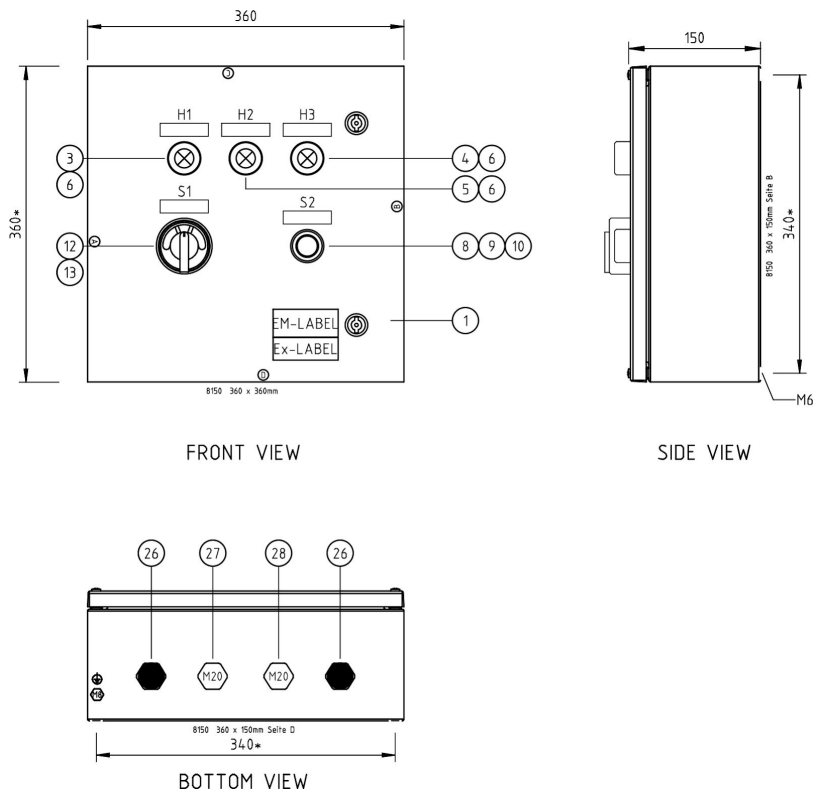
Image from a Kubiko system in the Dutch North Sea | in cooperation with development partner Wintershall



Laser Module dimensions



Control Unit dimensions





Kubiko System Technical Specifications

Power

| | |
|---------------|------------------|
| Input | 100 V - 230 V AC |
| Average usage | 20 W |
| Peak usage | 100 W |

Dimensions

| | |
|-----------------------------|-------------------------------|
| Laser Module (LM) | 300 x 400 x 230 mm / 12 kg |
| Control Unit (CU) | 360 x 360 x 150 mm / 15 kg |
| Sunhood | 400 x 550 x 330 mm / 12 kg |
| Mounting material (LM + CU) | 2 kg + 6 kg |
| ATEX | Ex nR ATEX Zone 2 certified |

Operation

| | |
|----------------------|----------------------------------|
| Effective range | 5 - 50 meters |
| Ambient illumination | 10 - 50.000 LUX |
| Temperature range | between 0 and 40 degrees Celsius |
| Night vision | Optional, using infrared light |

Laser

| | |
|---------------|--|
| Class | 3B |
| Color | Green |
| Wave length | 532 nm |
| Power | 250 mW |
| Beam diameter | 4 mm at aperture, 10 - 200 mm at surface |

Software

| | |
|---------------------------|---|
| Installation | Plug and Play |
| Calibration | Remotely by Kubiko engineer |
| Main detection algorithms | Artificial Intelligence / Deep Learning |
| Detected objects | Birds, humans and helicopters |

Kubiko System | Installation Procedure

Installation offshore is executed by a trained and qualified engineer provided by the client. Initial installation is supervised by a trained and qualified Kubiko engineer. Additional on-site preparations, tests and adjustments will be performed by the Kubiko engineer to ensure the systems smooth operation.

Laser module installation

- The laser module remains locked while offshore, because of the delicate electronics
- Two cables from the laser module are connected inside the control unit
- The module is mounted at an angle of 10 to 20 degrees
- The unit can be mounted using 4 M6 screws (see fig. 1)
- Kubiko can provide mounting brackets (see fig. 2)
- An optional sun hood is available at request (see fig. 3)

Control unit installation

- The control unit operates on 230V AC and a network connection
- Both can be connected to terminals inside the unit
- The unit can be mounted using 4 M6 screws (see fig. 1)
- Kubiko can provide mounting brackets

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