# DualCurtain Outdoor

## Wireless outdoor bidirectional curtain motion detector

| | | | |
|---|---|---|---|
| Two detectors in one | Unique optical systems | Masking sensors | Flexible settings of detection zones |

## Engineering accuracy

On the sides of the detector there are two optical systems with narrow viewing sectors, each equipped with two PIR sensors. Thanks to temperature compensation, detection is always accurate.

Sensor signals are analyzed by our new ELSA digital algorithm.

Only if two sensors of the same optical system simultaneously capture human motion, the detector activates an alarm.

| | |
|---|---|
| Instant response to intruder | Pet immunity |

### How the ELSA digital algorithm works

Signal analysis is critical for the motion detector, which receives a minimum of information about the object in the protected area due to the 4,5° horizontal field of view. Precise analysis ensures quick response to humans, eliminating reaction on animals and natural interferences.

DualCurtain Outdoor uses ELSA, a three-step software algorithm that analyzes the signals from two narrowly focused PIR sensors of the optical system.

#### Form analysis

The PIR sensors' signal waveforms must correspond to the way an intruder crosses the protected area. In any direction: perpendicular or along the direction of the detection area. At the same stage, a correction for the signal intensity is made, in order to take into account the distance from the sensors and the dimensions of the object.

#### Patterns comparison

The signal amplitudes are verified against the pattern database. To create it, we analyzed thousands of curtain detector triggerings on people, animals, lights, and other natural interferences in various weather conditions. The signals must match the patterns that are typical for humans.

### Time verification

When signals from both PIR sensors match the conditions — this is motion, and it is typical for a human — ELSA compares the time intervals when the signals received, determining whether the upper and lower sensors detected motion synchronously.

To reach a verdict whether it's a threat or false alarm, ELSA  needs less than a second.

## Efficiency in the near area

DualCurtain Outdoor features a technology to expand the protected area, which is unique among outdoor curtain motion detectors. When Near Area Detection is enabled, the detector's upper PIR sensor receives an additional narrow viewing sector directed at the angle of 40 degrees down against the main sector. The feature allows both sensors to detect movement when a human crosses the protected perimeter closely to the detector's body, addressing the problem of the blind spot, which is a typical problem of such detectors.

Near Area Detection is designed to protect windows and other passages that animals have no access to. The proximity of the detection zones' vectors significantly reduces the efficiency of pet immunity.

## One enclosure. Two independent detectors.

The detection range of the two optical systems is adjusted independently. It allows you to precisely set the perimeter guarded by DualCurtain Outdoor and avoid false alarms caused by a bush swaying in the wind or people passing on a public sidewalk. So that the detector's field of view is not blocked by a column or downpipe on a facade, the optical systems can be shifted vertically. In the app, you can adjust the sensitivity or deactivate one of the optical systems.

## Resistant to attacks

DualCurtain Outdoor can not be unnoticeably blinded or disabled even if Ajax is disarmed. Detector's optical systems are reinforced with advanced masking sensors that respond to obstacles, covering and painting the lenses. The tamper will not allow to unnoticeably remove the device from the mount. And even if the detector is instantly destroyed, it will take the hub less than a minute to detect the loss of communication and inform a central monitoring station and users about the problem.

## Guaranteed alarm delivery

We have developed the Jeweller radio protocol to ensure the uninterrupted operation of all devices within an Ajax security system. The radio protocol uses time frames to synchronize communication of connected devices, authentication to eliminate forgery, and encryption to protect against hacking.

- Two-way communication at a distance of up to 1,700 meters
- 5 ReX radio signal range extenders in security system
- Adjustable ping interval from 12 seconds

## Outstanding autonomy

Due to its low energy consumption, DualCurtain Outdoor operates for years from pre-installed batteries. A monitoring station and users will be warned in advance about the need for the device maintenance.

- Up to 4 years of battery life
- Charge level in the app
- Low battery notification

## Installation without brain teasers

The process of connecting and configuring DualCurtain Outdoor saves the installation engineer's time in the best possible way. To add a detector to the system, all you have to do is scan the QR code with the Ajax app, assign a name and a room to it. Configure the device in the app in real time while testing detection zones and communication. If necessary, the detector can be disabled or its system parameters can be reconfigured remotely, without site visits.

## Tech specs

| | |
|---|---|
| Classification | Electro-optical radio channel security detector |
| Type of detector | Wireless |
| Installation method | Indoors/outdoors |
| Compatibility | Hub Plus, Hub 2, Hub 2 Plus, ReX with OS Malevich 2.11 and higher |

| | |
|---|---|
| Sensing element | 4 x PIR sensor |
| Motion detection distance | From 4 to 15 m (depending on settings) for each optical system |
| Protection against false alarms | Available, alarm in case of detection of two sensors and ELSA software algorithm |
| Alarm signal delivery time | 0.15 s |
| Detection angle | Horizontal — 6°<br>Vertical — depending on settings |
| Time for motion detection | From 0.3 to 2 m/s |
| Sensitivity | Adjustable, 3 levels |
| Power supply | 2 x CR123A batteries, 3 V |
| Battery life | Up to 4 years<br>Learn more |
| Temperature sensor | Available |
| Jeweller radio technology | Communication range with the central unit — up to 1,700 m line-of-sight<br>Two-way communication between devices<br>Operating frequencies — 868.0-868.6 MHz<br>Self-adjusting RF output power — up to 20 mW<br>Block encryption based on AES algorithm<br>Detector polling period — 12–300 s<br>Frequency hopping<br><br>Learn more about Jeweller |
| Operating temperature range | From −25°C to +60°C |
| Permissible humidity | Up to 95% |
| Protection class | IP54 |
| Anti-sabotage | Protection against forgery<br>Jamming detection<br>Tamper-resistant |
| Dimensions | 174 x 123 x 88 mm |
| Weight | 615 g |

| | |
|---|---|
| Warranty | 24 months from the date of sale<br><br>Learn more |
| Complete set | DualCurtain Outdoor motion detector<br>SmartBracket mounting panel<br>2 x CR123A batteries (pre-installed)<br>Installation kit<br>User's guide |