

DENSO
DENSO WAVE

SECURITY SENSOR SYSTEM
ZONE-D
LASER SENSOR



Intelligent
Area Protection

Detects accurately the position of moving objects: **the Zone-D.**

Intelligent perimeter protection: The Zone-D Security Laser Sensor detects accurately the position of moving objects, making it possible to protect all types of perimeters reliably. Unlike line and curtain type sensors that detect from point to point, the Zone-D sensor detects large areas. This makes it difficult for intruders to avoid being detected.

If connected to security equipment like PTZ cameras, lights or sirens, the Zone-D is able to send signals and activate these devices, if an object is detected. PTZ cameras can be controlled by the Zone-D to track an object automatically.

The Zone-D security area sensor cannot only be used for protection against intruders, though. It is also ideal for monitoring critical infrastructure, like railway crossings, train platforms and airport perimeters as well as water, electricity and gas installations as numerous successfully implemented projects in Japan prove.



COVERS WIDE AREAS:

Detects complete surfaces of around 60 x 30 m, making it difficult for intruders to avoid being detected. Areas can be clustered in individually configurable zones.



RELIABLE UNDER ALL LIGHTING CONDITIONS:

Is capable of detecting objects in the dark and at illuminances of up to 100.000 lux. Even rain and fog are no issue.



INTELLIGENT NETWORK:

Can be connected to various security equipment like cameras, lights or sirens and activate them in case of detections.



FILTERS BETWEEN DIFFERENT OBJECTS:

The Zone-D laser sensor is capable of differentiating between people, cars and other objects, thus reducing false alarms.



REAL-TIME VERIFICATION:

Remotely verify live videos of intruders with connected portable terminals like PCs and smartphones.



Watches even outside business hours. The Monitoring System.

Stay up to date about what happens at your company's premises, even at night or during weekends. With the Monitoring System notifications are immediately sent by e mail to your computer or smartphone when intruders are detected within the monitoring area.



SECURITY AREA 1

**Lock camera on intruder.
Track intruder.**

When an intruder is detected within the monitoring area, the camera automatically zooms in to track and record the intruder's actions.



**Immediate e mail
to user's device.**



SECURITY AREA 2

**Damage Prevention.
Warning and Intimidation.**

In critical areas, intimidation systems such as lights, flashlights or sirens will be activated.

Vocal warnings can be made remotely, lighting can be activated and electric locks can be engaged to prevent any damage inflicted to your property all while viewing the intruder's actions in real time.



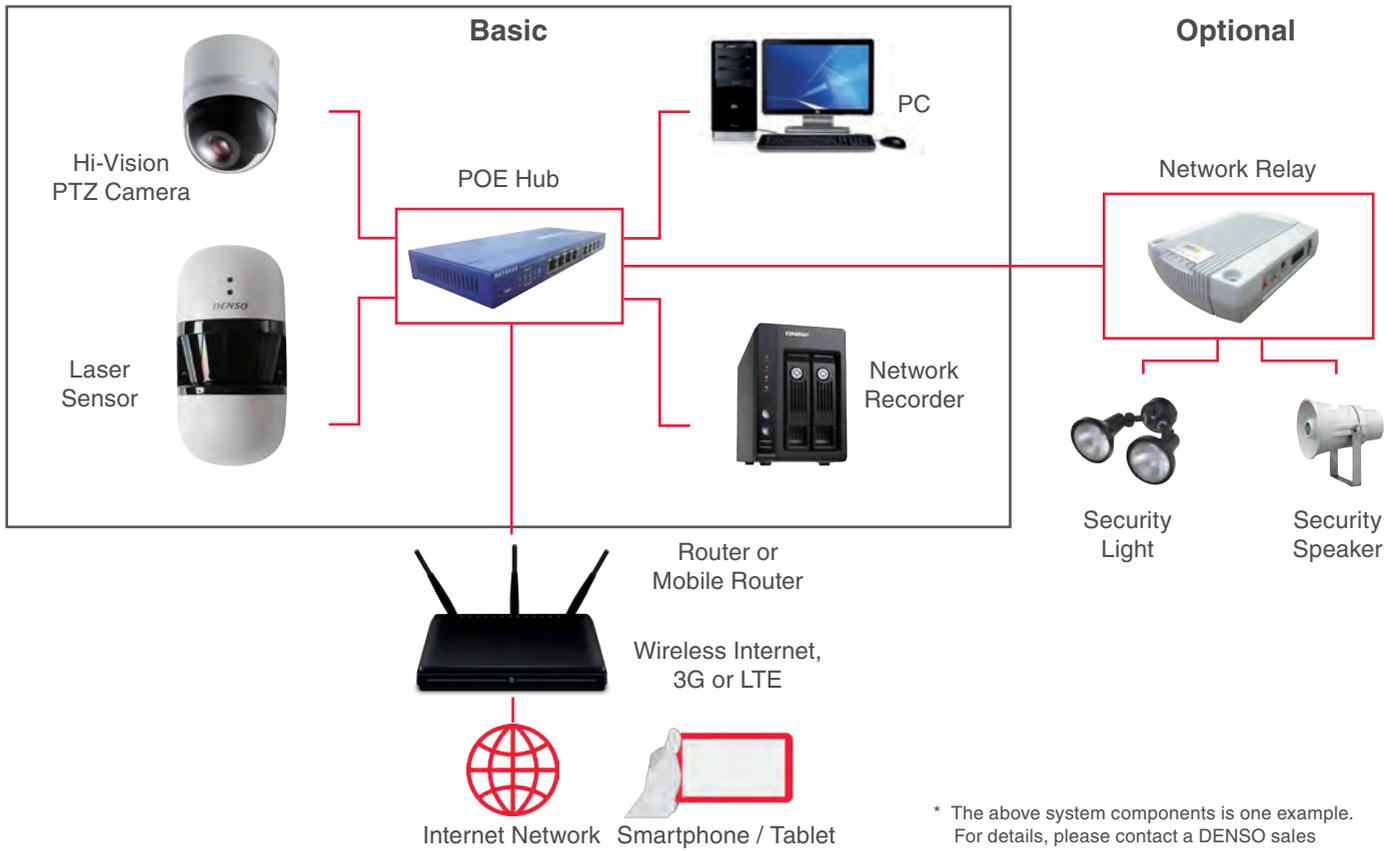
REAL-TIME VERIFICATION AND REMOTE WARNING *1

See live video from your computer or smartphone.^{*2}
Operate the camera and listen to real-time audio^{*3}.
Send warnings and intimidate remotely in real time.



*1: Remote verification and operation may not be available due to communication errors and sensor detection. Please contact a DENSO sales representative for information concerning connection environments, specifications, and peripheral devices necessary for remote operation. *2: Compatible computers and smartphones, as well as a specialized application are necessary. Please contact a DENSO sales representative for more details. You can playback movies recorded in the network recorder. *3: Audio collection quality varies depending on the environment.

SYSTEM COMPONENTS



SPECIFICATIONS

Model	ZD-LS111-H		ZD-LS111-M
Environmental factors	Operational environment	Temperature	-20 °C - 60 °C
		Humidity	30% - 90% (no frost, no condensation)
	IP rating		IP66 (JISC0920)
	Brightness (ambient light)		Less than 100.000 lux
	Safety		Class 1 (IEC60825-1:2007)
Power	Environmental load substance		RoHS available
	Power		24VDC +10%/-15%
Sensing specifications	Energy consumption		Less than 0,6 A
	Sensing area		60 m x 30 m (reflection rate: 10%) Note: The sensing area changes with the reflection rate of the object.
	Distance resolution		20 cm
	Angular resolution		0,25 degrees
	Number of configurable zones		3 stationary object zones, 6 moving object zones and 4 crossing detection lines
Input / Output Port	Auto tracking function	Yes	No
	Input (Zone-D enable)		1 Port
	Output (configurable by zone settings)		5 Ports (no-voltage contact output)
Indicator	Network connection		Ethernet (RJ45 connector)
Protection			Green/red 2 colour LED
Dimensions (B / H / D)			Maintenance Cover/Front Screen Open Sensing
Weight			138 mm (W) x 282 mm (H) x 140 mm (D)
Colour			1,7 kg (including metal settings)
			White

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The terminals remote operation requires a compatible terminal in an environment where the internet is available (3G, LTE, Wi-Fi range) and a Zone-D exclusive application. Compatible terminals are limited. For details, please contact a DENSO sales staff. For information concerning exclusive applications necessary for remote operation, please contact a DENSO sales representative. For information concerning connection environments, specifications, peripheral devices necessary for remote operation via a PC, please contact a DENSO sales representative. Remote verification and operation may not be available due to communication errors and sensor detection.

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