Laser Scan detector **RLS-3060**

- Basic information of Laser Scan detector

OPTEX CO., LTD.

Sept 2011
Layer protection with:

**Layer 3** Facility Protection

**Layer 0** Outside Perimeter

**Layer 1** Perimeter Line

**Layer 2** Outdoor Field Zone

**Layer 3** Facility Protection

REDSCAN

REDSCAN

SIP

Fiber Defender

PTZ Camera

Camera

Fiber SenSys

REDWALL®
Unrivalled performance
Product overview


- RLS-3060 does not require any PC for operation. It can be connected direct to PTZ camera, video transmitter, NVR, alarm activation system.

- RLS-3060 has 4 or 8 detection area segments and linked outputs. It can match PTZ control applications or be connected to any alarm activation system.

- RLS-3060 can recognize the size, speed and distance of objects within the 30M range. Processing with our detection algorithm, it recognize human targets and avoids false alarm factors.
Features of RLS-3060

- 30m radius for 190 degrees
- Vertical and horizontal detection area
- Unique detection algorithms- H1, H2, V
- 4 or 8 independently adjustable detection areas for PTZ camera control with TCP/IP output
- Four independent N.O. Relay outputs
- Form C master alarm output
- Automatic area setting function
- Environmental disqualification circuit
- Trouble output
- Tamper output
Laser scan detector can identify human location in the detection area.

Utilizing the location information from the detector, PTZ camera can be controlled to capture the human.

Combination of PTZ camera and Laser scan detector can be ideal solution for efficient video surveillance.
Benefits of Redscan

- Selectable horizontal & vertical detection area. For both detection modes, unique detection algorithm works for each.
- Can recognize moving object’s size, moving speed and distance from the unit. High reliable detection.
- 4 or 8 detection segments – can recognize locations of intrusion and activate linked to independent outputs for PTZ Camera Control or intruder activation system
- Flexible and Easy Set-up for Detection area.
- Analog (dry-contact) & TCP / IP connection.

Conventional PIR

Laser Scan Sensor
**Benefits of Redscan detector**

**REDSCAN** detector has 190 degree detection area. Therefore,

- No dead spot detection area setting
- Very flexible detection area setting
- Very precise detection area setting

**REDSCAN** has capability to recognize the intrusion location and 4 or 8 detection area segments and linked output. Therefore,

- Best match for PTZ camera preset control

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**Conventional PIR**

**Laser Scan Sensor**
Redscan, RLS-3060 can be installed vertically, horizontally or at an angle. Therefore, a horizontal or vertical or inclined detection area can be achieved:

Detection range:
30m (100ft.) radius, 180 degree for vertical detection area (V mode)
60m (200ft.) width, 1m (3.3ft.) depth for horizontal detection area (H1 mode)
30m (100ft.) radius, 190 degree for horizontal detection area (H2 mode)
Selection of detection pattern

“Invisible Wall” Application
This option is to detect when an intruder crosses the detection area. The unit judges the object size (height) and traversing time in the area.

Suitable for inside / outside of perimeter fence / wall or immediate perimeter of building to control PTZ preset.

“Fan” Application
This option is to detect when an intruder moves into the detection area. The unit judges the object size (width), moving speed and distance.

Suitable for open area and field zone protection with cameras.
Detection principle

Time of Flight (TOF) method
By calculating the time during which a emitted beam returns after hitting the object, the distance to the object can be measured.

Sensing resolution = 0.25 degree
At 30m distance, detection width is only 13cm.
Redscan is sampling every 0.25 degree. It means that Redscan protects 180 degree area with 720 beams and 190 degree area with 760 beams.
Size of beam spot is approx 20cm distance at 30m
Detection areas setting – Detection area

**Horizontal detection area**

“H1” mode
The unit can cover 30m x 1m detection range just for perimeter protection.

“H2” mode
The unit can cover 30m radius 190 degree arc wide area

**Vertical detection area**

“V” mode
It can cover approx 60m maximum detection area spread that functions like an invisible wall. Alternatively the detection area can be matched to an existing wall or fence thus providing early warning of intrusion.
Detection area setting – Setting mode

- **Manual mode**
  By turning the range dial it is possible to adjust the size of detection area A and B independently. Each area is automatically divided into 2 sectors, “A1” and “A2” and “B1” and “B2”.

  Each segment links 4 independent N.O. output
Detection area setting – Setting mode

- **Auto mode (Auto learning)**
  By using this mode, the unit can check the shape of site and set the detection area automatically.
  (The detection range is within the area which is set by the range selector dial.)

Horizontal detection area

Vertical detection area

The unit follows uneven ground and produce uniform detection coverage.

**Note:** Detector mounting critical to achieve maximum detection probability.
Detection area setting – Setting mode

- **Auto mode (Auto Tracing)**
  By using this mode, within the 30m radius 190 degree arc, you can make the necessary detection area by pushing set button and walking the edge of required area.
REDSCAN MANAGER (PC SETUP software)

- Visualized detection area
- Easy detection area setting on PC software
- Other detector setting on PC software
Detection area setting - Offset

Offset adjustment

Horizontal detection area

Edge of the detection area is adjustable, from 0 to 1m. You can avoid any objects e.g. trees which can cause unwanted detection.

Vertical detection area

With vertical detection area, you can set offset distance from the ground. (0 to 1m) You can avoid grass, small animals, etc. which can cause false alarms.
**Redscan technologies**

- **Area masking**
  Activate after 60 seconds if 50% or more detection area will be changed to less than 30cm from the unit.

- **Area rotating**
  Activate after 300 seconds if 30% or more detection area will be changed

- **Sensor trouble**
  Activate if there are something wrong for the Laser power or the motor spin.
**Fog Cancellation function**

Our special algorism allow to detect human even in fog situation. *(Patent pending)*

**DQ output**

Acts as early warning system and triggers when visibility is reduced to 150m. Unit is stable to 30m actual visibility.
Advantage for Installation

REDSCAN can refresh the ground shape automatically every hour for changes in snow or vegetation growth.

REDSCAN automatically adjusts for environmental changes.

(When the Auto mode switch P2 selected. If P1 position selected, detection area is fixed.)
Advantage for Installation

The REDSCAN automatically detects and learns the contours of the ground wherever you install!!, even for uneven ground.

REDSCAN saves time for design & installation and therefore costs.
Advantage for Installation

REDSCAN can be installed at an angle to a wall, reducing installing cost dramatically!!

It is not necessity to install sensors with fence line for perimeter security. REDSCAN will bring a new installation design to save time and cost.
Revolution of installation!! REDSCAN can make detection area whatever you want.

It’s one of headache for installers to make detection area whatever they want, however REDSCAN make it quite easy.
High-end security system

Access control

Fiscal barrier

Perimeter sensor

PTZ or Fixed Camera

High end security: Access Control System
+ Perimeter sensors (REDWALL/REDSCAN)
+ Video surveillance with REDWALL/REDSCAN
  (Camera control for efficient video surveillance)
The REDSCAN LITE RLS-3060L is the 2nd generation OPTEX Laser Scan detector with high performance advanced intrusion and low cost.

Features

- Detection range is 100ft. (30m) radius, max. 190 degree
- Selectable horizontal & vertical detection area
- **Advanced detection algorism** for perimeter intrusion applications
- Recognition of intrusion locations and activates 4 independent outputs
- Flexible and easy Set-up for detection area
- Alarm outputs: analog (dry-contact), UDP, TCP/IP connection
The REDSCAN ULTIMATE RLS-3060SH is the 2nd generation OPTEX Laser Scan detector with intelligent detection analysis functions and adjustable detection algorithm parameters.

Features
- Detection range is 100ft. (30m) radius, max. 190 degree
- Selectable horizontal & vertical detection area
- Intelligent detection analysis for various type of applications such as PTZ camera control, human hands detection, direction control, vehicle detection, small thrown object, static package, access control etc.
- Recognition of intrusion locations and activates 4 independent relay outputs for PTZ control
- 8 Selectable zone patterns for PTZ camera control on IP connection
- Flexible and easy Set-up for detection area
- Built-in heater (-40 + 60 C degree, -40 + 140 F degree)
- Alarm output: analog (dry-contact), UDP and TCP/IP connection
You can select detection algorithm depending upon application.
You can select 8 detection patterns for PTZ camera control on IP connection.
Comparison REDSCAN ULTIMATE vs REDSCAN LITE

**REDSCAN ULTIMATE**

- Keep all terminals, switches and LEDs

**REDSCAN LITE**

- Keep all terminals, but eliminate some switches, LEDs
Applications for - REDSCAN ULTIMATE and LITE

Flexible detection area setting and automatic area adjustment functions

High resolution surface detection

VS

Narrow boundary Zone

Early detection/Easy install for fence line

Undulation ground/ Snow

Building protection
Applications for - REDSCAN ULTIMATE

Intelligent Detection Analysis

PTZ camera control

Vehicle detection

Human hands detection

Access control
Wiring Considerations

*1: TAMPER terminals to be connected to a 24 hour supervisory loop.
Digital (TCP/IP) Monitoring System

PTZ-Dome Camera

OPTEX RLS-3060 Laser Detectors

192.168.000.001 192.168.000.002 192.168.000.003

192.168.000.254

Alarm-Signal to NVR via CAT-5 Cable

Camera view transmitted to NVR via CAT5 cable

Camera Output on Screen

Network Video Recorder (NVR)

Camera to pre-set positions via CAT5 cable

switch/router (every 100m)
Analog (Relay Outputs) Monitoring System

**OPTEX RLS-3060 Laser Detectors**

- 8 Outputs
- Alarm Cable (7.02 16-core)
- Alarm Input Expansion Module

**PTZ-Dome Camera**

- Camera view transmitted to NVR via CAT5 cable
- Camera to pre-set positions via CAT5 cable
- Camera Output on Screen

**Network Video Recorder (NVR)**

- Alarm-Signal to NVR/DVR RS485 Telemetry Cable
Analog (Relay Outputs) Monitoring System – 2

PTZ-Dome Camera

4 Zone-Alarm-Outputs per scanner driving camera to pre-set positions

Alarm Cable (7.02 8-core)

OPTEX RLS-3060 Laser Detectors

4 Outputs

4 Outputs

4 Outputs

4 Outputs

4 Outputs

Alarm Cable (7.02 8-core)

Alarm Input Expansion Module

Alarm Input Expansion Module

Alarm-Signal to NVR/DVR RS485 Telemetry Cable

Network Video Recorder (NVR)

Camera view transmitted to NVR via Coaxial Cable

Camera Output on Screen
Generic event code is **simple character code** and **generic in Video Management Software industry**.
<table>
<thead>
<tr>
<th>Model</th>
<th>RLS-3060SH</th>
<th>RLS-3060L</th>
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<tbody>
<tr>
<td>Indicator</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A2 alarm</td>
<td>Red LED</td>
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</tr>
<tr>
<td>A1 alarm</td>
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</tr>
<tr>
<td>B1 alarm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B2 alarm</td>
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<td></td>
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<tr>
<td>Status</td>
<td>Yellow LED</td>
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<td>Power</td>
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<tr>
<td>Function</td>
<td>H1/H2/V</td>
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<tr>
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<td>Auto/Manual</td>
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<td>P1/P2</td>
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<td>Size</td>
<td>L/M/S</td>
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<td>Detection range</td>
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<td>Volume setting</td>
<td>Fine adjust for Detection range</td>
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<td>Offset</td>
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<td>Anti masking function</td>
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<td>-20 ~ +60°C (-4 ~ +140°F)</td>
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<td>Operating temperature with heater</td>
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Thank you.