Laser Scan detector RLS-3060
- Basic information of Laser Scan detector

OPTEX CO., LTD.
Product overview


- RLS-3060 does not require any PC for operation. It can be connected to PTZ camera, video transmitter or DVR.

- RLS-3060 has 4 or 8 detection area segments and linked outputs. It can match PTZ control applications.

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

- 30m radius for 190 degrees
- Vertical and horizontal detection area
- Unique detection algorithm
- 4 or 8 independently adjustable detection areas for PTZ camera control with TCP/IP output
- POE
- Compatible with many VMS Platforms
- Four independent N.O. Relay outputs
- Form C master alarm output
- Automatic area setting function
- Environmental disqualification circuit
- Trouble output
- Tamper output
Detection principle

**Detection principle**

**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

**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.

**Scanning speed = 1200 rpm**
Detection areas

REDSCAN, RLS-3060 can be installed vertically and horizontally. Therefore, it can make horizontal and vertical detection area.

Detection range is 100ft. (30m) radius, 190 degree.
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 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
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 Patterns

RLS- LITE and ULTIMATE

RLS ULTIMATE
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.
- Visualized detection area
- Easy detection area setting on PC software
- Other detector setting on PC software
REDSCAN MANAGER (PC SETUP software)
Detection area setting - Offset

Offset adjustment

Horizontal detection area

Offset adjustment

Horizontal detection area

Vertical 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.

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.
**Area masking**

Activate after 60 seconds if 50% or more detection area will be changed to less than 30 cm 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
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.)
Layer protection with:

REDSCAN

Layer 0
Outside Perimeter

Layer 1
Perimeter Line

Layer 2
Outdoor Field Zone

Layer 3
Facility Protection

Fiber SenSys

REDWALL
Unrivalled performance

Camera

REDSCAN

Fiber Defender

PTZ Camera

SIP
Need a higher Fence or Wall?

To prevent climbing or ladder attack
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.
Redscan Sequential Confirmation Detection

Redscan RLS-3060SH unique independent 8 segmented detection area can create 2 different threat level identification alarm.

When intruder entered into outer area, you can use this area just for pre-alarm notification at the controller or video management software to take early deterrent action, lighting on security light, start video image recording by DVR etc...

If intruders moves further and triggered by genuine alarm area, you can take more secured preventive action, alarm signal sent to monitoring center or call security guard etc..

Also 8 independent detection area of RLS-3060SH is suitable to capture the intruder by PTZ camera with good quality image to identify the target.
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.
Applications

Electric substation
Applications

Perimeter surveillance with PTZ camera

H1 mode makes narrow detection area just for perimeter protection.
Applications - Prisons

Perimeter surveillance with vertical detection area
Vertical Application
Any attempt to climb over or enter through the fence rails will be detected.

Each detector will output up to eight separate alarm outputs via IP for integration into camera presets for rapid alarm verification.
Angled Application
Angled Application

Redscan can be mounted at an angle to extend detection area inside, or outside main perimeter with multiple detection zones.
Perimeter surveillance for Narrow boundary!!
REDSCAN can installed in a narrow boundary zone.
Invisible fence Line

The Redscan can be used to create an invisible fence line that will ignore wildlife for situations where fences can’t be installed.
Early detection for fence lines!! REDSCAN can detect a person:
Lifting, Climbing or Cutting fences

Normally it’s difficult to create detection areas outside of fence lines, however REDSCAN can do that.
Building surface protection  

Roof protection
Reference example - On going project -

Facility protection for Utility company in USA

Application: Activation of a sprayer of red dye in event of attempted graffiti on doors
Reference example - On going project -

Perimeter protection for Nuclear Power Plant

Application:
Protection over fence to avoid to break pumping facility.

Current status:
3 on going project in the world as test stage.
Reference example - On going project -

Multi Client Data Center server protection

Application:

Redscan detects people from one client attempting to sabotage another clients server – On going project in USA
Application:
Redscan detects people and vehicles in railroad crossing to support the person who operate the crossing gate.
Virtual gates at High Security Site

SLAC – Sector 30 Gate - Phase 2

SLAC – SSRL Gate 2 - Phase 2

SLAC – SSRL Gate 1 - Phase 2

Application:

To create a virtual gate in conjunction with an access control system to authorize access
Application:

Redscan can detect vehicles only as they approach gates, facilities or parking areas and ignore people.
Application:
To protect against theft of panels or vandalism of Solar Farms
Application:
To protect against theft of copper reels from SNCB railway yards by lorry
Application:
To detect intrusion through ceiling or roof in offices and warehouse.
Application:

To detect people or packages falling onto railway tracks or attempts to enter the tunnel
Reference example - On going project -
Reference example - On going project -
Application:
Protection of perimeter of the boundary to prevent break out of prison.
Application example - On going project -

Roof protection for Cash Transit Company

65ft. / 20m

131ft. / 40m
Application: Talon Air maintains a secure area for workers to move while providing a unique alarm system for possible damage to the planes while getting towed into the hanger. In addition, it provides their customers value added safety measures that protect their planes.
Two laser scanners for each front and back side of the hanger, horizontally mounted to create a “virtual curtain”
Virtual curtain from the outside: Even if doors stay open, any unauthorised access will be detected.
Separate compartments within the hanger, made of virtual curtains allow for tight asset security.
Application: Protection of perimeter of buildings
Current status:
Already the system has been installed and commissioning has been done.
Application:

To avoid unauthorized access to the inside of secured area from the public area in the airport.
Current status:
Already the system has been installed and worked well.
Application:
Protection of art on walls by REDSCAN with video monitoring, it could be efficient video monitoring and reduce man guard cost.
Reference example - On going project -

Left Package Detection

Application: To trigger an alarm in the event of a package being left for 30 seconds
NEW development - POE/IP interface module

System

Installable to the gang box

SIP Series

AIR Series

Redscan Series

FSI products

 PIE-1

Gang Box

 PIE-1

PoE Switch

 PIE-1

 PIE-1

 IP camera

 Milestone

 Connector for alarms

 Connector for powers

 Redwall Event Code

 Redwall Event Code + PoE
Compatible VMS Platforms

- milestone
- JVC
- Genetec
- OnSSI
- Honeywell
- Sicura
- axxxon
Integration image
**What is Generic event code?**

**Generic event code** is **simple character code** and **generic in Video Management Software industry**.

"RLS126MOA1"
Connection (IP)

IP camera

TCP/IP

VMS/ NVR

Ethernet port (RJ-45)

Alarm information
Detected human position
Environmental signal
Trouble signal

ASCII Event Code

Switch

UDP

Alarm outputs

Alarm Management System

Analog

Power supply 24VAC/DC

REDSCAN Laser Scan Detector - System
Digital (TCP/IP) Monitoring System

PTZ-Dome Camera

OPTEX RLS-3060 Laser Detectors

Network Video Recorder (NVR)

Camera view transmitted to NVR via CAT5 cable

Camera to pre-set positions via CAT5 cable

Alarm-Signal to NVR via CAT-5 Cable

192.168.000.001 192.168.000.002 192.168.000.003

192.168.000.254

switch/router (every 100m)

Camera Output on Screen
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)

OPTEX RLS-3060 Laser Detectors

8 Outputs

Alarm Input Expansion Module

Alarm Cable (7.02 16-core)

Alarm-Signal to NVR/DVR RS485 Telemetry Cable

Network Video Recorder (NVR)
Analog (Relay Outputs) Monitoring System – 2

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

- OPTEX RLS-3060 Laser Detectors
- PTZ-Dome Camera
- Camera view transmitted to NVR via Coaxial Cable
- Camera Output on Screen

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

Alarm-Signal to NVR/DVR RS485 Telemetry Cable

Network Video Recorder (NVR)
System diagram - CCTV based system

- Power supply
  - 24VDC/24VAC
- Alarm outputs for each area (A1, A2, B1, B2) x 4
- Tamper output
- Self check trouble output
- Environmental trouble output
- Alarm output (N.O./N.C.)
- Ethernet port (RJ-45)
- PTZ
- REDSCAN
- DVR
- Peripheral equipment
- PC
- Power supply
  - 24VDC/24VAC

PC

REDWALL

Unrivalled performance
System (Analog)

- Power supply
- Alarm outputs for each area (A1,A2,B1,B2) × 4 or 8
- Master Alarm output (N.O./N.C.)
- Tamper output
- Self check trouble output
- Environmental trouble output
- Ethernet port (RJ-45)

PTZ

REDSCAN

NVR/VMS
Alarm Management System

PC

* Set up
* Update software

Power supply
24VDC/AC
✓ IP data transmission for all alarm/ trouble output via Ethernet port
✓ Direct IP connection to your NVR & PC Video Management Software
✓ Fit to Generic Event function software on NVR & VMS
Thank you.