SPECIFICATIONS

Model		RLS-3060SH	RLS-3060L
Detection method		Infrared Laser Scan	
Laser protection class		Class 1	
Coverage	Vertical area	Max. 60 m (Approx. 200 ft.) at 10% reflectivity / Detection range expansion mode (RLS-3060SH only) enable max. 100 m (Approx. 330 ft.) .*	
	Horizontal area	Radius:30 m (Approx. 100 ft.), Arc:190° at 10% reflectivity / Detection range expansion mode (RLS-3060SH only) enable radius:50 m (Approx. 165 ft.), Arc:190°.*	
Detection resolution		0.25°	
Communication port		Ethernet ,RJ-45 ,10BASE-T/100BASE-TX	
Protocol		UDP, TCP/IP *Redwall Event Code	
Power input		24 VDC , 24 VAC	
Current draw		400 mA max. (24 VDC) 600 mA max. (24 VAC)	
Heater power input		24 VDC, 24 VAC	-
Heater current draw		400 mA max. (24 V DC/AC)	-
Mounting height	Vertical area	From 4 m (13 ft.) to 15 m (50 ft.) (recommendation)	
	Horizontal area	0.7 m (28 in.) (recommendation)	
Target object selector		S / M / L	
Sensitivity selector		H / M / L	
Camera control output		N.O. 28 VDC, 0.2 A x 4 outputs / Can be changeable to N.C. *	
Master alarm output		Form C, 28 VDC, 0.2 A max.	
Trouble output		Form C, 28 VDC, 0.2 A max.	
Tamper output		N.C. 28 VDC, 0.1 A max.	
Environmental disqualification circuit		Form C, 28 VDC, 0.2 A max.	
Alarm period		Approx. 2 sec., Off delay timer	
Operating temperature		-20 to 60 °C (-4 to 140° F)	
Operating temperature with heater		-40 to 60 °C (-40 to 140° F)	-
IP rating		IP66	
Dimensions (H x W x D)		334 x 144 x 155 mm (13.2 x 5.7 x 6.1 in.)	
Weight		2.5 kg (88 oz)	2.4 kg (85 oz)

Note : Items with asterisk(*) become available when RLS-3060 firmware is version 8.0.0 or later with RSM version 8.0.0 or later.

Model	RLS-2020I	RLS-2020S
Installation location	Indoor	Indoor/Outdoor
Detection metod	Infrared Laser Scan	
Laser protection class	Class 1	
Power input	10.5 to 30 VDC, PoE (IEEE802.3af/at compliant)	
Current draw	500mA max. (12 VDC), 250mA max. (24 VDC), 6W max. (PoE)	
Mounting method	Ceiling mount, Wall mount, Tripod mount, Pole mount (option), Recess mount (option)	
Detection area	20 x 20 m, (approx. 65 x 65 ft.), 95 degrees	
Detection range	Radius 1 to 21m (approx. 3.0 to 68 ft.) at 10% reflectivity	
Detection resolution/ Response time	0.25 degrees / within 75 ms to 15 minute *	0.25 degree / within 75msec to 15 minutes (for indoor mode and outdoor mode) * 0.25 degree / within 25msec (for indoor throw-in mode), 0.125 degree / within 100msec to 15 minutes (for Indoor high resolution mode) *
Mounting height (Vertical mode)	2 m (6.7 ft.) or higher	Indoor: 2 m (6.7 ft.) or higher Outdoor: 4 m (13 ft.) or higher (Recommended)
Communication port	Ethernet RJ-45 10BASE-T/100BASE-TX (Auto negotiation)	
Network protocol	TCP/IP, UDP/IP, DHCP, DNS, HTTP, HTTPS, FTP, SNMPv1/v2c/v3, ICMP, ARP	
Output	3 outputs, 28 VDC 0.2A max. N.O./N.C. Selectable (3 from Master alarm, Zone outputs, Trouble, Tamper)	3 outputs, 28 VDC 0.2A max. N.O./N.C. Selectable (3 from Master alarm, Zone outputs, Trouble, Tamper, D.Q.)
Input	-	1 Non-voltage contact input
Alarm period	Approx. 2 sec delay timer	
Operating temperature	-40 to 50 C degrees (-40 to 122 F degrees)	-40 to 60 C degrees (-40 to 140 F degrees)
IP rating	IP66	
Dimensions (HxWxD)	146 x 160 x 160 mm (5.8 x 6.3 x 6.3 inch)	
Weight	1.0 kg (2.2 lb)	

Note : Items with asterisk(*) become available when RLS-2020 firmware is version 2.1.0 or later with RSM version 8.2.2 or later.

Model	SIP-3020	SIP-4010	SIP-404	SIP-3020/5	SIP-4010/5	SIP-404/5	SIP-5030	SIP-100
Detection method	Passive infrared							
Coverage (main area)	30 x 20 m (100 x 65 ft.)	40 x 10 m (130 x 33 ft.)	40 x 4 m (130 x 13 ft.)	30 x 20 m (100 x 65 ft.)	40 x 10 m (130 x 33 ft.)	40 x 4 m (130 x 13 ft.)	50 x 30 m (165 x 100 ft.)	100 x 3 m (330 x 10 ft.)
Coverage (creep zone)	-	-	-	3 x 5 m (10 x 16 ft.) installed at 2.3 m (7.6 ft.) height, 6 x 9 m(20 x 30 ft.) installed at 4 m (13 ft.) height, Detection angle adjustable horizontally				
Power input	11 to 16 VDC 22 to 26 VAC with optional heating unit							
Current draw	40 mA max. (12 VDC) 75 mA max. (24 VAC), 415 mA max. (24 VAC) with optional heating unit			45 mA max. (12 VDC) 85 mA max. (24 VAC), 425 mA max. (24 VAC) with optional heating unit			45 mA max. (12 VDC) 85 mA max. (24 VAC), 425 mA max. (24 VAC) with optional heating unit	50 mA max. (12 VDC) 90 mA max. (24 VAC), 430 mA max. (24 VAC) with optional heating unit
Mounting height	2.3 to 4 m (7.6 to 13 ft.)							
Sensitivity selector	Far: SH/H/M/L Near: SH/H/M/L			Far: SH/H/M/L Near: SH/H/M/L Creep zone: SH/H/M/L				
Range selector	Far: On / Off						-	-
Detection logic selector	AND / OR							
Alarm output (main area)	N.O., N.C. 28 VDC 0.2A max.						Far area: N.O., N.C. 28 VDC 0.2 A max. Near area: N.O., N.C. 28 VDC 0.2 A max.	
Alarm output (creep zone)	-	-	-	N.O., N.C. 28 VDC 0.2 A max.				
Alarm interval period	Off / 15, 30, 60 sec.							
Trouble output	N.C., 28 VDC 0.2 A max.							
Tamper output	N.C., 28 VDC 0.1 A max.							
Alarm period	Approx. 2 sec.							
Warm-up period	Approx. 60 sec.							
Operating temperature	-25 to +60°C, -40 to +60°C with optional heating unit (-13 to +140 °F, -40 to +140° F with optional heating unit)							
IP rating	Main unit : IP65 / Chassis : IP55							
Dimensions (H x W x D)	227 x 102 x 266 mm (9.0 x 4.0 x 10.5 in.)			248 x 102 x 266 mm (9.8 x 4.0 x 10.5 in.)			271 x 102 x 290 mm (10.7 x 4.0 x 11.4 in.)	
Weight	1.2 kg (42 oz)			1.4 kg (48 oz)			1.6 kg (56 oz)	

Model	SIP-3020WF	SIP-4010WF	SIP-404WF
Detection method	Passive Infrared		
Coverage	30 x 20 m (100 x65 ft.)	40 x 10 m (130 x33 ft.)	40 x 4 m (130 x 13 ft.)
Power input	3 to 9 VDC Alkaline or lithium battery		
Operating voltage	2.5 to 10 VDC		
Current draw	40 µA(Standby) 5 mA max. (Operating LED ON)		
Mounting height	2.3 to 4 m (7.6 to 13 ft.)		
Sensitivity selector	Far: SH/H/M/L Near: SH/H/M/L		
Range selector	Far: On / Off		
Detection logic selector	AND / OR		
Alarm output	N.C. 10 VDC, 0.01 A max. N.O. 10 VDC, 0.01 A max.		
Alarm interval period	Off / 5, 60, 150 sec.		
Trouble output	N.C., 10 VDC 0.01 A max.		
Tamper output	N.C., 10 VDC 0.01 A max.		
Alarm period	Approx. 2 sec.		
Warm-up period	Approx. 120 sec.		
Operating temperature	-25 to +60°C (-13 to +140°F)		
IP rating	Main unit : IP65 / Chassis : IP55		
Dimensions (H x W x D)	227 x 102 x 266 mm (9.0 x 4.0 x 10.5 in.)		
Weight	1.2 kg (42 oz)		

* Specifications and design are subject to change without prior notice.

OPTIONS

AWT-3
Area walk tester for SIP series

AVF-1
Area view finder for SIP series

SIP-HU
Heating unit for SIP series

SIP-AT
SIP adjustment tools (AWT-3 + AVF-1) for SIP series

SIP-MINIHOOD
Sun/Snow shield for SIP-3020/4010/404

SIP-MIDIHOOD
Sun/Snow shield for SIP-5030/100

RLS-PB
Pole mount bracket

RLS-SB
Adjustable angle mounting bracket for RLS-3060 series

RLS-LW
Laser Window for RLS-2020 series

LAC-1
Laser Area Checker

RLS-RB
Recess mount bracket

OPTEX — Sensing Innovation

REDSCAN / REDWALL PRODUCT DIGEST
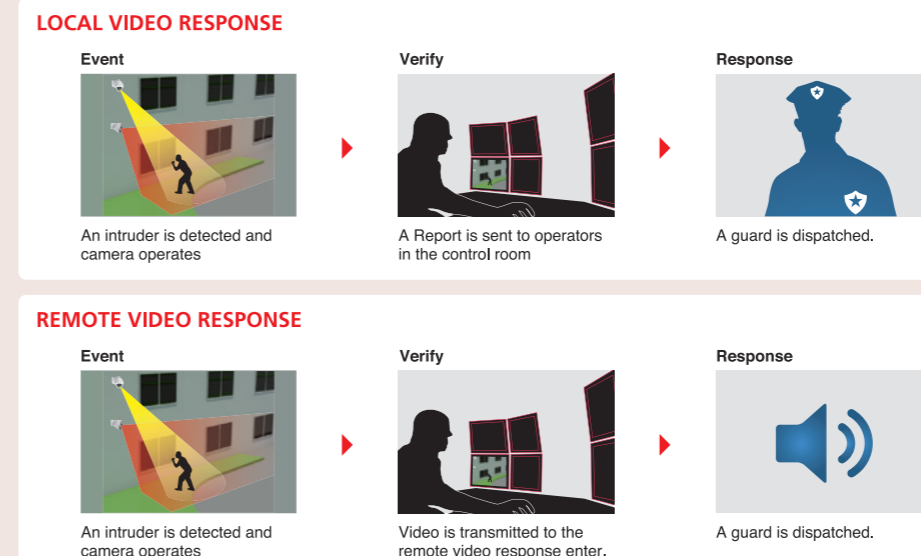
For efficient Video surveillance

Protection of outdoor assets and preventions of unauthorized entries are serious challenges for large properties, such as office buildings, logistics centers, power plants, and industrial facilities.
Effective security system must deter intrusion to the properties.

There are two practical methods. One method is setting up a local video response (LVR) system.
The system employs security guards and uses video surveillance system linked to external detectors,
When an external detector detects an intrusion, a camera captures an image and sends the image to a guard room. Then, security guards are dispatched to the point of detection to rectify the event.
In this way, LVR changes a traditional usage of guards and night watches into efficient way of deterring intrusions.
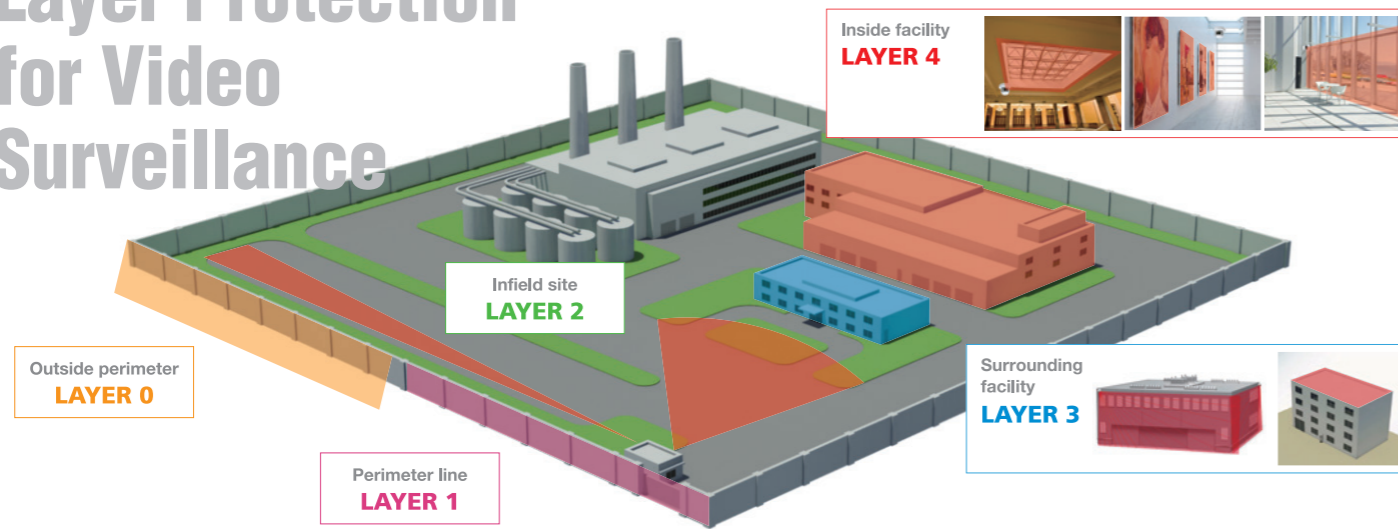
Another method is called a remote video response (RVR) system.
RVR systems use external detectors, network connected cameras and speakers for remote audio announcement. hen an external detector detects an intrusion, an operator in a distant RVR center verifies an image and remotely makes a voice warning through the speakers. The operator at the RVR center can also reports the event to a designated key-holder/local guards or makes a call out to police to set an ordinance.

REDSCAN and REDWALL are the most suitable indoor/outdoor detectors for these LVR and RVR security systems. Due to their reliable detections, LVR guard rooms and RVR centers can obtain critical images of intrusions that may lead to crime, acts of vandalism, terrorism or any threats to important properties.

### Operation flow chart for LVR and RVR

LOCAL VIDEO RESPONSE

Event	Verify	Response
An intruder is detected and camera operates	A Report is sent to operators in the control room	A guard is dispatched.

REMOTE VIDEO RESPONSE

Event	Verify	Response
An intruder is detected and camera operates	Video is transmitted to the remote video response enter.	A guard is dispatched.

Layer Protection for Video Surveillance

Inside facility
LAYER 4

Infield site
LAYER 2

Surrounding facility
LAYER 3

Outside perimeter
LAYER 0

Perimeter line
LAYER 1

REDWALL-V employs five innovative sensing technologies

Technology I   PIR sensor with double conductive shielding for visible light and RFI protection.
Technology II   *Thermo-sensor for automatic sensitivity adjustment
Technology III   *Illuminance sensor for automatic sensitivity adjustment
Technology IV   Photo-beam sensor for anti-masking
Technology V   Accelerometer for anti-rotation
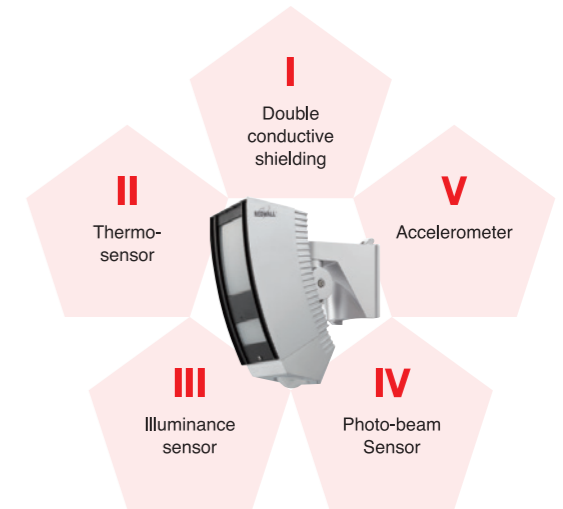
By using these five technologies, The REDWALL-V series provides the following three benefits:

1. **Reduction of false alarms**
2. **Quick and reliable installation**
3. **Protection from vandalism**

*REDWALL-V uses surrounding temperature and luminance information to optimize its sensitivity to reduce false alarms.

I Double conductive shielding
II Thermo-sensor
III Illuminance sensor
IV Photo-beam Sensor
V Accelerometer

Laser Scan Detector — RLS-3060 series

The RLS-3060 series is an innovative laser scan detector that identifies a moving object's size, speed and distance from the detector. It processes that information with a unique algorithm, resulting in a highly reliable detection system with minimal false alarms.

FEATURES
- 30m radius for 190 degrees range
- Vertical and horizontal mounting
- Unique detection algorithm
- Automatic area setting function
- 4 independently adjustable detection areas and 4 dry contact outputs for PTZ control or 8 independently adjustable detection areas and REDWALL Event Code for Network Video Recorder and Video Management Software (on IP Connection)
- Changeable Dry-contact Alarm Output type N.O. to N.C.
- Fog cancellation algorithm (Patent listed)

VERTICAL DETECTION ZONE
52-59m (170-193ft)
4-15m (13-50ft.)

HORIZONTAL DETECTION ZONE
60m (200ft.)
30m (100ft.)

RLS-3060L
LAYER 0 | LAYER 1 | LAYER 3 | LAYER 4
- Area masking / Allocation function (Either 1 pattern can be set.)
- Scene selection (Indoor, Outdoor,Indoor/Outdoor Fence/Wall top protection, Indoor/Outdoor Loitering)

RLS-3060SH
LAYER 0 | LAYER 1 | LAYER 3 | LAYER 4
- Detection range expansion mode (50m radius for 190 degrees) can be selected.
- Scene selection (Indoor, Outdoor,Indoor/Outdoor Fence/Wall top protection, Indoor/Outdoor Loitering, Indoor Ceiling/Wall protection and Vehicle detection)
- Advanced area setting, Max. 4 Area Masking / Allocation patterns can be set.
- Built-in heater

Laser Scan Detector — RLS-2020 series

The RLS-2020 series is a compact and highly customizable laser scan detector that helps protect in an unobstructed way, houses, buildings, flat roofs, controlled areas and assets by creating an invisible laser wall or plane and detecting any intrusion breaching it.

FEATURES
- 20m x 20m (65ft. x 65ft.), 95 degree detection area
- Vertical and Horizontal detection modes
- Multi-angle Adjustment Shell Structure (M.A.S.S.)
- Unique detection algorithm
- Automatic area setting function
- Advanced area setting
- 4 adjustable detection areas on IP connection
- Total 3 outputs can be assigned for analog connection
- Integration to external devices and applications with REDWALL Event Code.
- Supporting multiple network protocols, e. g. TCP/IP, UDP/IP, DHCP, DNS, HTTP, HTTPS, FTP, SNMPv1/v2c/v3, ICMP, ARP.

20m (65ft.)
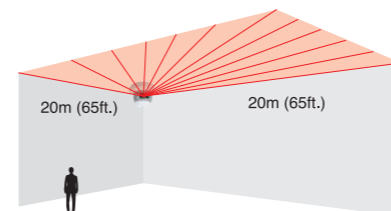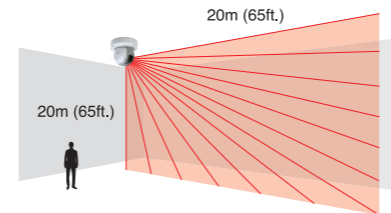20m (65ft.)

RLS-2020I
LAYER 4
- Indoor use model
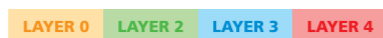
RLS-2020S
LAYER 0 | LAYER 2 | LAYER 3 | LAYER 4
- Indoor / outdoor mode
- Indoor high resolution mode
- Indoor throw-in mode

20m (65ft.)
20m (65ft.)

Synthesized Intelligent PIR — REDWALL-V series
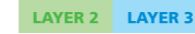
SIP-3020 / SIP-4010 / SIP-404
LAYER 2 | LAYER 3
- Standard short range type

SIP-3020/WF
30 (100)
20 (65)
4 (13)

SIP-4010/WF
40 (130)
10 (33)
4 (13)

SIP-404/WF
4 (13)
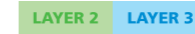40 (130)
4 (13)

Unit: m (ft.)
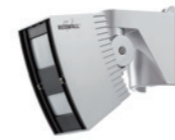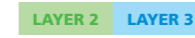
SIP-3020WF / SIP-4010WF / SIP-404WF
LAYER 2 | LAYER 3
- Battery operated
- Short range type
- Compatible with
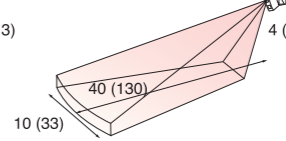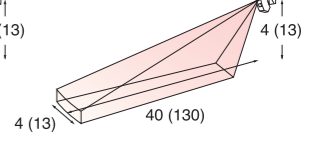- Wireless transmitter

SIP-3020/5 / SIP-4010/5 / SIP-404/5
LAYER 2 | LAYER 3
- Short range type
- With creep zone

SIP-3020/5
30 (100)
20 (65)
4 (13)
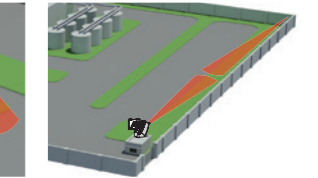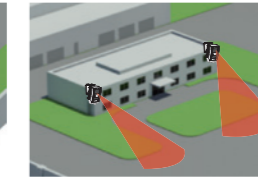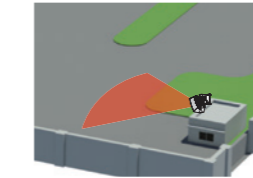
SIP-4010/5
40 (130)
10 (33)
4 (13)
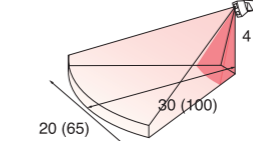
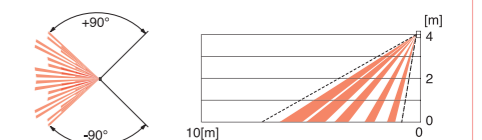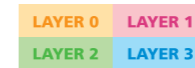**SIP-404/5**
4 (13)
40 (130)
4 (13)

Unit: m (ft.)

Creep zone
The built-in creep zone detector provides a 3m x 5m (10' x 16') at 2.7m (7.6') height detection area directly below the detector, which eliminates the normal "dead space" that an intruder could enter a protected area. The creep zone detection area can be adjusted between -90 to +90 degree horizontally and -3 to +3 degree vertically.
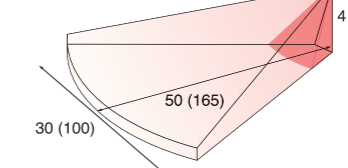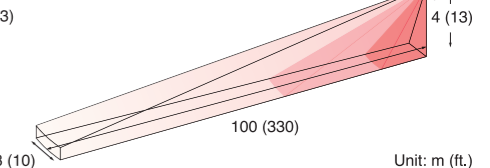
+90°
-90°
10[m]
[m]

SIP-5030 / SIP-100
LAYER 0 | LAYER 1
LAYER 2 | LAYER 3
- Long range type
- With creep zone

SIP-5030
50 (165)
30 (100)
4 (13)

SIP-100
100 (330)
3 (10)
4 (13)

Unit: m (ft.)

SIP-3020/5, SIP-4010/5, SIP-404/5, SIP-5030 have 2 outputs - Main area and Creep zone. SIP-100 has 3 output - Far, Near and Creep zone. Multiple outputs can be utilized for switching presets of PTZ camera or control digital zoom.

Camera
SIP-100
Far zone | Near zone | Creep zone