



# REDWALL®



## SUPER REDWALL

### Installation and Set-up Instructions For LRP-3020S LRP-4010S LRP-404S

#### DESCRIPTION

Model **LRP-3020S** is designed to detect human movement within a 30° arc at ranges up to 30 metres (100 ft.). See Fig. 5.

Model **LRP-4010S** is designed to detect human movement within a 10° arc at ranges up to 40 metres (130 ft.). See Fig. 6.

Model **LRP-404S** is designed to detect human movement within a 6° arc at ranges up to 40 metres (130 ft.). See Fig. 7.

The rugged cast aluminium housing allows use in heavy industrial environments indoors or out.

The operating voltage of the unit is 12VDC or 24VAC. Detection output is by two electrically isolated relays (NC/NO) having a 30V 1 Amp maximum rating.

The mounting base contains all of the connection terminals, event indicators, sensitivity selector switch logic selector switch and jack socket for the audio Walk-Tester **OPM-WT**. The removable cover is tamper protected by a normally closed microswitch.

The detector head is factory sealed and has NO user controls or access. The swivel bracket allows 180° panning and is locked into position by 3 allen head screws. Fig. 8. **A matching allen key is supplied with every unit and should be retained for future use.**

New features now include Advanced Temperature Compensation Circuits, giving even higher reliability against temperature change. Double conductive shielding provides higher stability of the detector against white light disturbances and RFI. A sensitivity switch has been included to give users the ability to reduce the sensitivity of the unit from 100% (high) to 80% (low). This feature is particularly useful to further increase stability in a hostile environment.

#### QUAD AND DUAL Bi-CHANNEL SYSTEM

The **LRP-404S** uses an interleaved 4 element (QUAD) sensor. These, when combined with the optical system, produce two independent sets of zones "A" and "B" accurately interleaved so that when an intruder crosses the detection area, sequential "A" "B" "A" "B" signals will be produced. Each pair of elements feeds a separate processing channel.

The **LRP-3020S** and **LRP-4010S** models use two independent dual-element sensors which produce two independent sets of zones "A" and "B" accurately interleaved so that an intruder crossing the zones will produce sequential "A" "B" "A" "B" signals. Each dual element sensor feeds a separate processing channel.

These two channels can be set to either "AND" mode or "OR" mode. The "AND" mode works to reduce false alarms, since the alarm is generated only when both "A" and "B" zones are triggered within the present time (10 seconds). When "OR" mode is selected, the unit generates the alarm signal, when either "A" or "B" zones are triggered. Each channel has an LED "Event" indicator. The LEDs indicate the status of each channel independently, regardless of the detection logic selector switch being set to "AND" or "OR".

## INSTALLATION

### NOTES:

When mounted at the recommended height of 2.3m (7.6 ft) there will be an area directly below the unit extending to 4m (13 ft.) where an intruder may not be detected.

When planning the location, remember that **All** P.I.R detectors respond best when the intruder crosses zones.

Fix to a firm rigid surface such as brick or concrete using all four fixing holes.

To gain water tight sealing please use the rubber washers provided for the internal screws to prevent water entering the internal compartment when the unit is mounted. (See figure 1 below)

Do not use silicone sealant to seal the connection enclosure as it will corrode the P.C.B. Failure to do so may invalidate your warranty.

For outdoor installation, steel conduit or armoured cable is recommended.

## ELECTRICAL CONNECTIONS

All Electrical connection are stated on the terminal PCB (See Fig 2), Refer to the specifications at the end of this document for the input voltage requirements.

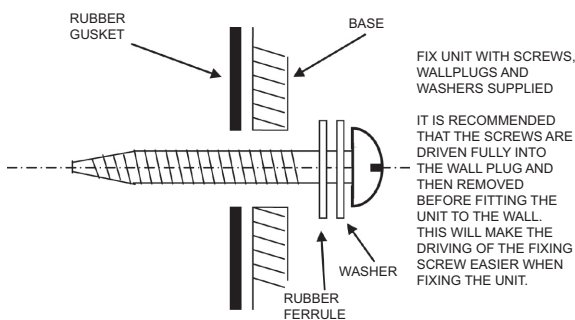


Fig. 1

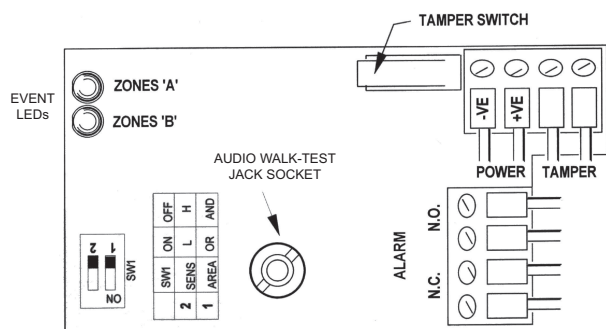


Fig. 2

**WARNING!!! DO NOT CONNECT 240/110V SUPPLY VOLTAGES TO ANY TERMINAL**

When the unit is operated by 12VDC;

Long cable runs between the power supply and the unit should not result in a total conductor resistance greater than 20 ohms (10 ohms per conductor). The voltage drop between the power supply and the detector should not be greater than 0.5 Volts. The voltage at the detector terminals should not be less than 11 Volts and not be higher than 16 VDC.

When the unit is operated by 24 VAC;

The voltage drop between the 24VAC source and detector terminals should not exceed 1VAC and input voltage should be between 22VAC - 26VAC at the detector terminals. For 24V models assume a max. of 60mA for voltage drop calculations. The conductor resistance of the cable should not exceed 16 ohms (8 ohms per conductor).

If screened cables are used, ensure that the screen is connected to the negative terminal at one end only.

## **NOTE:**

The metal housing and bracket of the detector is connected to negative supply terminal. This means that the power supply negative will be grounded at the detector. In some long distance or metal mounted installations, ground-loop currents may flow if the power supply is also grounded locally.

When mounting on metal poles or metal fixtures, ensure the unit is insulated for its mounting.

## **INITIAL TESTING**

During "Warm-up" the event LEDs are flashing for your reference. Please wait until they stop flashing. Alarm relays will not activate during "warm up".

**Allow at least ONE MINUTE before testing.**

With NO movement in the area, the event LEDs should be out and the alarm relay energised.

Movement in front of the unit should cause the LEDs to light and the relay to de-energise.

**NOTE: Re-set time is approximately 2 seconds.**

## **ALIGNMENT**

The top surface of the detector head should be used as an initial guide to alignment. The tops of the main upper zones are parallel with the top surface.

Accurate alignment is essential. Moving the head only one degree will move the end of the detection zones almost one metre. IF THE UNIT DOES NOT RESPOND TO MOVEMENT AT FULL RANGE, IT IS ALMOST ALWAYS BECAUSE THE ZONES ARE EITHER AIMING ABOVE THE TARGET OR HITTING THE GROUND TOO SOON.

## **USING THE AUDIO WALK TESTER OPM-WT**

The **OPM-WT** converts the voltage fluctuations at the detector into a changing audio tone. The tone pitch rises and falls as a zone is crossed. When the unit trips into alarm, the tone pitch suddenly rises in frequency and continues to fluctuate as the zones are crossed. With a little practice, it soon becomes clear where the zone boundaries and alarm points are.

The **LRP-3020**, **LRP-4010S** and **LRP-404S** are effectively two detectors in one housing, Alignment and Walk-testing are best carried out with one person walking across the zones whilst another observes the detection LEDs and listens to the OPM-WT audio Walk-tester.

With a two channel system, it is not practical to feed both movement signals to the audio Walk-tester therefore the Walk-test jack socket is connected to only one channel. As a result the audio fluctuations and alarm trip points may appear to be off-set from the centre line (depending on direction of walk).

When Walk-testing is completed, double check the tightness of the terminals and head clamping screws. Check the tightness of the main fixing screws. (it is essential that the unit is firmly mounted and unlikely to move or vibrate in windy conditions). Check cable gland is tightly fitted.

Remember, both channels must be activated **within a ten second period to produce** an alarm condition when the switch is in the **"AND"** position.

In some countries, where excessive climatic variations are expected, installers should use the Sun/Snow shield LRP Mini Hood. This will further protect detector from sunlight and snow, etc.

## PERFORMANCE CONSIDERATIONS

All P.I.R. detectors will exhibit changes in ultimate detection range. When an intruder moves across a zone he causes a change in the received infrared heat energy. If the temperature difference is large i.e. cold background - warm intruder, the change of energy and therefore alarm signal, is large. Conversely, a well covered intruder against a hot background will produce a small signal. The effect is that the actual final detection point will vary due to variations in background temperature, intruder size, and clothing and speed and direction of motion. The LRP-3020S is tested to 30 metres nominal. The LRP- 4010S / LRP-404S are tested to 40 metres nominal. In some conditions the range may exceed these distances; in other conditions (typically very hot) the ultimate range may be reduced.

## UNWANTED ALARMS

The sensors are designed to ignore a wide range of hazards which affect P.I.R. detectors when located outdoors. The heavy metal casing resists sudden temperature changes. The light paint colour keeps internal temperatures low and the comprehensive sealing ensures a draught-free environment for the precision temperature sensors. The most likely cause of unwanted alarms will usually be animals. Over ranging (detection's beyond area to be protected), movement of foliage within the zones and unstable mounting surfaces.

Enclosed is a blanking label which may assist in reducing unwanted alarms.

LRP-3020S LRP-4010S blanking label

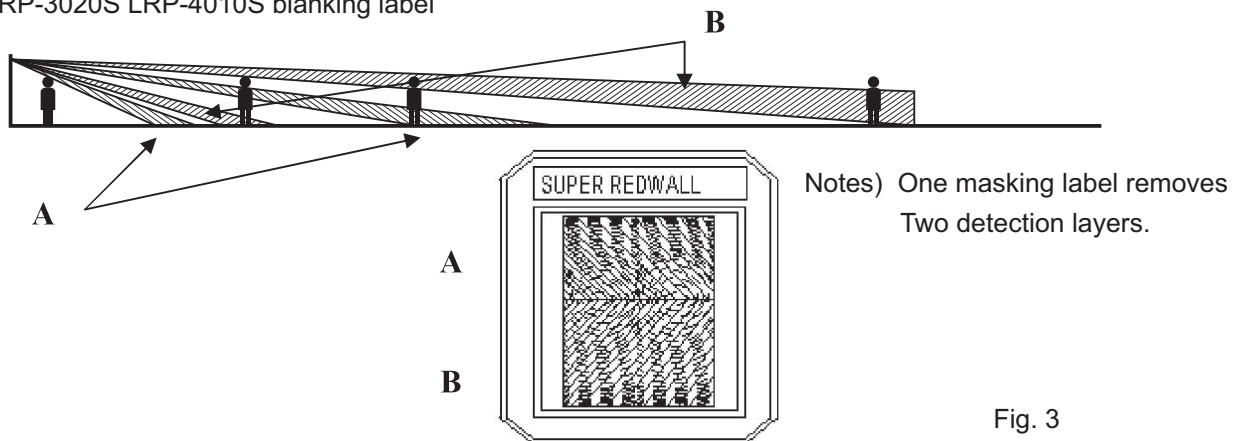


Fig. 3

LRP-404S blanking label

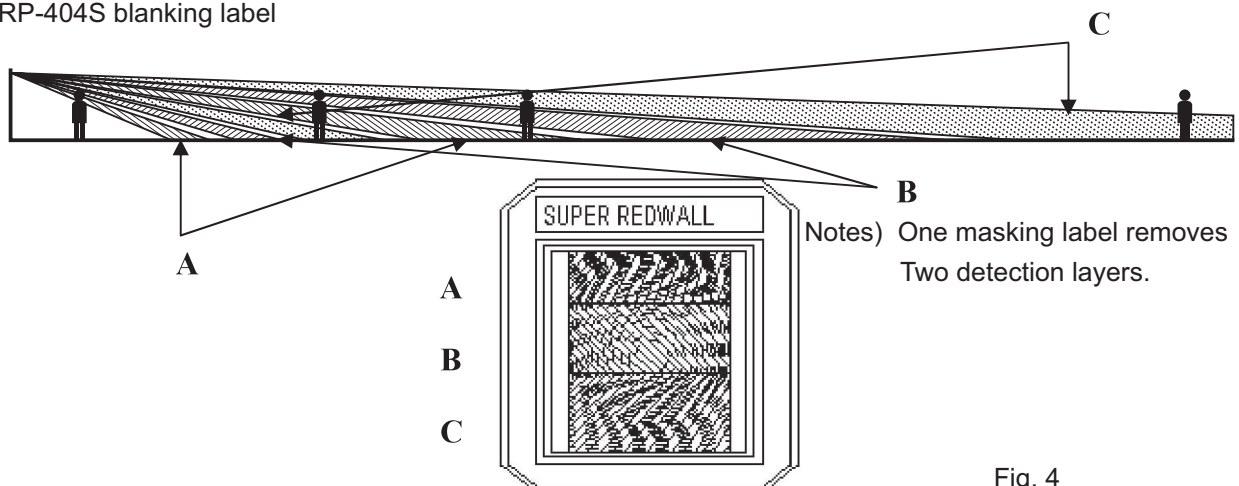


Fig. 4

## **SPECIFICATIONS LRP-3020S**

Model	LRP-3020S	
Power Input	11-16VDC	22-26VAC
Current Draw	25mA (Max) at 12VDC	60mA (Max) at 24VAC
Detection Method	Passive Infrared	
Range	30 x 20 m (100 ft. x 65 ft.)	
Detection zones	96 Zones (48 pairs)	
Mounting Height	2.3 m (7.6 ft.)	
Sensitivity Selection	High / Low	
Logic Selection	AND / OR	
Alarm Period	Approx. 2 sec	
Alarm Output	2 relays outputs N.C/N.O 30VDC 1A (max)	
Tamper Output	N.C opens when cover, head removed 28VDC 0.1A	
Warm-up Period	Approx. 60 sec (LEDs blinking during warm-up period)	
Walktest Indication	Visual : LED x 2 Audio : Sounder Available (OPM-WT) Optional	
Operating Temperature	-40 to +60°C	
Weight	850g	
IP Rating	IP65 (Wiring hole to be sealed)	
Finish	White Powder Coat	

### **Coverage Pattern**

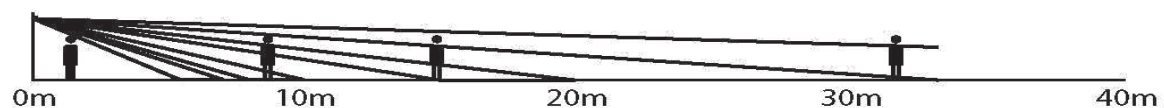
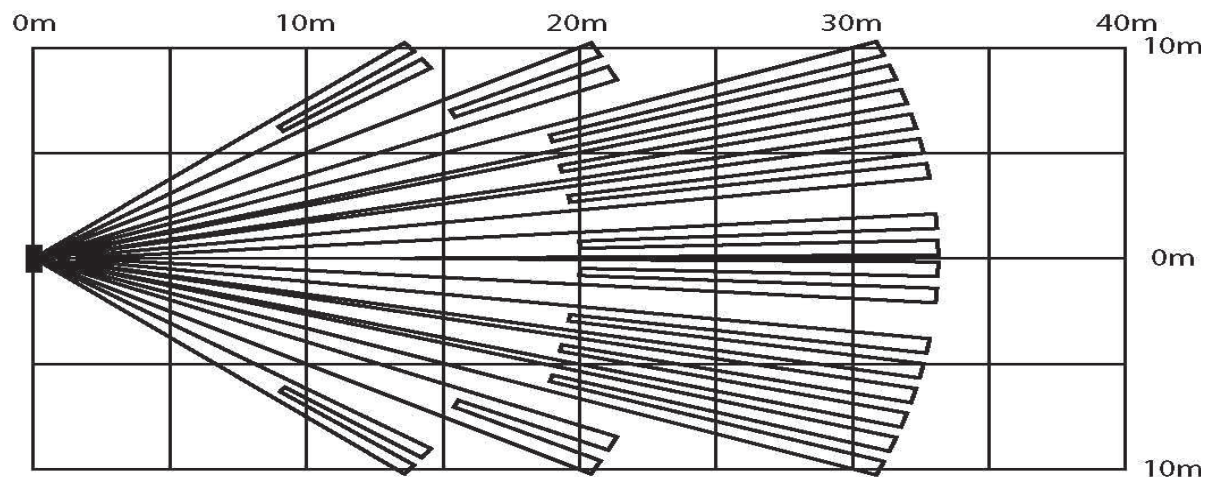


Fig. 5

## **SPECIFICATIONS LRP-4010S**

Model	LRP-4010S	
Power Input	11-16VDC	22-26VAC
Current Draw	25mA (Max) at 12VDC	60mA (Max) at 24VAC
Detection Method	Passive Infrared	
Range	40 x 10 m (130 ft. x 30 ft.)	
Detection zones	32 Zones (16 pairs)	
Mounting Height	2.3 m (7.6 ft.)	
Sensitivity Selection	High / Low	
Logic Selection	AND / OR	
Alarm Period	Approx. 2 sec	
Alarm Output	2 relays outputs N.C/N.O 30VDC 1A (max)	
Tamper Output	N.C opens when cover, head removed 28VDC 0.1A	
Warm-up Period	Approx. 60 sec (LEDs blinking during warm-up period)	
Walktest Indication	Visual : LED x 2 Audio : Sounder Available (OPM-WT) Optional	
Operating Temperature	-40 to +60°C	
Weight	850g	
IP Rating	IP65 (Wiring hole to be sealed)	
Finish	White Powder Coat	

### **Coverage Pattern**

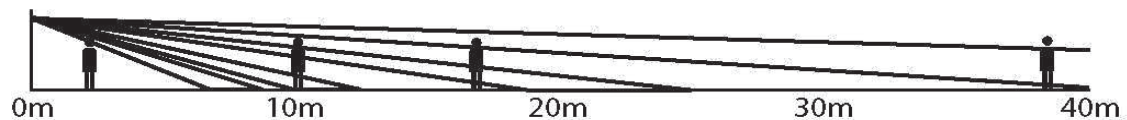
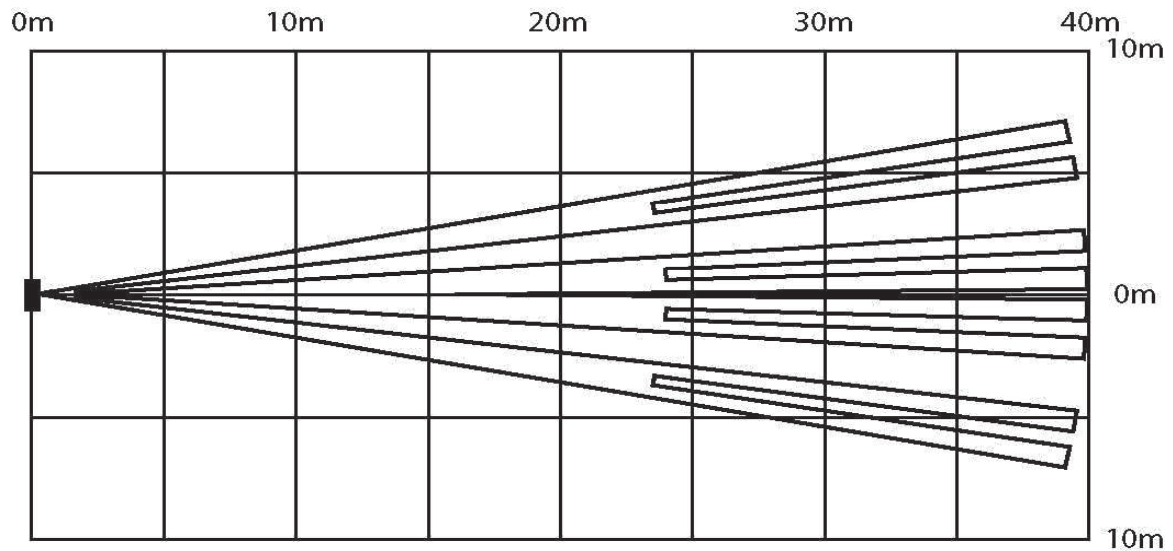


Fig. 6



## **SPECIFICATIONS LRP-404S**

Model	LRP-404S	
Power Input	11-16VDC	22-26VAC
Current Draw	25mA (Max) at 12VDC	60mA (Max) at 24VAC
Detection Method	Passive Infrared	
Range	40 x 4 m (130 ft. x 13 ft.)	
Detection zones	24 Zones (6 Quad Layers)	
Mounting Height	2.3 m (7.6 ft.)	
Sensitivity Selection	High / Low	
Logic Selection	AND / OR	
Alarm Period	Approx. 2 sec	
Alarm Output	2 relays outputs N.C/N.O 30VDC 1A (max)	
Tamper Output	N.C opens when cover, head removed 28VDC 0.1A	
Warm-up Period	Approx. 60 sec (LEDs blinking during warm-up period)	
Walktest Indication	Visual : LED x 2 Audio : Sounder Available (OPM-WT) Optional	
Operating Temperature	-40 to +60°C	
Weight	850g	
IP Rating	IP65 (Wiring hole to be sealed)	
Finish	White Powder Coat	

### **Coverage Pattern**

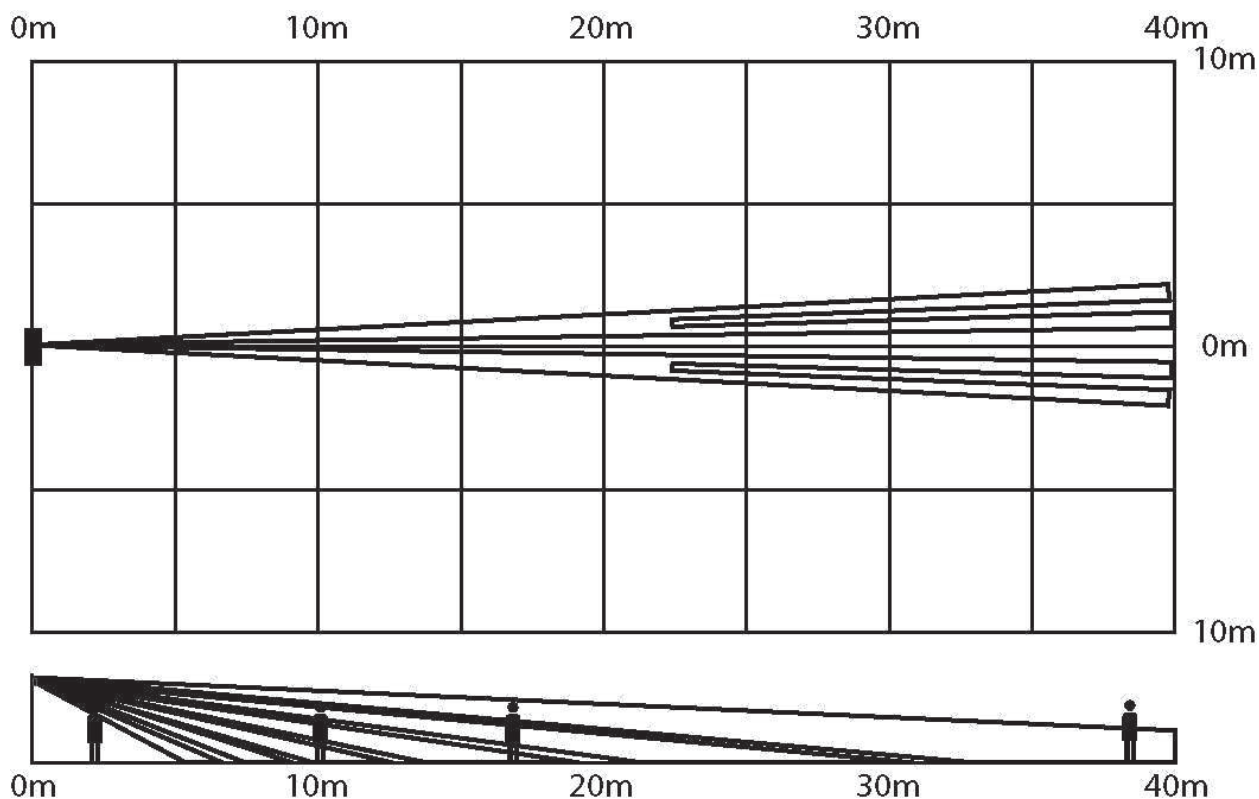


Fig. 7

## **DIMENSIONS**

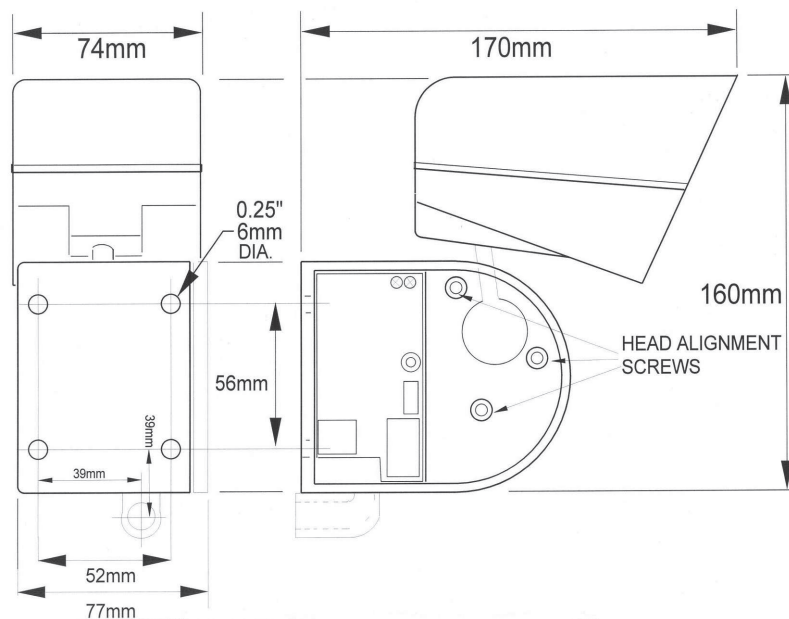


Fig. 8

## **ACCESSORIES**

LRP MINI HOOD	– Hood for MINIRED to protect against sunlight and snow
LRPSCA	– For a pole mount
LRPGUARD	– Vandal resistant guard
OPM-WT	– Audio Walk Tester for REDWALL and REDWAVE

**Due to constant improvement, specifications are liable to change without notice.**

### **NOTE**

These units are designed to detect movement of an intruder and activate an alarm control panel. Being only part of a complete alarm system, we cannot accept responsibility for any damages or other consequences resulting from an intrusion. These products conform to the EMC Directive 89/336 EEC.



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