

The unit may also be used to echo all Light Symphony commands, which considerably extends the wireless range and reliability of the system.

REPEATER - TESTING & SET-UP

1. The adjacent to 'Learn Repeater' button (LED2) shows the Repeater's status. If it is OFF, the repeater function is disabled. If it's on the repeater function is enabled and will blink when a command is received and repeated.
2. For correct operation each repeater must be assigned a unique number from 1 to 5. Where fitted, the Base-Station is always repeater #1. Repeaters must be installed so *adjacently* numbered units are within reliable range of each other. i.e. Repeater #2 must be in reliable range of *both*, repeater #1 (base-station) and repeater #3 etc.
3. To enable the repeater and to program its number, press and hold the 'Learn Repeater No.' button for approx. 5 seconds, until LED2 flashes.
4. Next, press a number key on the remote control from 1 to 5. The unit will beep to acknowledge the code has been stored.

(To disable the repeater function, store repeater number 0 by using the "Garden Off" key on the remote.)

REPEATER RANGE TEST

The repeater must be in good range of adjacent numbered repeaters (see 2 above) *and* the lighting it is controlling. The range can easily be tested using the 'Learn Repeater No.' button;

Each press of the 'Learn Repeater' button will alternately transmit Garden On, Garden Off commands. Use this test to confirm all Lighting Control Modules respond to the Repeater's on/off commands.

Where fitted, also check that the base-station and other repeaters are also 'seeing' the on/off commands.

The base-station can be checked by watching its LCD display. The display should show "ALL ON/OFF" each time the 'Learn Repeater' button is pressed.

Other repeaters will indicate a command has been received by blinking their Repeater LED2.

MAINTENANCE

To prevent premature failure of the unit please take note of the following recommendations;

1. Never leave a module outdoors unless the lid is properly secured and the rubber gasket installed.
2. Ensure the 4 lid-screws are properly tightened after installation.
3. A smear of (Silicon) grease around the rubber gasket will protect it and help guarantee a long reliable life.

SPECIFICATIONS

Supply	220-240V AC / 50Hz
Trigger Input	12VDC Driveway Beam Sensor
Sensing Range	5 – 100M
Weather Resistance	IP66
Physical	174 x 86 x 77mm / 1150g
Ambient Temp.	-25°C to +55°C

INTRODUCTION

The long range beam-sensor can wirelessly trigger a lighting zone for 1-15 minutes when a person or vehicle interrupts the invisible beam.

The sensor can either be used to switch on a lighting circuit or trigger a circuit to full brightness for a timed period.

The unit is designed for outdoor installation but take note of the safety instructions below.

It also contains a signal-repeater, which echo's wireless commands from other Light Symphony transmitters, which extends their range and reliability.

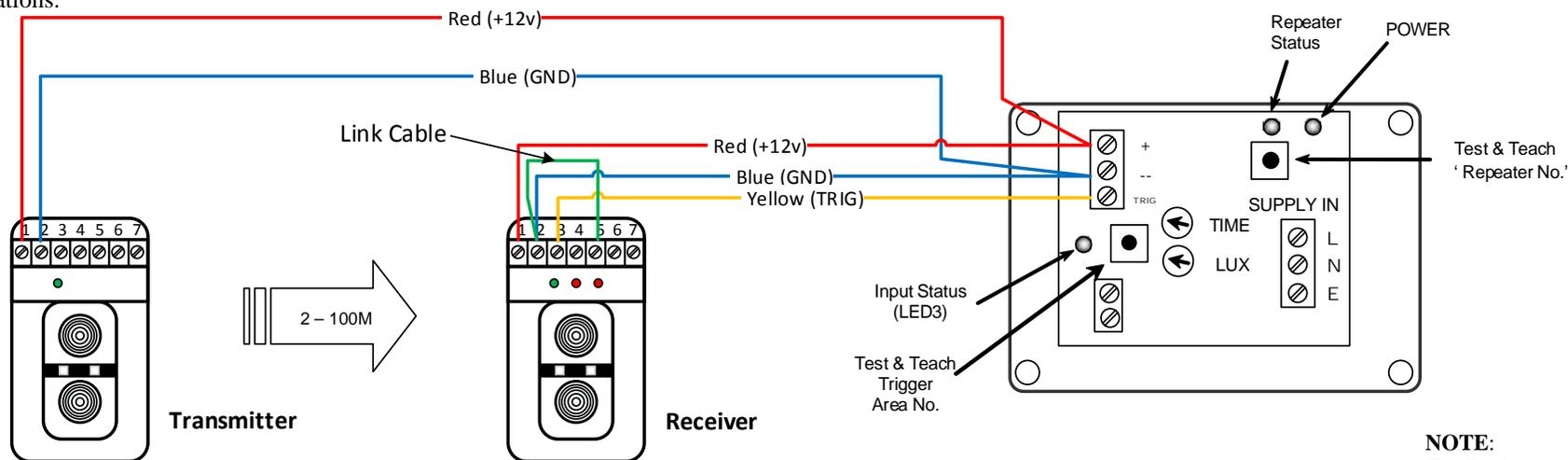
SAFETY INSTRUCTIONS

REMEMBER ELECTRICITY CAN KILL IF IN DOUBT CONSULT A QUALIFIED ELECTRICIAN

1. Mount the unit in a safe position to avoid possible damage by mowers or other garden tools. This unit must not be buried without proper protection.
2. The unit requires connecting to a properly installed electrical supply with an EARTH.
3. The electrical supply must be protected at source by an 'Earth Leakage' circuit breaker and suitably low rated fuse (0.5A per 100W's of load).
4. Where 230V power is routed outside, national wiring regulations must be adhered to. For UK installations rugged 'Concentric' type cable is recommended above ground.
5. Where 230V power cable is buried, 'Steel Wire Armoured' cable must be used. Buried cables must be *at least* 450mm (18") below the surface.
6. BURN HAZARD: Take care not to touch hot lamps and keep children away.
7. Always isolate the electrical supply before removing the cover.

ELECTRICAL INSTALLATION

The unit must be installed by a qualified electrician working to national Electrical Regulations.



Ensure all cables enter the enclosure from below or have a 'drip-loop'.

Install the Sender and Detector units facing each 2-10 meters apart at least 20cm above the ground.

TESTING & SET-UP

1. LED3 shows the input status. It will blink when the beam is broken. It will blink briefly if it's daytime and will blink slowly if it's dusk (controlled by LUX setting and ambient light).
2. The unit can be programmed to trigger the Whole Garden (ALL) or an individual Area. The remote control (part no. LS30050WRC) is used to teach the control function. To teach the triggered Area, press and hold the "Learn Trig" button for approx. 5 seconds, until LED3 flashes.
3. Press an 'Area' key on the remote control to teach the required lighting area e.g. Area 1. The unit will beep to acknowledge the function has been stored. (use 'Garden Off' to disable the Trigger input).
4. To test the unit, carefully adjust the LUX setting fully clockwise (light), because the unit only transmits when the ambient light-level is below this setting. Set the TIME adjustment fully anti-clock-wise (1 minute).
5. Breaking the beam or briefly pressing the 'Learn Trig' button will trigger the lighting area for a short time. This allows the range and function to be confirmed.
6. Finally, adjust the LUX and TIME settings to your preference. The Test button will not work if the LUX setting is below the ambient light level. This feature enables the LUX level to be adjusted and tested. Note: the translucent lid will have little effect to the LUX setting.

WELCOME HOME & SAVE POWER

Where dimmable lighting is used, an impressive welcoming feature is possible by setting the driveway lighting at a lower ambient level, (e.g. 20%) and using this sensor to trigger the lighting to 100% when someone arrives. (The low-level lighting can be switched on manually or by the base-station's dusk/dawn timer).

The affect is created by setting the drive-way 'Area' at a low level when configuring the lighting controller. For example;

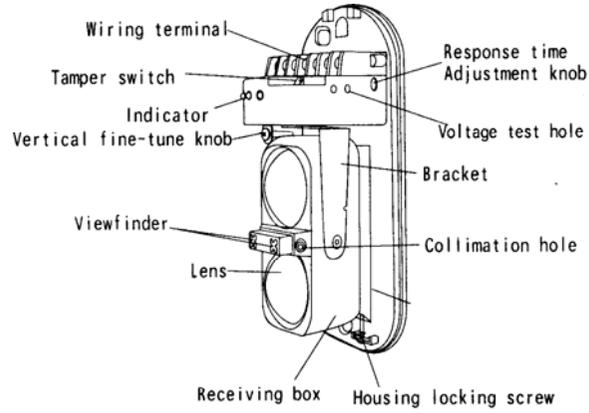
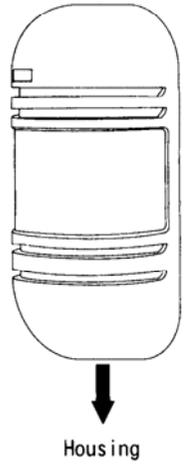
1. Double-tap the lighting controller's lid to switch on the drive-way lights (will also open its memory for 15 seconds).
2. Press the DIM-DOWN key on the remote control to set the desired low lighting level.
3. Press the 'Area' number button on the remote to store the Area e.g. "9". (Remote button '9' now switches the drive-way lights on & off at the dimmed level)
4. Teach the beam-sensor to trigger Area 9 by pressing and holding the "LEARN TRIG" button for 5 seconds, then pressing button '9' on the remote control. It will beep to confirm it's learnt the code.

If the lights are off, the beam sensor will switch them on. If the lights are already on and at a low level, then the beam sensor will trigger them to full brightness. The remote control may be used to over-ride the beam sensor at any time.

NOTE:

The Earth screw in the unit bonds all the metal parts to ground including the Steel Wire Armouring (via the metal chassis).

I . Part Name

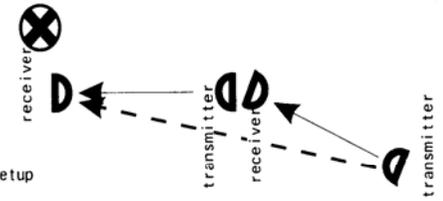
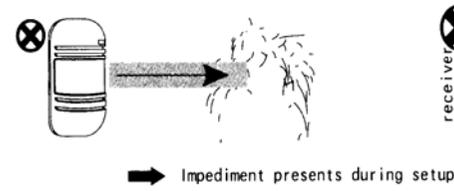


● POWER: Transmitting indicator

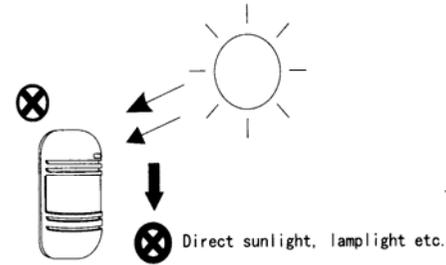
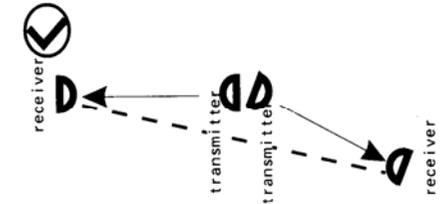
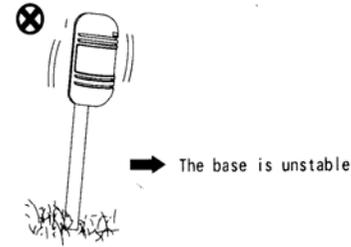


- LEVEL: Lightness of the indicator increases with the accuracy of beam alignment.
- ALARM: The indicator turns on when alarm presents.
- GOOD: The green indicator turns on when the beam aligns with the receiver. If fails to align, the indicator will off.

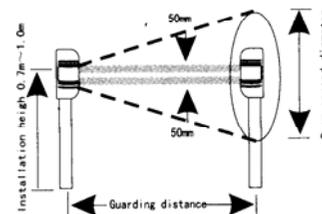
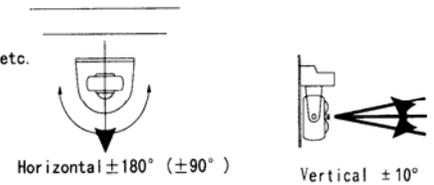
II . Precautions for setting



Multi sensors may be used for long-distance guarding. Please install according to the below diagram to avoid interference between beams.



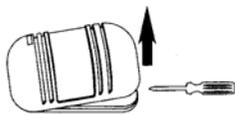
● Adjustable angle: horizontal $\pm 90^\circ$
vertical $\pm 10^\circ$



Guarding distance	Beam spread diameter
100m	2.1m

III Setting procedure

1. Remove the cover

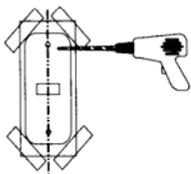


● Installation of fixed bracket

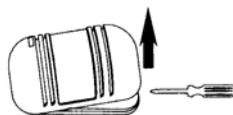
1. Drill a hole on the bracket and extend out the cable from it.



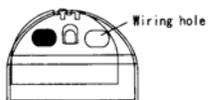
2. Attach the paper stencil onto the location where the equipment is to be mounted, and drill the holes in the positions on its mark.



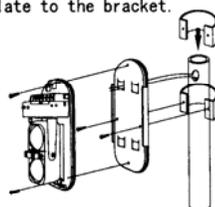
2. Remove the cover.



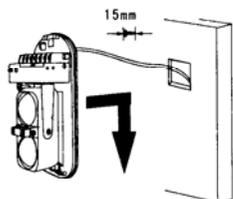
3. Put the cable through the hole for wiring.



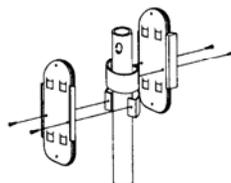
3. Fasten the base-plate to the bracket.



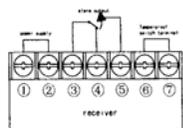
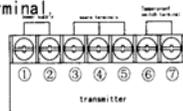
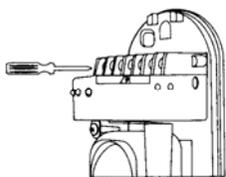
4. Fix the main body onto the wall



(Back-to-back installation guiding diagram)



5. Connect the cable to the wire terminal.



Wiring distance between transmitter and receiver

Wire size	Distance	Voltage DC13.8V	DC24V
0.5mm ² (φ 0.8)		300m	300m
0.75mm ² (φ 1.0)		400m	800m
1.25mm ² (φ 1.2)		700m	1400m
2.0mm ² (φ 1.6)		1000m	2000m

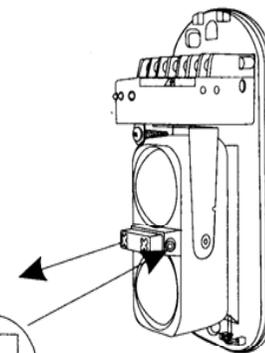
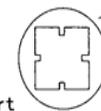
6. Put on the cover after adjusting the response time of the beam.

IV Beam alignment

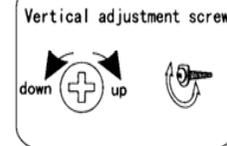
1. Remove the cover and connect power.

2. Observe the collimation effect at a distance of 5cm from the viewfinder.

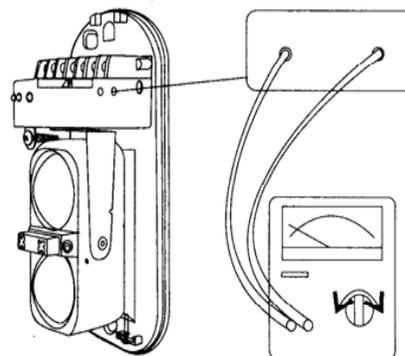
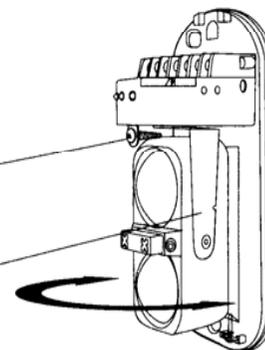
3. Adjust the vertical adjustment screw and the horizontal angle adjusting wheel in order that the image of opposite detector falls into the central part of the viewing hole. At this time, the GOOD indicator 5cm of receiver shall light up; if not, adjust it repeatedly.



The accuracy of beam alignment turns higher; the red LEVEL indicator becomes brighter.



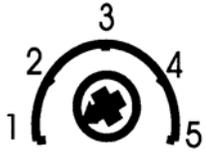
horizontal adjustment bracke



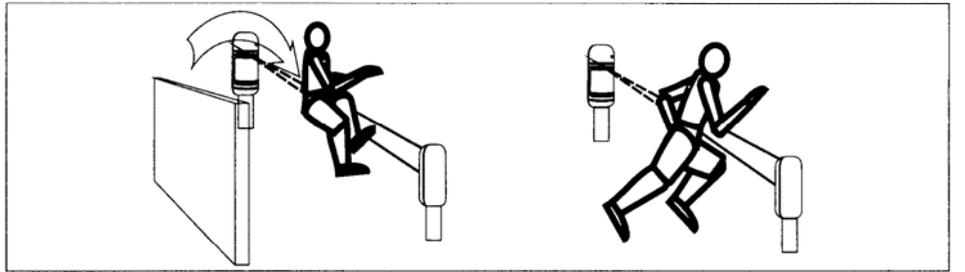
1. Insert the test pen into the test hole (please note the +, - polarity)
2. First adjust the horizontal angle until the test hole voltage output maximizes. Then adjust the vertical angle by the same way till the voltage reaches the value above that of below diagram.
3. If it can't reach 1.1V or higher voltage, the transmitter and receiver shall be regulated again.

Multimeter selects DC 10V

V Beam response time adjustment



Please see the diagram to adjust the response time of the receiver. Usually, the time set shall be less than the time when the intruder crosses the guarding area.



High speed:1

Fast running(6.9m/s):2

Fast walking(1.2m/s):3

Normal walking(0.7m/s):4

Slow walking(0.4m/s):5



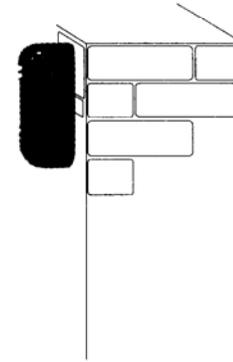
VI. Physical test

Walking test is required after the setting, physical test in accordance to below diagram.

	State	Signal
Transmitter	Transmitting	The 2 indicators of green LED light up
Receiver	Guarding	GOOD LEVEL indicators light up
	In alarm	The red ALARM indicator light up

IX. Recommended installation guide & physical appearance and dimension

Recommended installation

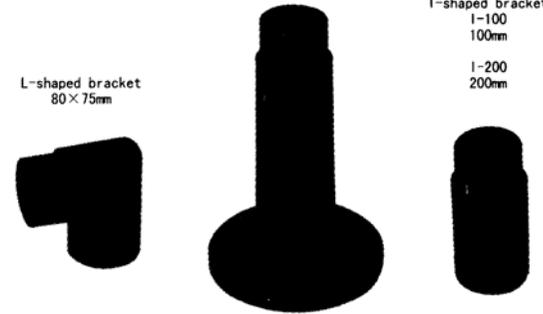


T-shaped bracket
T-100
100×120mm
T-200
200×120mm

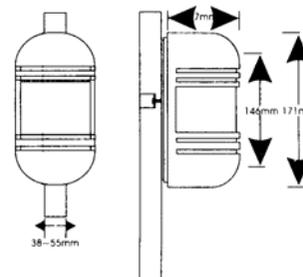
Installation bracket

L-shaped bracket
80×75mm

I-shaped bracket
I-100
100mm
I-200
200mm



Dimensions



The product has got the 3C and CE approval already and is now applying for the UL approval.