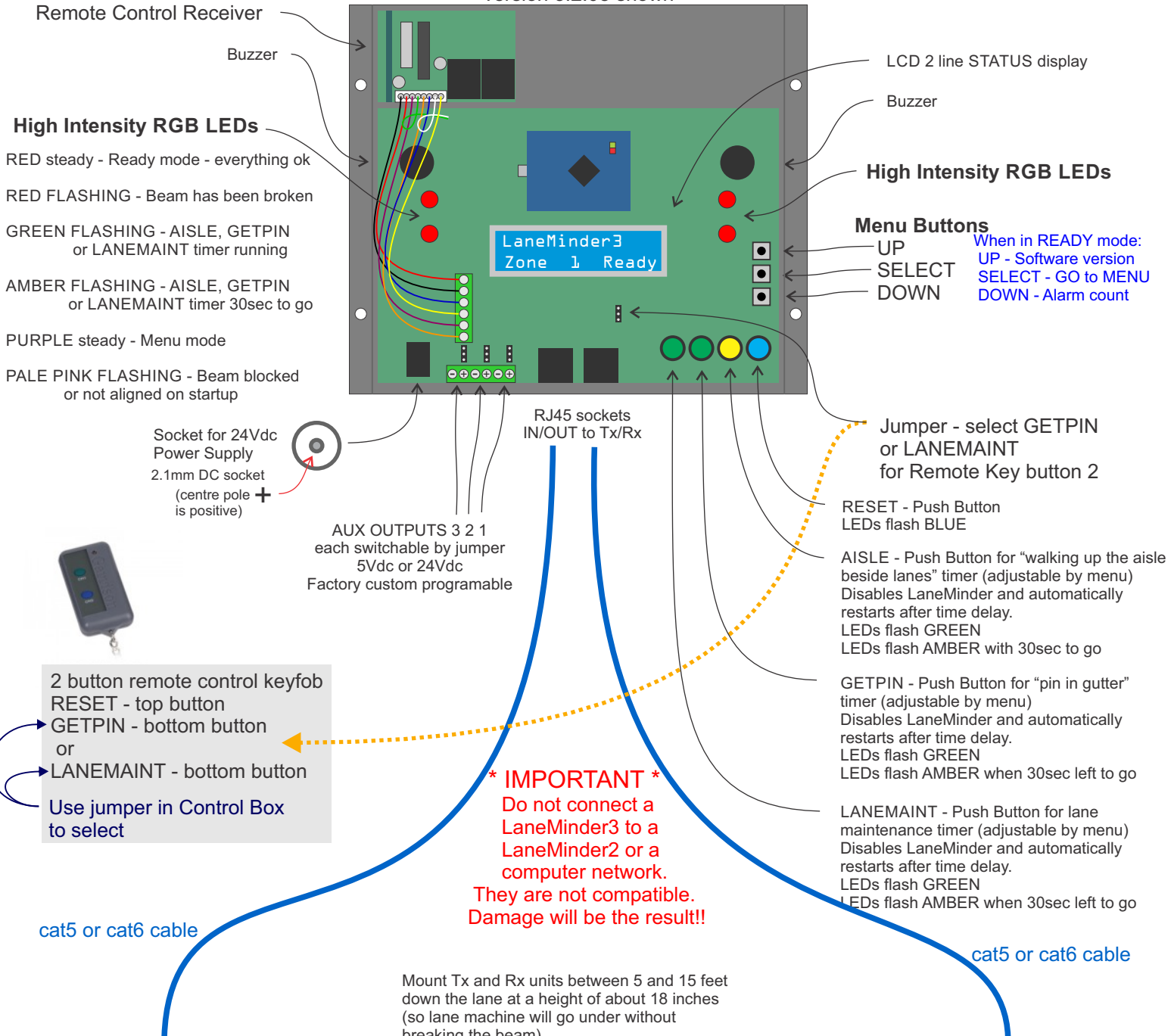


LaneMinder3

Revision 20240902

Control Box version 3.2.08 shown



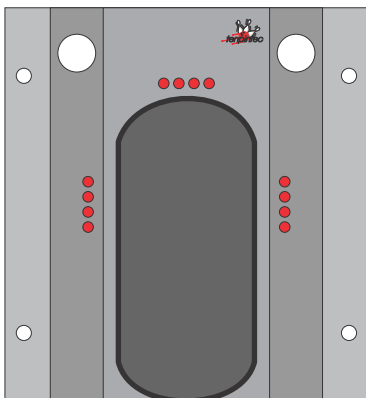
Mount Tx and Rx units between 5 and 15 feet down the lane at a height of about 18 inches (so lane machine will go under without breaking the beam)

It does not matter which side Transmitter (Tx) or Receiver (Rx) goes.

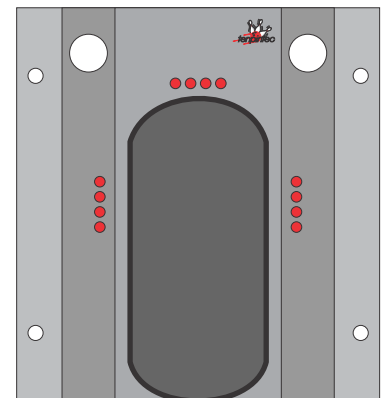
LANE AREA

LEDs on RECEIVER will FLASH PALE PINK if IR beam is blocked or not aligned at STARTUP.

DUAL BEAM



Receiver



Transmitter

LaneMinder3

Infrared Transmitter and Receiver

version 3.2.06 shown

Connection to LaneMinder3 ControlBox
and other modules by cat6 and serial data
(do not connect to a computer network)

AISLE button

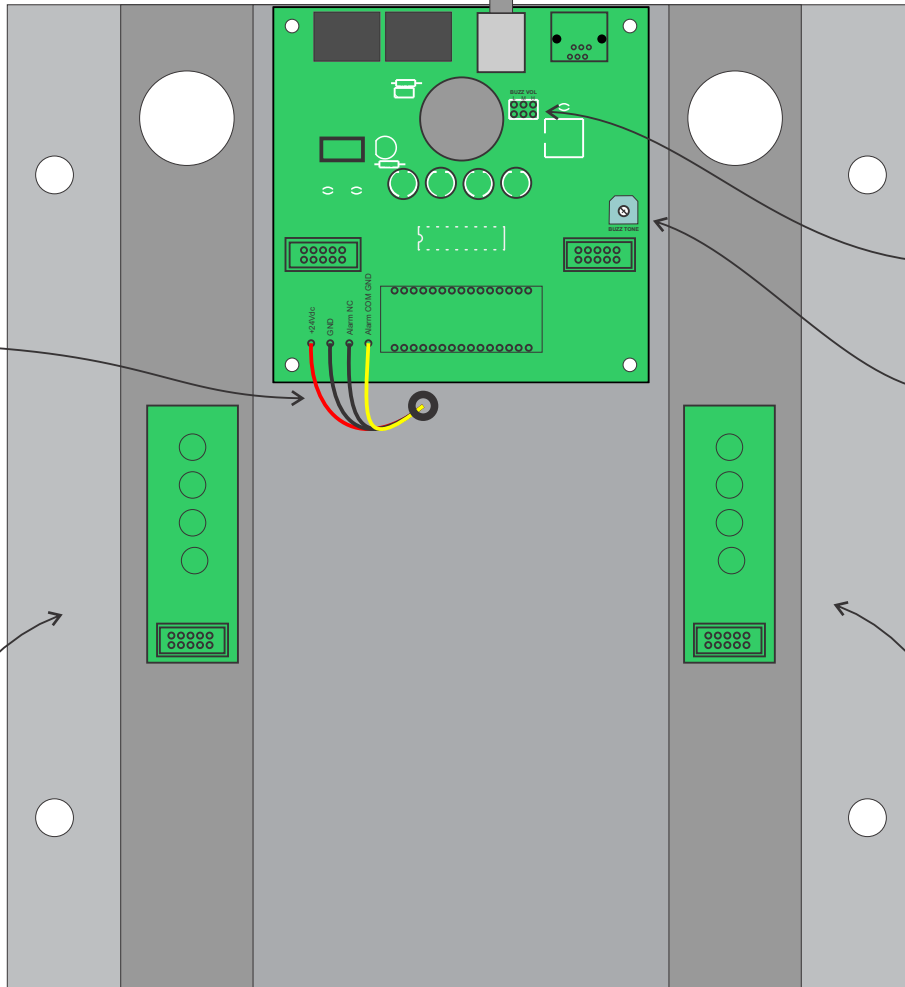
Connection to
Aisle and Reset module

Transmitter has
RED and BLACK wires
Receiver has
RED, BLACK
and YELLOW wires

Buzzer volume
Move the jumper to select
low, medium and high

Buzzer tone
Adjust the potentiometer
to adjust the tone

*Not functional from
software version 9*



REAR VIEW

On startup, LEDs flash
a number of times to indicate zone number (eg 2 times = Zone 2)
short pause and then
a number of times to indicate software version (eg 9 times = version 9)



LaneMinder3

Installation

Mount infrared (IR) Transmit (Tx) and Receive (Rx) modules on walls or posts at opposite ends of the LANE AREA between 5 and 15 feet down the lanes at a height of about 18 inches to 2 feet above the lane surface. The lane machine should go under the beam and not trigger it.

Situate the LaneMinder control box on a convenient wall inside the machine room, at the main reception counter or other suitable position.

Use cat5 or cat6 cables to connect the IR Tx and Rx modules to the RJ45 sockets at the bottom of the LaneMinder3 Control Box. Either socket can be used for Tx or Rx.

Align the Tx and Rx unit approximately by eye.

Plug the 24Vdc power supply into the socket at the bottom left of the LaneMinder3 Control Box, plug into a wall outlet and turn on. (Do not turn on until all cat5 or cat6 cables are plugged in)

Align the IR beams (the units are dual beam) according to the instructions on pages 5 to 8. When the IR beams are aligned correctly, the LEDs on the modules will be ON (READY mode) - All LEDs are RED.

If the LEDs FLASH pale PINK when the unit is first powered up, this means that the beams are not aligned or the beam is otherwise blocked.

When alignment is achieved, LEDs will show BLUE (Reset) and then go into 'READY' mode.

Operation

When the Laneminder3 is first powered up, the ControlBox display and LEDs will initially indicate **READY**. At the same time, the Tx and Rx module LEDs will flash a number of times (indicating zone number), pause briefly, then flash again for a number of times (indicating software version).

If the beam is clear and aligned at startup, the LaneMinder3 will go to **READY** mode (red LEDs on at about 30% brightness). If the beam is blocked or misaligned at startup, the LaneMinder3 will go to **StartupNoBeam** mode (pale pink LEDs, flashing on Rx and steady on Tx).

The LaneMinder3 will go to **READY** mode when the beam is cleared or realigned.

When the LaneMinder3 is **ON** and in the **READY** mode, the **LEDs** in the Control Box and the **LEDs** on the Tx and Rx modules will be **RED** at 30% brightness. The LaneMinder3 is ready to detect a person walking down the lanes.

When the beam is broken - **ALARM MODE**

Control Box - warning buzzers sound and **LEDs FLASH RED**

Tx and Rx modules - warning buzzer sounds and **LEDs FLASH RED**

GETPIN delay: Pressing the GETPIN button on the Control Box or Remote Key shuts the beam off for approximately **2 minutes** (adjustable by menu) to allow staff to go down the lane to attend to escaped pins etc without setting off the LaneMinder3.

LEDs on the Control Box, Tx and Rx modules will **FLASH GREEN**.

All the LEDs will **FLASH AMBER** when the count-down timer gets to **30** seconds.

At the end of the count-down, the LaneMinder3 automatically resets to **READY** mode.

LANEMAINT delay: Pressing the LANEMAINT button on the Control Box or Remote Key shuts off the beam for approximately **120 minutes** (adjustable by menu) to allow staff to walk in the lane area to perform lane maintenance without setting off the LaneMinder3.

LEDs on the Control Box, Tx and Rx modules will **FLASH GREEN**.

All the LEDs will **FLASH AMBER** when the count-down timer gets to **30** seconds.

At the end of the count-down, the LaneMinder3 automatically resets to **READY** mode.

AISLE delay: Pressing the **button** (if fitted) on top of either of the Tx or Rx modules will shut the beam off for approximately **60 seconds** to allow staff to walk down the side aisles of the centre without setting off the LaneMinder.

LEDs on the Control Box, Tx and Rx modules will **FLASH GREEN**.

All the LEDs will **FLASH AMBER** when the count-down timer gets to **30** seconds.

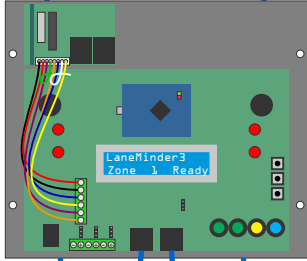
At the end of the count-down, the LaneMinder3 automatically resets to **READY** mode.

RESET cancels **ALL**. All **LEDs** will **FLASH BLUE** for 1 second and LaneMinder3 will go to **READY** mode.



LaneMinder3

LaneMinder3 Standard layout (for each zone of the bowling centre)

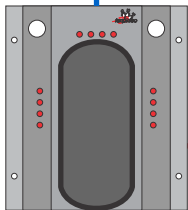
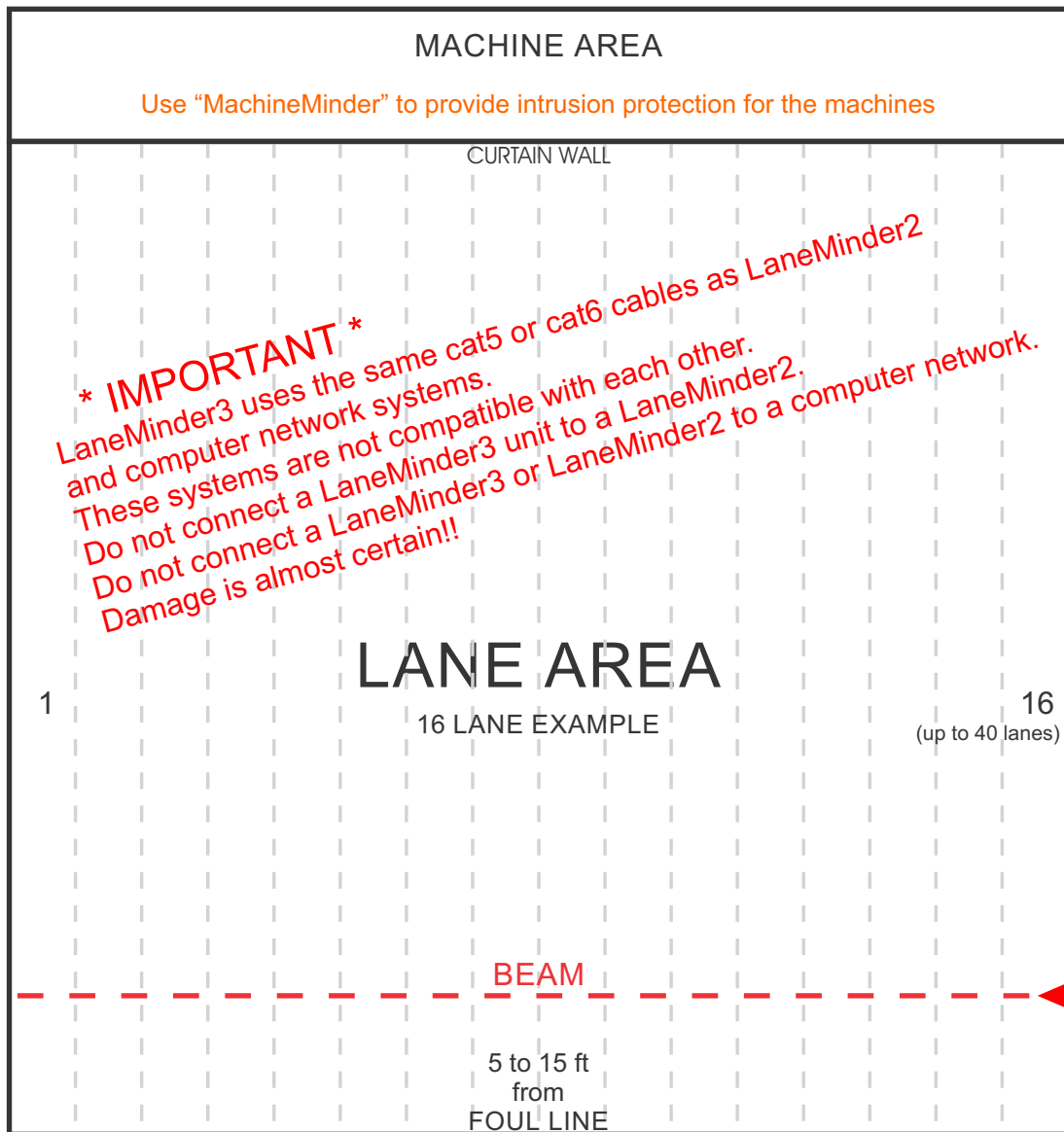


Mount Control Box on a convenient wall in the machine room behind the aisle door or at the front desk.

Each lane zone in the bowling centre requires one LaneMinder3 Control Box, one Tx and one Rx. This differs from the LaneMinder2, where one Control Box could be configured to control two zones.

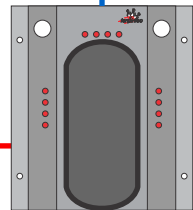
cat5 or cat6 cable

cat5 or cat6 cable



Rx or Tx

Mount Tx and Rx on side walls or posts beside lanes high enough for a lane machine to pass under beams



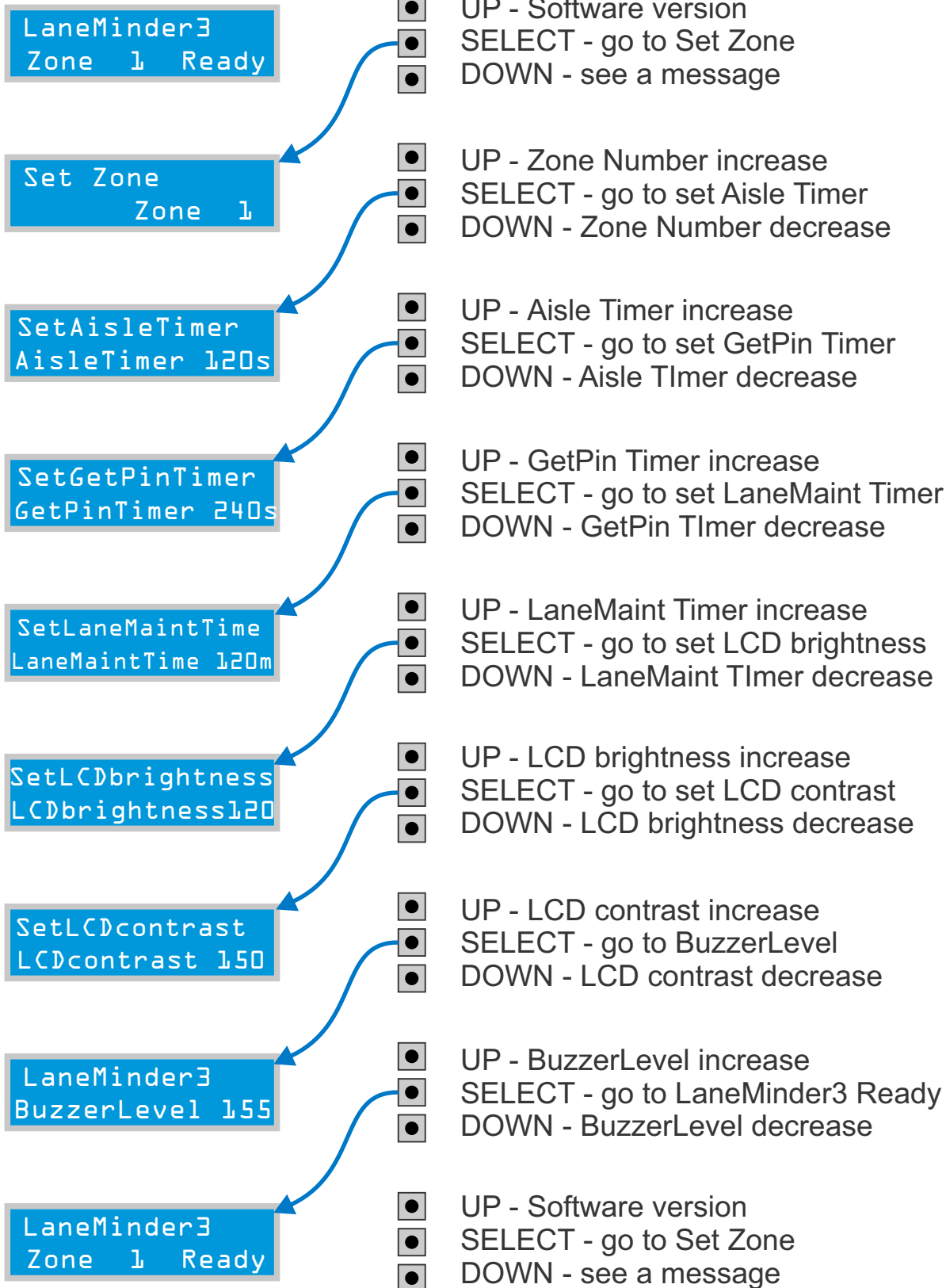
Tx or Rx

Mount Tx and Rx on side walls or posts beside lanes high enough for a lane machine to pass under beams



LaneMinder3

Menu Navigation





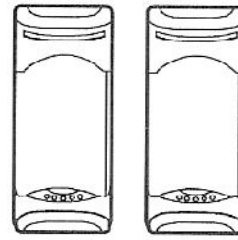
LaneMinder3

SCS Infra-red

Twin Photoelectric Beam Sensors PB-10HD/25HD/30HD/60HD/80HD/120HD

Features:
 Range—

- PB - 10HD :Outdoor 33ft.(10m),Indoor 66ft.(20m) (No laser)
- PB - 25HD :Outdoor 83ft.(25m),Indoor 166ft.(50m) (No laser)
- PB - 30HD :Outdoor 100ft.(30m),Indoor 200ft.(60m) (With laser)
- PB - 60HD :Outdoor 200ft.(60m),Indoor 400ft.(120m) (With laser)
- PB - 80HD :Outdoor 260ft.(80m),Indoor 520ft.(160m) (With laser)
- PB-120HD :Outdoor 400ft.(120m),Indoor 800ft.(240m) (With laser)



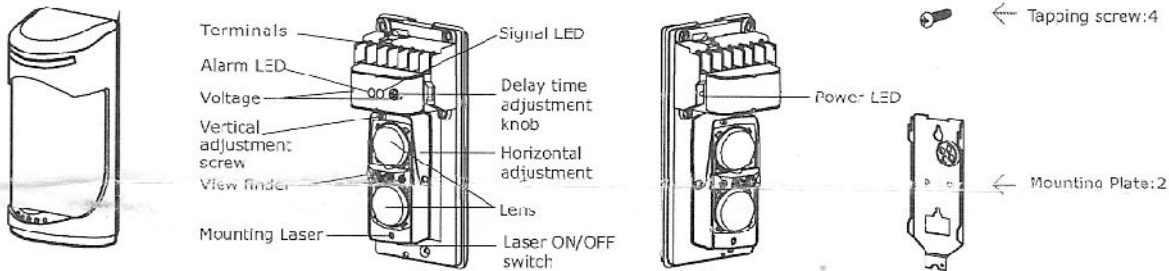
INSTALLATION MANUAL

- Twin beam provide reliable perimeter security minimizing false alarms from falling leaves,birds,etc.
- Lensed optics reinforce beam strength and provide excellent immunity to false alarms due to rain,snow,mist,etc.
- Weatherproof,sunlight-filtering case for indoor and outdoor use.
- Anti-frost system so that beam functions even in extreme conditions.
- Automatic input power filtering with special noise rejection circuitry.
- N.C/N.O. Alarm output.
- N.C. Tamper circuit included.
- Non-polarized power inputs.
- Quick,easy installation with built-in laser beam alignment system.

1.PARTS DESCRIPTION

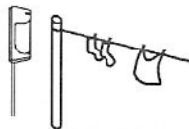
[COVER]

[RECEIVER]



2.CAUTIONS ON INSTALLATION

Do Not



◆ Remove all abstractions (trees,clothes,lines,etc.) between Transmitter and Receiver.



◆ Avoid strong light from the sun, automobile headlights etc.directly shining on Transmitter/Receiver. When strong light stays in optical axis for a long time,it does not cause malfunction but will affect the product life.



◆ Do not install the unit on places where it may be splashed by dirty water or direct sea spray.

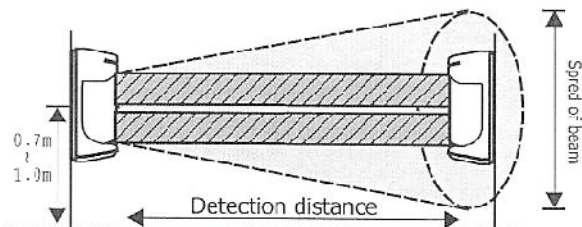


◆ Do not install the unit on unsteady surfaces.

Expansion of beam

The protection distance(between Transmitter /Receiver)should be placed in the rated range.

Model	Detection distance	Spred of beam
PB-10HD	10m(33 ft.)	0.6m(2.0 ft.)
PB-25HD	25m(83 ft.)	0.9m(3.0 ft.)
PB-30HD	30m(100 ft.)	0.9m(3.0 ft.)
PB-60HD	60m(200 ft.)	1.8m(6.0 ft.)
PB-80HD	80m(260 ft.)	2.4m(8.0 ft.)
PB-120HD	120m(400 ft.)	3.6m(12.0 ft.)

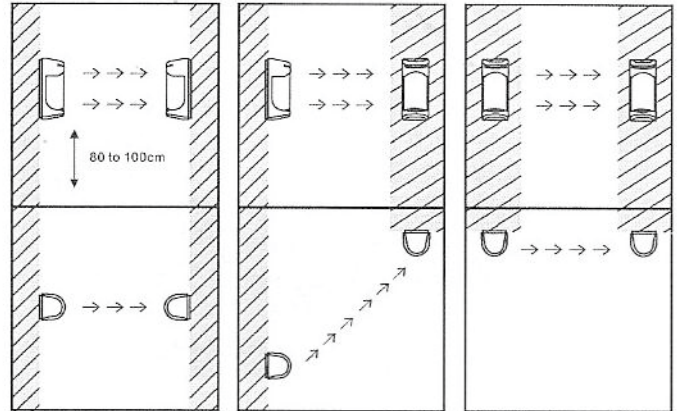
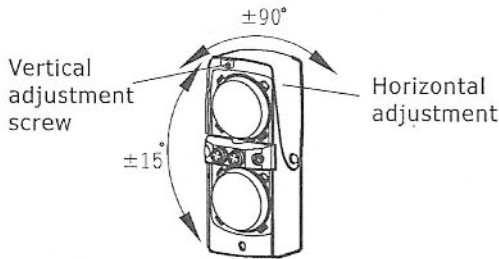


LaneMinder3

SCS Infra-red

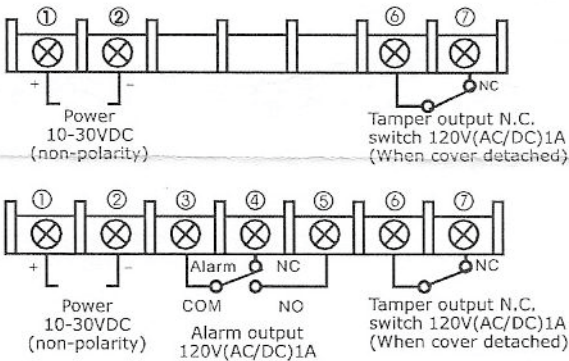
Position of installation

The photoelectric beam lens can be adjusted horizontally $\pm 90^\circ$, and vertically $\pm 15^\circ$. This allows much flexibility in terms of how the transmitter and receiver can be mounted. Install at a distance of 32" to 39" (80 to 100cm) above the ground for most situations.



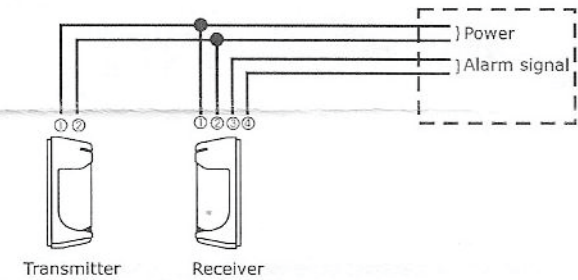
3. WIRING

Wiring

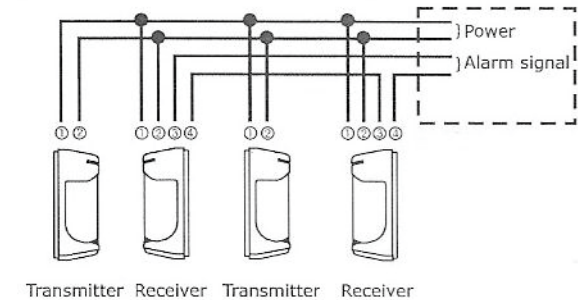


Connection

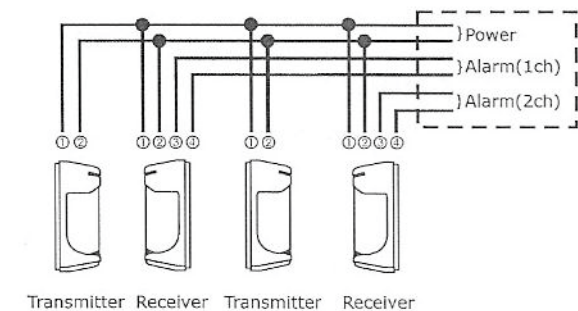
Example connection 1 - Standard



Example connection 2 - In-line Single Channel



Example connection 2 - Dual Sensors, Separate Channels



Running the Cable

Run a cable from the alarm control panel to the photobeam sensor. If burying the cable is required, make sure to use electrical conduit. Shielded cables are strongly suggested. See table 1 for maximum cable length.

Table 1: Cable Length

Model No.	PB-10HD		PB-25HD		PB-30HD	
	12V	24V	12V	24V	12V	24V
AWG22	360m	3,200m	320m	2,800m	320m	2,800m
AWG20	600m	5,400m	550m	4,800m	550m	4,800m
AWG18	1,000m	8,640m	800m	7,200m	800m	7,200m
AWG16	1,200m	12,000m	980m	8,800m	980m	8,800m
Model No.	PB-60HD		PB-80HD		PB-120HD	
	12V	24V	12V	24V	12V	24V
AWG22	280m	2,400m	200m	1,600m	110m	900m
AWG20	450m	4,200m	350m	3,000m	170m	1,400m
AWG18	700m	6,200m	500m	4,200m	250m	2,200m
AWG16	850m	7,600m	590m	5,200m	310m	2,600m

Note(1): Max. cable length when two or more sets are connected is the value shown in Table 1 divided by the number of sets.

Note(2): The power line can be wired to a distance of up to 3,300 ft. (1,000m) with AWG22 (0.33mm) telephone wire.

LaneMinder3

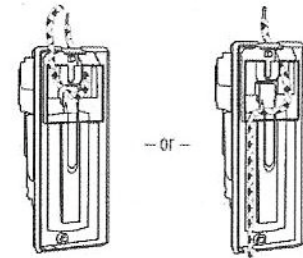
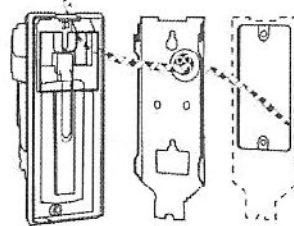
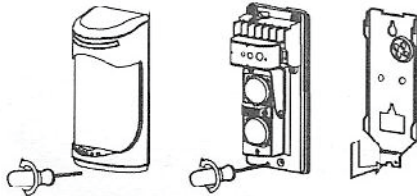
SCS Infra-red

4. INSTALLATION METHOD

Wall Mount

- (1) Loosen the cover locking screw and remove the cover. Loosen the unit setting screw at lower part of unit base. Slide the mounting plate downwards and remove it.
- (2) Pull wire through on the installation site.
- (3) Break grommet on mounting plate and pull wire through it. Secure the plate with 4mm screws.
- (4) When exposed wired break knockouts (2 positions) on the rear of unit, pull wire through as the figure and attach it to the mounting plate.

Note: Plug opening between grommet and wire with sealing materials.

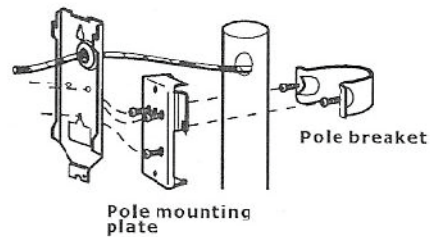


Pull wire through sensor body (back to front) and attach it to the mounting plate.

(5) After wiring is completed, adjust alignment, check operation and attach cover.

Pole Mount

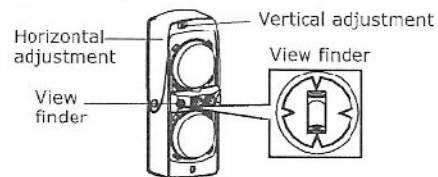
- (1) Use dia 38mm to 45mm pole.
- (2) Insert 2 pcs. of oval countersunk head screws (M4x20) in a pole bracket with a few rotation.
- (3) Fix pole mounting plate to pole with pole bracket.
- (4) Detach cover, and remove mounting plate from sensor body.
- (5) Temporarily insert 2 pcs of M4x10 screws in pole mounting plate and fix sensor, mounting plate on them.
- (6) Do the same procedure as (3)-(5) of wall mount.



5. ALIGNMENT AND OPERATION

Eyeball adjustment

- (1) Remove the transmitter cover, and look into one of the alignment viewfinders (one of the four holes located between to two lenses) at a 45 angle.
- (2) Adjust the horizontal angle of the lens vertically and horizontally until the receiver is clearly seen in the viewfinder.
- (3) Repeat steps 1 and 2 for the receiver.
- (4) Replace the transmitter and receiver covers.



NOTE: If you cannot see the opposite unit in the viewfinder, put a sheet of white paper near the unit to be seen,

Laser adjustment

- (1) Remove the transmitter cover, then turn the laser on with the ON/OFF switch.
- (2) Adjust the transmitter's sensor unit vertically and horizontally until the red dot is centered on the receiver and both the receiver's LEDs turn off.
- (3) Repeat steps 1 and 2 for the receiver.
- (4) Turn the lasers off, and then replace the covers.

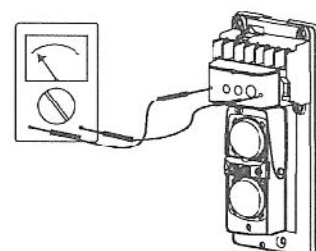


Alarm	Signal Single	Signal
OFF	OFF	Best
OFF	OFF	Good
OFF	ON	Fair
ON	ON	Re-adjust

Fine Tuning the Receiver

- (1) Once the sensor is mounted and aligned, the sensor can be fine tuned using the voltage output jack.
- (2) Set the range of a volt-ohm meter (VOM) to 0~10VDC.
- (3) Measure the voltage.
- (4) Adjust the horizontal angle by hand until the VOM indicates the highest voltage.
- (5) Adjust the vertical angle by turning the vertical adjustment screw until the VOM indicates the highest voltage.

Voltage output	Alignment quality
>2.8V	Best
1.7~2.7V	Good
1.1~1.6V	Fair
<1.0V	Re-adjust

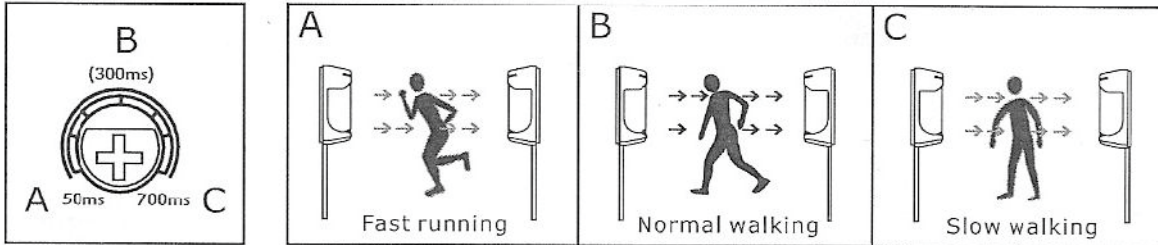


LaneMinder3

SCS Infra-red

6. RESPONSE TIME

Adjust response time as follows. The unit does not detect the passing object faster than the response time set. If the response time is set longer, the unit does not detect human beings. Adjust to a little longer response time in a site where large passing objects, newspaper or carton box may move.



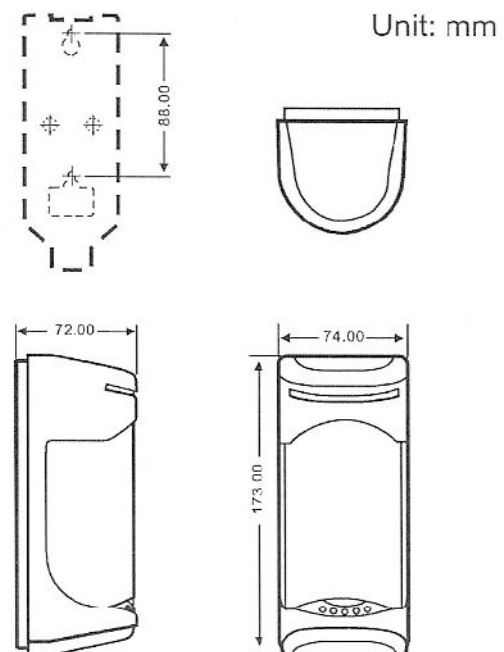
7. TROUBLESHOOTING

Trouble	Possible Origin(s)	Remedy(s)
Transmitter LED does not light.	Incorrectly wired and/or insufficient voltage	Ensure the power supply to the transmitter is 10 to 30 VDC.
Receiver LED never lights up when the beam is interrupted.	a. Insufficient voltage b. Beam reflected away from receiver c. Beams not simultaneously interrupted.	a. Double-check the voltage. b. Clean the cover. c. Check overall installation.
Beams interrupted and LED lights, but no alarm tigger.	Alarm tigger cable may be cut, or the relay contact stuck due to overloading.	Check the continuity of the wiring between the sensor and the alarm.
Alarm LED continuously lit.	a. Lenses out of alignment. b. Beam are blocked. c. Cover is foggy or dirty.	a. Realign the lenses. b. Remove any obstacles. c. Clean the cover.
Alarm tigger becomes erratic in bad weather.	Lenses out of alignment.	Check overall system installation. If still erratic, realign the lenses.
Frequent false triggers from leaves, bird, etc.	a. Too sensitive. b. Bad location.	a. Reduce the response time. b. Change the transmitter and/or location.

8. SPECIFICATIONS

Model	PB-10HD	PB-25HD	PB-30HD	PB-60HD	PB-80HD	PB-120HD
Max. range(outdoor)	33'(10m)	83'(25m)	100'(30m)	200'(60m)	260'(80m)	400'(120m)
Max. range(indoor)	66'(20m)	166'(50m)	200'(60m)	400'(120m)	520'(160m)	800'(240m)
Current	61mA	63mA	65mA	69mA	73mA	77mA
Power	10~30VDC(Non-polarity)					
Response time	50~700msec(variable)					
Alarm output	Contact capacity:NC/NO. 1A/120VAC					
Tamper output (Tx & Rx)	NC switch, 1A@120VAC					
Alarm LED (Receiver)	Red LED -ON:When transmitter and receiver are not aligned or when beam is broken.					
Signal LED (Receiver)	Yellow LED -ON:When receiver's signal is weak or when beam is broken.					
Power LED (Receiver and Transmitter)	Green LED -ON:Indicates connected to power.					
Laser wavelength	650nm					
Laser output power	≤5mW					
Alignment angle	Horizontal: ±90°, Vertical: ±15°					
Operating temperature	-23°F(-25°C) to +131°F(+55°C)					
Weight	2.5lbs.(1.1kg)					
Case	PC Resin					
Humidity	<70%					

9. EXTERNAL DIMENSIONS



** No laser beam alignment :PB-10HD/PB-25HD

** With laser, beam alignment :PB-30HD/PB-60HD/PB-80HD/PB-120HD

LaneMinder3

Garrison Infra-red

Features

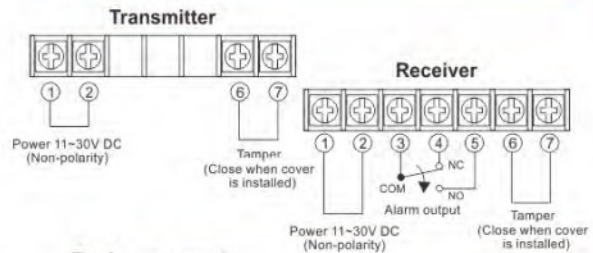
1. Powerful and reliable twin beam detector
2. Easy optical alignment with LED indication
 - ⊙ 10-level LED indicator, one can check beam strength easily.
 - ⊙ Highly accurate alignment, no need to use voltmeter.
 - ⊙ No need for using beam blocking plate.



3. Double modulation synchro-twin beam (20KHz/500Hz)
4. Adjustable beam interruption period (50~700msec)
5. Lighting & surge protection. Automatic gain control circuit.
6. Form C relay providing more applications.
7. Anti- Frost design.
8. IP rating up to 66, made possible by the high-sealing silicone rubber packing.
9. Target structure color, is tuned to the peak wavelengths of human vision, to be easily targeted in the beam alignment process.

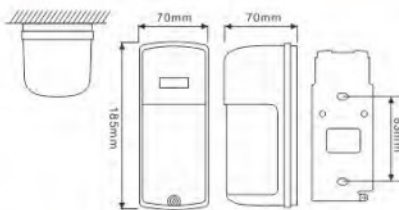


Terminals

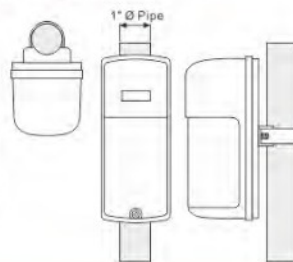


Dimensions

Wall mount



Pole mount



Pole mount



Specifications

Model	LK-25HD	LK-40HD	LK-60HD	LK-80HD	LK-100HD	LK-120HD
Coverage outdoor use	25m	40m	60m	80m	100m	120m
Response time	50~700msec (variable)					
Power input	11~30VDC (no polarity)					
Power consumption (at 12VDC input)	45mA	55mA	60mA	80mA	90mA	100mA
Indication LED	Power LED: GREEN LED (transmitter) / ALARM LED: RED LED (receiver) BEAM alignment level LED: 3 RED LEDS (receiver)					
Alarm duration	1±0.5sec					
Relay output	Form C relay dry contact, 1A/120VAC, 2A/24VDC (resistor load)					
Tamper	Open when cover is removed (1A/120VAC)					
Alignment angle	Vertical 20° (±10°), horizontal 180°(±90°)					
IP rating	IP66					
Mounting	Wall mount or pole mount					
Operation temperature	-25°C~ +60°C					
Weight	730g					
Accessories	Wall mount screw (4 pcs), pole mount screw (4 pcs), metal mounting bracket (2 pcs), mounting hook (2 pcs), U-clamp (2 pcs)					

The specifications are subject to change without notice.