NVR780 Wireless Digital Outdoor Dual Side-View Detector with 4x Dual Sensors
Installation Manual V2.5

Introduction

The wireless NVR780 incorporates two independent, side-by-side passive infrared detectors into a single housing. Covering up to 24 meters (12m for each side), and configurable to report as a single unit (2 sides of the unit report to a single zone output) or dual units (each side reports to a separate zone output), the NVR780 provides flexible and accurate boundary protection.

Installation

To install the NVR780:

1) Select the detector's location. Remove the front cover screws holding the cover into place; open the cover.

2) Mount the unit on a flat, even, clean surface. Mount the back plate to the wall by securing the included 1.5" screws (4x) in each of the dedicated mounting holes. Secure the 2" screw in the dedicated wall tamper hole. **IMPORTANT:** Do not overtighten the tamper screw, it may lead to water infiltration of the unit. Also, the unit must be installed at least 40 cm (15.7 in) away from the desired protected area (door, window, etc.) when its sensitivity is set at 75% and 10 cm (3.9 in) when set at 100%. See Detector Settings below to set the sensitivity.

Enrollment

To enroll the NVR780 to the system, please refer to your respective panel's/receiver's Programming Guide. If you are assigning the zones of the NVR780 via the anti-tamper switch, press once (under 1 sec.) to assign the first zone, and twice (under 1 sec. each) to assign the second.

Reporting (Zone Mode)

The NVR780 is configurable to report as a single unit (**Single Mode**: two sides of the unit report as a single zone) or dual units (**Dual Mode**: each side reports as two separate zones). In **Single Mode**, report has only one S/N. In **Dual Mode**, report has two separate S/N, one for each side. Zone Mode is configured via DIP switches. See *Detector Settings* below to set the Zone Mode to either Single or Dual. *NOTE: In Dual Mode, the 'Cover Tamper' is reported to zone 1, and the 'Wall Tamper' is reported to zone 2.*

Walk-Testing

To put the detector into Walk-test Mode, open and close the cover, or unplug and then plug in the battery pack. Walk-test Mode lasts five minutes. **IMPORTANT**: If the cover remains open, the unit will not be operational. When in Walk-test Mode, the unit will not go into Energy Save Mode.

Detector Settings

IMPORTANT: When changing DIP switch settings, the unit must be powered. To save changes, trigger the box tamper or close the cover.

DIP Switch#	Functionality
DIP Switch 1	**LED** Enable (ON) or disable (OFF) the LED, (**default = ON**)
DIP Switch 2	**Buzzer** Enable (ON) or disable (OFF) the buzzer, (**default = OFF**)
DIP Switch 3	**Sensitivity** *(see table at right)* ON= 100% (High), OFF= 75% (Normal), (**default =OFF**)
DIP Switch 4	**Zone Mode: Single/Dual** ON= Single Mode, OFF= Dual Mode, (**default =ON**)

Min. and Max. Detection Coverage

The following is the minimum and maximum detection coverage when the vertical beam adjustment is set at 0°.

	Minimum Coverage	Maximum Coverage
75% Sensitivity Level	0.4m (1.3 ft.)	11m (36 ft.)
100% Sensitivity Level	0.1m (0.3 ft.)	23m (75.4 ft.)

Power-up Sequence

If the module is set in Single Mode:
- Both left and right LEDs blink simultaneously 4 times
- Buzzer activates (on/off beep: one tone)

If the module is set in Dual Mode:
- Both left and right LEDs blink alternately 4 times
- Buzzer activates (two tones, continuous)

Energy Save Mode

The NVR780 enters into Energy Save Mode after two detections within 5 minutes. In Energy Save Mode, both the LED indication and buzzer indication are shorter than during normal operation. After 3 minutes, the module returns to transmission mode.

Battery Replacement

Replace the pack in its original orientation; the batteries must be facing up (towards PCB enclosure), and the connector must be on the left side.

Alarm

If the module is set in Single Mode:
- **LED**: red LED indication only on the relevant side(s) for 2 sec.
- **Buzzer**: activates (same tone for each side)

If the module is set in Dual Mode:
- **LED**: red LED indication only on the relevant side(s) for 2 sec.
- **Buzzer**: activates, each side has its own tone. If there is an alarm on both sides, there is a separate, third tone.

Firmware Upgrade via Built-in Serial Port

For upgrade instructions, refer to the Firmware Upgrade Instructions document which is available at paradox.com > Software > WinLoad.

Adjustable Beam Pattern

The NV780 features an adjustable beam pattern, both vertically and horizontally. The vertical adjustment is made to extend or shorten the range of detection; each lower beam can be independently adjusted between five positions (0° = 12m, 5° = 10.5m, 10° = 7.5m, 15° = 5.25m, 20° = 3m). The horizontal adjustment is made to avoid detection of unwanted objects directly next to the detector (0° or 3° away from wall).

A: Vertical Beam Adjustment (lower beam only)	Adjust the vertical beam by sliding the lens tab vertically (see A in Figure 2), and locking the lens tab in the desired position, where: 0° = 12m, 5° = 10.5m, 10° = 7.5m, 15° = 5.25m, 20° = 3m.
B and C: Horizontal Beam Adjustment	Adjust the horizontal beam by sliding the lens casing horizontally, and aligning its top edge with either the upper railing, (see B in Figure 2), or aligning its top edge with the lower railing (see C in Figure 2). Lens casing aligned with upper railing = 0° Lens casing aligned with lower railing = 3°

Figure 2: Adjustable Beam Pattern
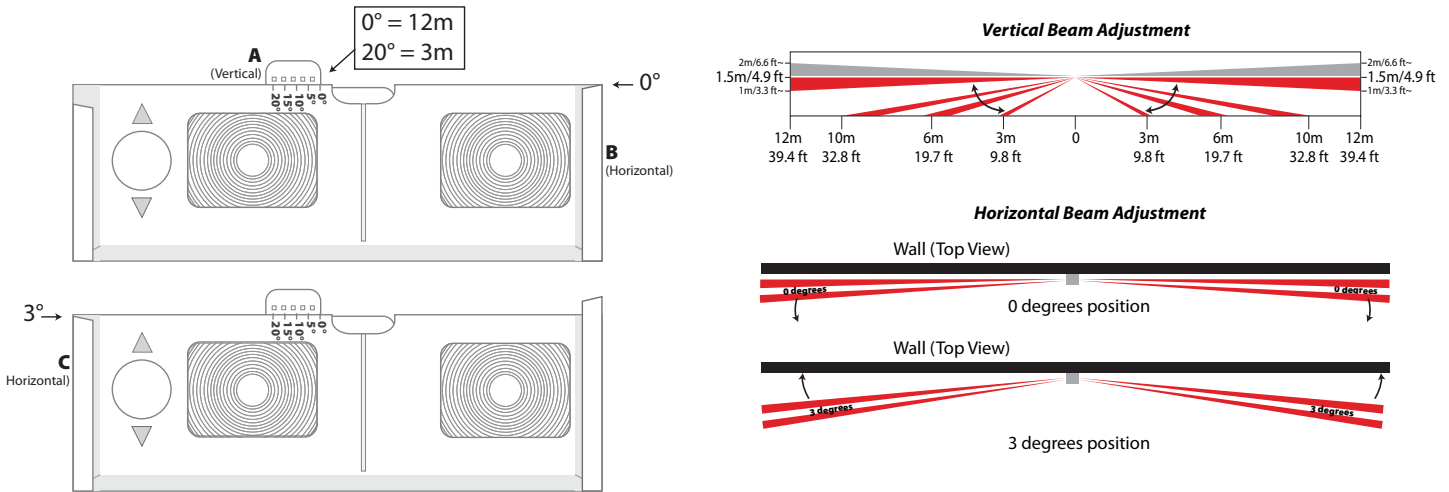
Technical Specifications

Sensor	4x dual rectangular element, low noise, high sensitivity, EMI immunity
Lens	2nd gen., flat, 2x dual beam, 1.7" focal point, narrow beam long-range Fresnel lens
Processing	High resolution digital signal processing / digital APSP / true digital temperature compensation / ultra low current-saving algorithm
Startup time	35 sec.
Detection speed	0.2m/sec – 4m/sec (0.6' – 13.1'ft/sec)
Power input	3x AA alkaline battery
Current consumption	3 year battery life
Coverage	Bi-directional, independent, 2 x 3m to 12m (9.8ft to 39ft)
PET Immunity	Up to 40kg (90lb) - requires min.1.5m (4.9ft) installation height
Installation height	1.5m and above
Alarm indicator	2x red LED for 2 sec., 1 for each detection side + buzzer (can be disabled)
Alarm output	Configured as two independent zones or a single zone
Anti-tamper switch	Box and wall tamper detection and messages
Operating temperature	-35°C to +50°C (-31°F to +122°F)
Humidity	95% max.
Dimensions	9 x 5.5 x 4 cm (3.5 x 2.2 x 1.6 in.)
RF frequency	433MHz or 868MHz
RF immunity	Complies with EN 50130-4: 10V/m 80MHz to 2GHz