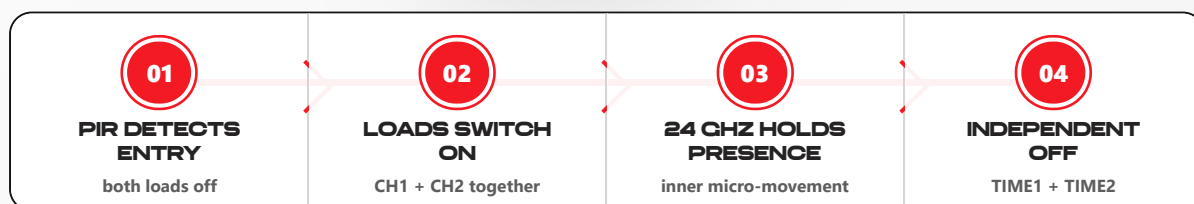


TECHNICAL DATA SHEET

NOIR DUO

2-Channel PIR + 24 GHz True-Presence Sensor

No unwanted switch-off during still occupancy. PIR handles first detection; 24 GHz sensing keeps occupancy held after activation.



DUAL-STAGE SENSING LOGIC FOR RELIABLE LOAD CONTROL



**PIR FIRST
DETECTION**



**24 GHZ
PRESENCE
HOLD**



**360°
DETECTION
UP TO 8 M
DIA.**



**INDEPENDENT
2-CHANNEL
CONTROL**

SAFETY INSTRUCTIONS

- Installation must be carried out only by a **qualified electrician**.
- In case of malfunction or breakdown, consult a certified professional.
- Ensure a suitable circuit breaker is installed for protection.
- Always **switch off the power supply** before installation or maintenance.
- Do not install the device on **conductive surfaces**.
- Avoid exposure to liquids; this product is **not waterproof**.
- Check connected loads against the dry-contact and LED load ratings.

HANDLING INSTRUCTIONS

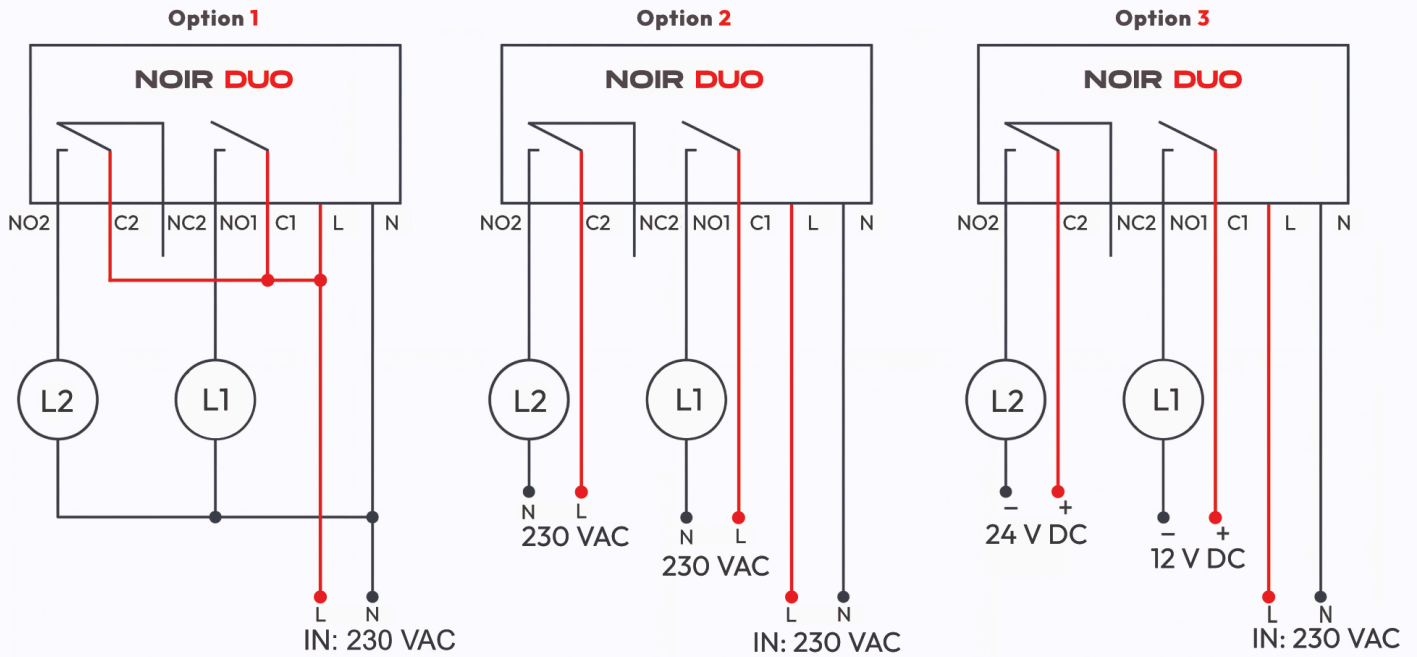
- Clean the sensor using a **soft, dry cloth only**.
- Do not use solvents, detergents, or chemicals as they may damage the unit.

How Noir Duo works: PIR performs first detection when both outputs are OFF. Both channels switch ON together, then 24 GHz sensing holds occupancy. TIME1 and TIME2 switch OFF independently after vacancy. If presence returns while one channel is still ON, 24 GHz sensing can reactivate the timed-out channel.

TECHNICAL SPECIFICATIONS

Rated Voltage	220-240 V AC
Rated Frequency	50 Hz
Sensing Technology	PIR first detection + 24 GHz true-presence hold
First Detection	PIR when both channel outputs are OFF
Presence Hold	24 GHz sensing after activation
Operating Temperature	-20°C to +40°C
Humidity Range	<93% RH
Ambient Light	3-2000 lux adjustable; SUN always-on mode
Detection Angle	360° ceiling mounted detection
Detection Range	Adjustable diameter 2-8 m
True-Presence Zone	<3 m inner zone for fine seated micro-movements, including breathing-related movement
Movement Zone	3-8 m outer zone after activation
Installation	Recessed ceiling mount; 2.2-4 m height, 3 m optimal
Time Delay	TIME1: 10 s / 3 / 7 / 15 / 30 / 60 min TIME2: 10 s / 3 / 7 / 15 / 30 / 60 min + impulse
Rated Load Max	Channel 1: 7 A dry contact, NO, 300 W LED Channel 2: 10 A dry contact, NO/NC, 300 W LED
IP Rating	IP20 indoor use

WIRING DIAGRAM



Channel logic:

PIR first detection switches both channels ON.
TIME1/TIME2 switch OFF independently; 24 GHz presence can reactivate a timed-out channel.

Load safety:

Connect loads directly only within rated limits. Use an external relay/contactors for heavy AC/fan or high-inrush loads.

TERMINAL REFERENCE

L / N

230 V AC supply input to the sensor electronics.

NO1 / C1

Channel 1 normally-open dry contact output, controlled by TIME1.

NO2 / C2 / NC2

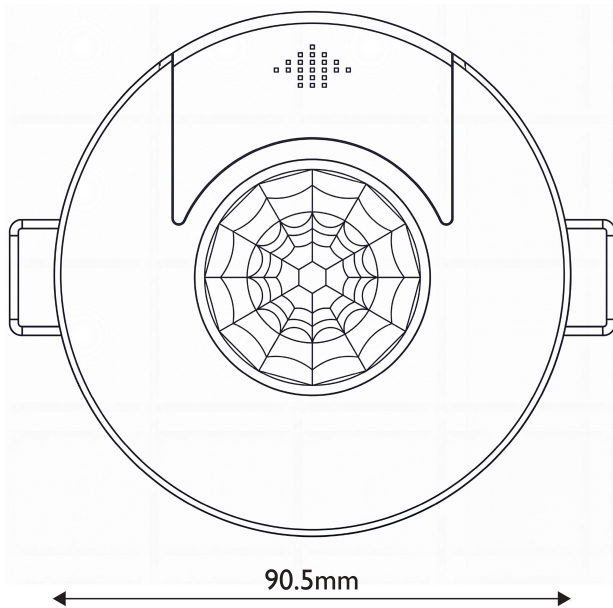
Channel 2 changeover dry contact output, controlled by TIME2.

LOAD LIMIT

Use relay or contactor control for heavy AC/fan or high-inrush loads.

TECHNICAL DRAWINGS

DIMENSION DRAWING 1

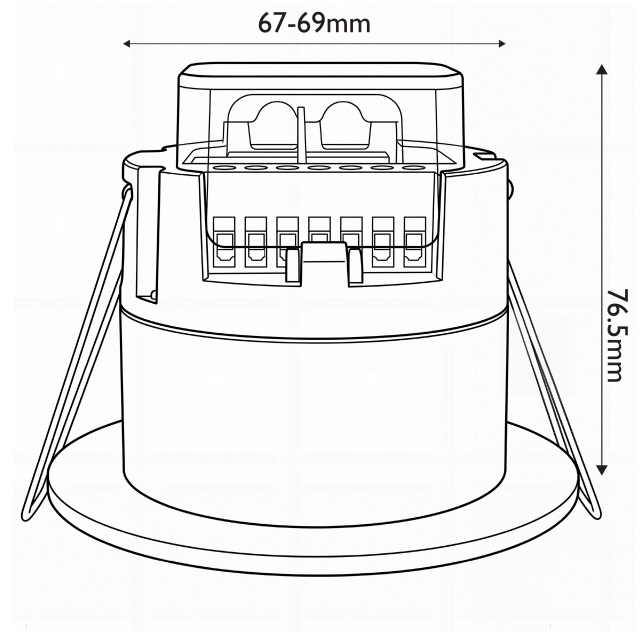


OUTER FRONT DIAMETER / FACE SIZE
90.5 MM

CEILING CUTOUT SIZE
67-69 MM

OVERALL HEIGHT
76.5 MM

DIMENSION DRAWING 2



DIMENSION FIT REFERENCE

VISIBLE FACE

Use the 90.5 mm outer front diameter / face size as the visible ceiling reference.

CEILING CUTOUT

Prepare a 67-69 mm ceiling opening for the recessed body.

OVERALL DEPTH

Allow 76.5 mm overall height above the ceiling plane before wiring and locking the clips.

DRAWING CHECK

Use Dimension Drawing 1 for face size and Dimension Drawing 2 for cutout/depth reference.

INSTALLATION & COMMISSIONING

INSTALLATION GUIDELINES

- Ensure power is **disconnected before installation**.
- Mark the ceiling cutout position at the sensor location.
- Cut a **67-69 mm** ceiling opening for recessed mounting.
- Connect **L/N and relay terminals NO1/C1 and NO2/C2/NC2** as per the wiring diagram.
- Do not exceed the **maximum rated load**.
- Fold spring clips upward, insert the sensor, and release to lock.

IMPORTANT SITE CHECKS

- **Place centrally:** keep a clear 360° view at 2.2-4 m height; 3 m is optimal.
- **Avoid interference:** keep away from moving objects, airflow sources, mirrors, glass, thin partitions, fans and vibration.
- **Microwave check:** verify SENS on site if motion behind glass or thin partitions causes unwanted ON.

CUTOUT

67-69 mm recessed ceiling opening.

HEIGHT

2.2-4 m install height, 3 m preferred.

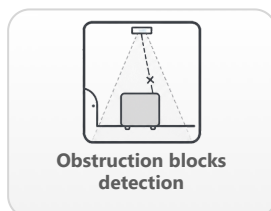
LOAD

Use relay/contactors for heavy or high-inrush loads.

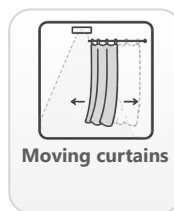
COVERAGE

Adjust SENS for 2-8 m diameter coverage.

SENSOR MAY TURN OFF



SENSOR MAY TURN ON



COMMISSIONING TEST

1. Set LUX to SUN for test mode, then energise the circuit.
2. Walk in and confirm PIR first activation switches both channels ON.
3. Sit within the inner <3 m zone and confirm 24 GHz presence hold.
4. Leave and verify TIME1/TIME2 switch OFF independently after vacancy.
5. Reduce SENS if glass, curtains, fans or vibration causes unwanted ON.

FINAL SETTING RECORD

LUX

SENS

TIME1

TIME2

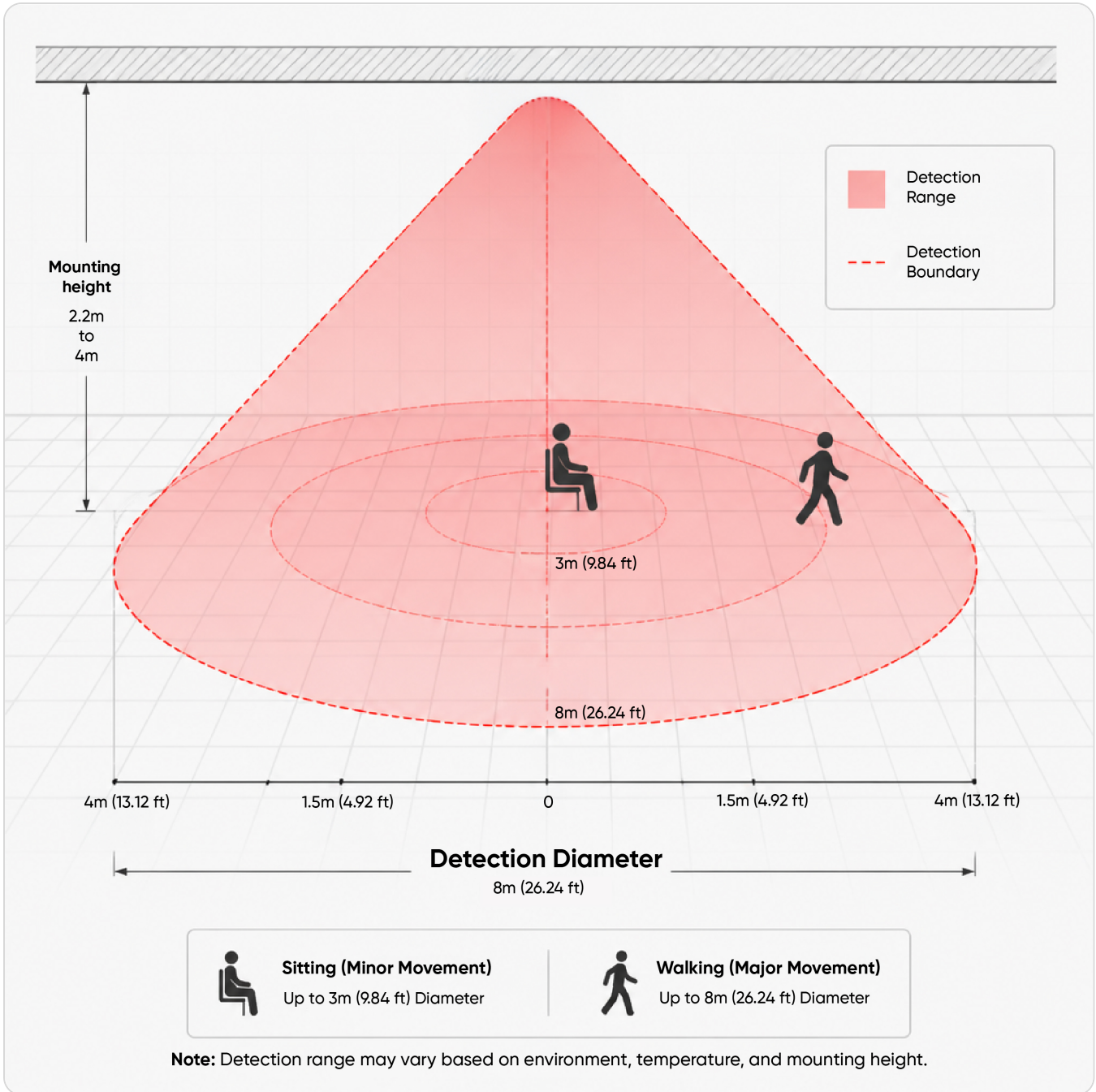
PASS

PIR first detection checked.

PASS

24 GHz seated hold checked.

DETECTION RANGE



MOUNTING HEIGHT

2.2-4 m

3 m is preferred for balanced presence and movement coverage.

SITTING / MINOR MOVEMENT

Up to 3 m dia.

Inner true-presence zone for seated work, reading and fine movement.

WALKING / MAJOR MOVEMENT

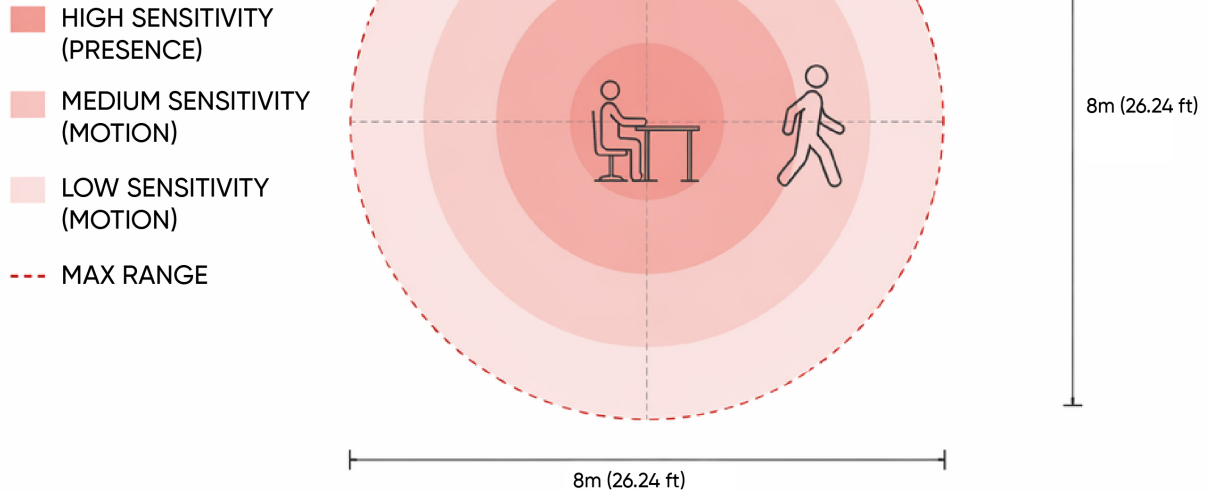
Up to 8 m dia.

Adjustable full-room active movement coverage after activation.

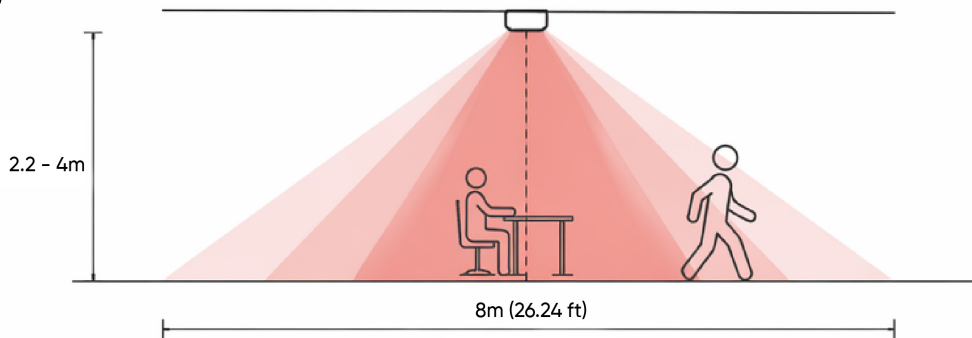
Note: Detection range may vary based on environment, temperature, mounting height, airflow and site conditions.

DETECTION RANGE - PLAN & SIDE VIEW

PLAN VIEW (TOP)



SIDE VIEW



Note: Detection area may vary based on environment and mounting height.

HIGH SENSITIVITY

Presence

Central zone supports still occupancy and minor seated movement.

MEDIUM / LOW SENSITIVITY

Motion

Outer rings represent movement coverage toward the maximum range.

MAXIMUM RANGE

8 m dia.

Set SENS to match room size and reduce unwanted activation.

Noir Duo sequence: PIR handles first walk-in detection when both loads are OFF. Once activated, 24 GHz sensing holds occupancy, with true-presence hold strongest in the inner zone.

FEATURES & FUNCTIONS

Noir Duo is built for spaces where normal motion sensors switch OFF too early. PIR handles the first walk-in detection when both loads are OFF. Once activated, 24 GHz sensing holds occupancy, including fine seated micro-movements in the inner zone.



PIR FIRST DETECTION

When both loads are OFF, PIR detects entry movement and switches Channel 1 and Channel 2 ON together.



24 GHZ PRESENCE HOLD

After activation, 24 GHz sensing maintains occupancy. Inner <3 m true-presence hold supports reading and seated use.



INDEPENDENT 2-CHANNEL TIMING

TIME1 controls Channel 1. TIME2 controls Channel 2. Both turn ON together, switch OFF at their own delay, and can reactivate on new presence.



LUX, SENS AND TIME CONTROLS

LUX sets day/night threshold, SENS adjusts 2-8 m coverage, and TIME settings define each channel delay.

01 ENTRY

PIR is the first detection stage when both channels are OFF. Both channel outputs switch ON together.

02 HOLD

After activation, 24 GHz sensing maintains occupancy, especially inside the inner true-presence zone.

03 VACANCY

TIME1 and TIME2 count independently, so each connected load can switch OFF at its own delay.

CHANNEL PLANNING NOTES

DIRECT LOADS

Connect directly only when the load is within the channel rating and suitable for dry-contact switching.

HEAVY LOADS

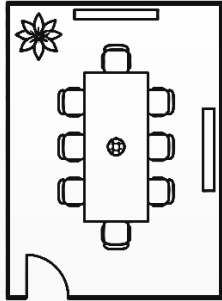
Use an external relay or contactor for heavy AC/fan loads or high-inrush equipment.

APPLICATION CONTROL

Use Channel 2 for auxiliary load, AC enable, BMS input, or automation control where appropriate.

APPLICATIONS

Use Noir Duo where one sensor must handle walk-in activation, seated presence hold, and two separately timed outputs. Keep direct load control within the rated channel limits; use a relay or contactor for heavier AC/fan loads or high-inrush equipment.



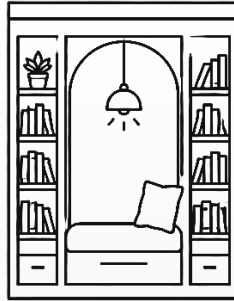
OFFICE / MEETING ROOM

ENTRY LIGHTING + CONTROL OUTPUT

L1 panel lights

L2 AC / BMS input

PIR switches both loads ON at walk-in. 24 GHz hold prevents nuisance OFF during seated meetings and fine desk movement.



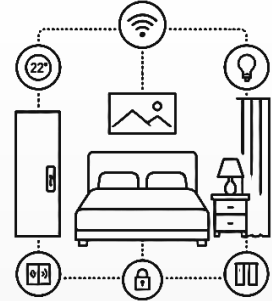
LIBRARY / READING AREA

STILL OCCUPANCY HOLD

L1 reading lights

L2 zone lighting

Inner <3 m true-presence zone keeps lighting ON for reading, writing, and fine seated movement.



HOTEL ROOM AUTOMATION

INDEPENDENT TIMEOUT LOADS

L1 main lights

L2 AC / relay control

Loads activate together on entry, then TIME1/TIME2 switch OFF independently after vacancy. Use a relay for AC loads above the channel rating.

APPLICATION SETUP CHECKS

ENTRY TRIGGER

PIR should face the main entry path and trigger only when both channels are OFF.

PRESENCE SEAT

Place desks, beds, or reading positions inside the inner <3 m true-presence zone.

CHANNEL PLAN

Use TIME1 and TIME2 to separate the lighting timeout from the auxiliary control timeout.

HEAVY LOAD

For heavy AC/fan loads, switch a relay/contactors instead of driving the load directly.



TROUBLESHOOTING

Use this diagnostic guide after installation or commissioning. Start with power and wiring, then check placement, sensitivity, and connected load rating.

POWER

Verify L/N input, breaker status, and terminal tightening before sensor testing.

PLACEMENT

Keep the PIR lens clear and mount centrally for a clean 360° view.

SETTINGS

Use SUN for commissioning, then set LUX, SENS, TIME1 and TIME2 for site use.

LOAD

Use relay/contactor control for heavy AC/fan or high-inrush loads.

Issue	Possible Cause	Solution
Missed first activation	PIR view blocked or poor mounting location	Reposition for clear 360° view and test walk-in detection
	No power or incorrect wiring	Verify L/N and channel terminal connections
	LUX threshold too low	Adjust LUX or use SUN for commissioning
False OFF while seated	User outside inner <3 m true-presence zone	Check desk/seat location and sensor height
	SENS too low or obstruction in field	Increase SENS and remove obstruction
False ON / always ON	Movement behind glass/thin partition, curtain, fan or vibration	Reduce SENS, relocate sensor, or isolate moving object
	Continuous occupancy or long TIME delay	Verify room condition and TIME1/TIME2 settings
Channel/load issue	Load exceeds rating or has high inrush current	Use external relay/contactor and verify load current

SITE HANDOVER RECORD

LUX setting

SENS setting

TIME1 delay

TIME2 delay

Record final commissioning settings after walk-in detection, seated hold, and vacancy timeout tests are complete.

WASTE MANAGEMENT GUIDELINES



OTHER

SENSINOVA / NOIR DUO

Dispose of electronic waste only through authorized e-waste collection or recycling channels. Do not dispose of the sensor with household waste. Follow applicable local electrical and environmental regulations.



Recyclable



Technical Support

Noir Duo is warranted against defects in materials and workmanship for 3 years from purchase. Specifications are subject to change. Installation must comply with local electrical codes.