

# PRESENCE DETECTION DONE RIGHT

mm-wave RADAR sensors are your reliable and affordable alternative to PIR detectors



motion and presence sensing | completely invisible integration  
precise setting of detection area | no radar experience required



LIGHTING  
CONTROL



AUTOMATIC  
DOORS



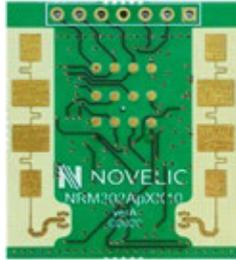
SECURITY  
SYSTEMS



EQUIPMENT  
ACTIVATION

Fully integrated radar motion and presence detector

# NRM302



- Reliable micro-movement presence detection
- Completely invisible integration
- Precise distance sensing
- Indoor and outdoor operation

## KEY FEATURES

- detects human motion up to 15 m
- determines direction of movement
- detects multiple objects simultaneously
- provides a list of all detected objects
- serial communication interfaces
- digital I/O event trigger interface
- no external data processing required
- high operating temperature range for integration into luminaires

## TECHNICAL BRIEF

Min Typ Max Units

### Power Supply

	Min	Typ	Max	Units
Supply Voltage		3.3		V
Supply Current		5.0	85	mA

### Application Parameters

	Min	Typ	Max	Units
Field of View		120x75		°
Detection Distance		15		m
Detectable Object Speed	0.1		10	m/s
	0.3		36	km/h
Measurement Update Rate		100		ms
Operating Temperature	-40		+85	°C

## Advantages of mmWave Radar Sensors

### SENSITIVITY - A LIGHT IN THE DARK

mmWave radar sensors are sensitive enough to detect even slightest movements from a person, no matter if they are walking, standing still or even sitting at a desk. Times are gone when it was necessary to stand up or wave at the PIR detector to turn the lights back on after not moving for a while.

### PROXIMITY - ON THE SPOT

An actual distance information for every detected target makes it easy to precisely define detection zones and ignore every object that is outside the area of interest. Multiple independent detection zones allow for individual triggers based on how close an object is to the sensor.

### MEASUREMENT PARAMETERS - INCREASE EFFICIENCY

Knowing the speed, direction and distance of an object at every given moment allows for clever ways to recognize motion patterns. These patterns can be used to cancel out cross traffic or switch appliances either on or off.

### ROBUSTNESS - RAIN OR SHINE

As mmWave radars are active sensors they bring their own RF illumination and do not rely on emissions from objects such as infrared radiation like PIR detectors. This means radars are not influenced by light conditions, ambient temperature, object temperature or colours. This trusted technology can be found in high reliability systems even in the harshest and demanding environments such as automotive, mining, heavy industry or air traffic control.

### SEAMLESS - FUNCTION FOLLOWS FORM

mmWave sensors can be installed behind a wide variety of non-conductive materials such as plastics, wood or ceramics. This makes it the ideal technology when an appealing product design or vandalism proofing is paramount.

### PRIVACY - USE DIFFERENT SENSES

Radar does not create an optical image of the surroundings. It detects anonymously and can be used in any situations where installing cameras is not an option.