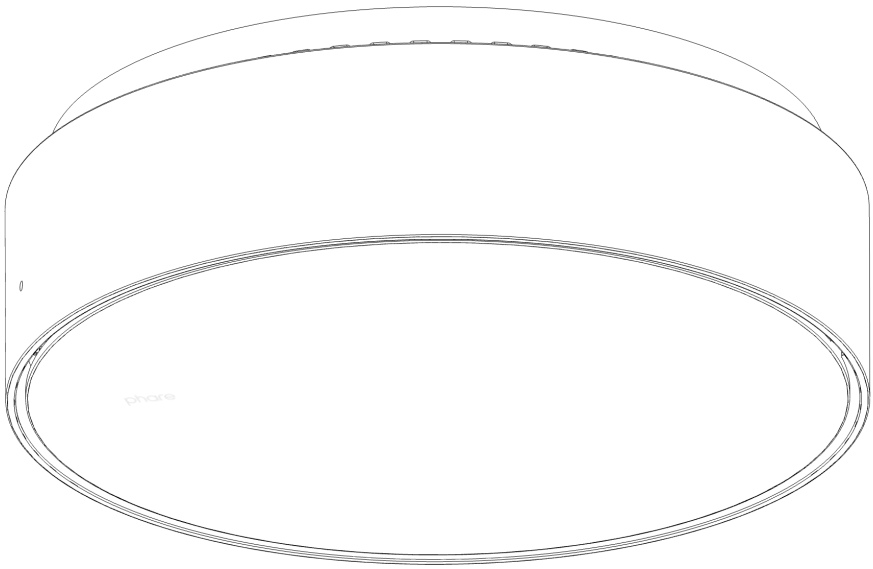
Phare C1 (PH01_05)

phare labs



Overview

Phare C1 is a photoelectric smoke alarm with added security features. It detects smoke and fire, along with non-fire threats including break-ins, damp and mold, and more.

Features

• Advanced sensing capabilities.
  - Fire and smoke
  - Movement and presence
  - Carbon Monoxide
  - Mold risk
  - Climate
  - Volatile Organic Compounds (VOCs)
  - Noise level

• Hardwired power supply with self-charging, maintenance-free backup battery.

• Support for common wireless communication protocols, including:
  - Wi-Fi
  - Bluetooth Low-Energy (BLE)
  - Cellular (LTE)
  - Zigbee
  - Thread

• 10-Year life.

Selected Use Cases

Fire Detection

Phare C1 uses advanced photoelectric sensing to detect fires early and accurately.

The C1's optical sensor has two separate channels, with each channel corresponding to a different wavelength of light. By capturing the response of smoke particles to different wavelengths, the C2 is able to distinguish fires from false alarms and differentiate various types of fires from one another.

Break-In Detection

Phare C1 takes a multivariate approach to identifying break-ins. The C1 analyzes data from its 24GHz Radar Transceiver and compares it to data from its ambient light, noise level, and carbon dioxide sensors to gauge human activity. The C1's internal data can also be complemented with data from compatible external sensors, such as smart locks or window opening sensors. If activity is detected when the C1 is set to an "away" or "vacant" condition, it will raise an alarm.

Water Leak Detection

Using humidity data in conjunction with climate and compatible external sensors, Phare C1 can detect and provide alerts for water leaks when they occur as well as preventing major property damage when conditions of high risk are detected such as frozen pipes bursting due to low temperature inside a vacant home.

Mold Risk Detection

Phare C1 utilizes climate data – temperature and humidity – to screen for conditions conducive to mold growth. The C1 observes that data over time and, if mold-promoting conditions persist for an extended period of time, raises an alert.

Carbon Monoxide Detection

Phare C1 employs an electrochemical gas sensor with good selectivity and stability to detect carbon monoxide.

Technical Specifications

Installation

Phare C1 installs using existing wiring. Three screws secure the mounting plate to the ceiling (see page 3), and the C1 attaches to the mounting plate with a 120deg rotation.

Testing and Maintenance

Phare C1 conducts periodic self-tests to ensure proper operation. It provides alerts of faults, tampering, and removal to ensure compliance. The C1 is designed to be maintenance free for the duration of its 10-year lifespan.

Absolute Maximum Ratings

	Min.	*Max.*
Supply Voltage (VAC)	*85 V*	*305 V*
Supply Voltage (VDC)	*120 V*	*430 V*
Input Current	*0 A*	*0.85 A*
Operating Temperature	*-20˚C / -4˚F*	*60˚C / 140˚F*
Relative Humidity	*5%*	*85%*
Backup Battery Capacity	*2600 mAh*	
Storage Temperature	*-20˚C / -4˚F*	*60˚C / 140˚F*
Storage Relative Humidity	*45%*	*85%*

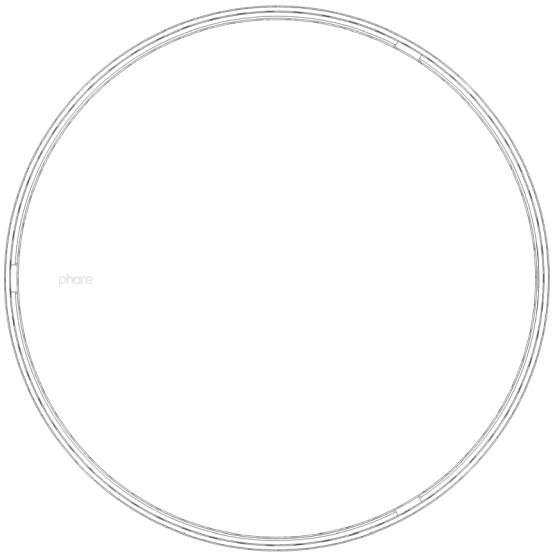
Sensor Ratings

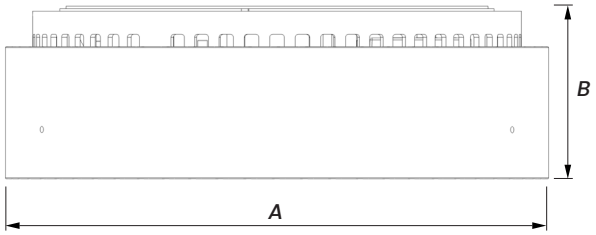
	Min.	*Max.*
Pressure	*300hPa / 4.35psi*	*1100hPa / 15.95psi*
Pressure Sensitivity	*-0.25 %*	*+0.25 %*
Humidity	*0 %*	*100 %*
Humidity Response time (0-63%)		*8s*
Humidity Tolerance	*-3 %*	*+3 %*
Hysteresis	*0 %*	*+1.5 %*
Temperature Range	*-40˚C / -40˚F*	*85˚C*
Temperature Accuracy	*-0.5˚C / -0.9˚F*	*+0.5˚C / +0.9˚F*
IAQ Sensor-to-sensor Deviation	*-15 %*	*+15 %*
IAQ Scan Speed		*10.8s*
Carbon Monoxide Concentration	*0 ppm*	*10000 ppm*
Carbon Monoxide Resolution	*0.5 ppm*	
Carbon Monoxide Accuracy	*-5 ppm*	*+5 ppm*
(whichever is larger)	*-10 %*	*+10 %*
Repeatability	*-2 %*	*+2 %*
Response Time (T90)		*60 s*
Ambient Light Spectral Bandwidth	*390 nm*	*700 nm*
Ambient Light Peak Sensitivity		*630 nm*
Presence Detector Frequency	*24 GHz*	*24.25 GHz*

[1] *Equivalent to 1.7cm*

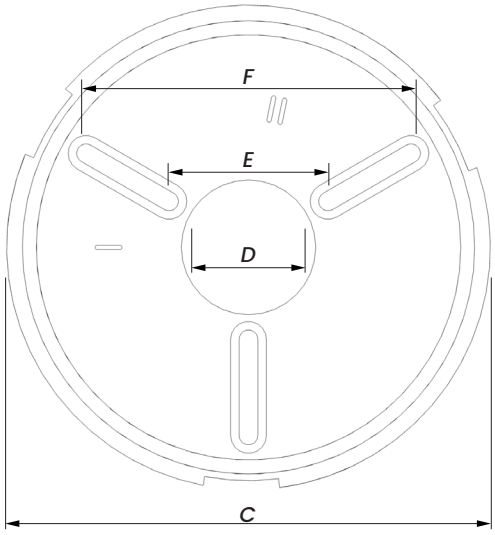
Dimensions and configuration

Device





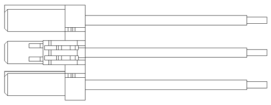
Mounting Plate



Device dimensions

		Metric	Imperial
A	Diameter	130 mm	5.12″
B	Height (from ceiling)	40.5 mm	1.59″
C	Plate diameter	108 mm	4.25″
D	Plate cable opening diameter	30 mm	1.18″
E	Minimum screw distance	36 mm	1.41″
F	Maximum screw distance	72.5 mm	2.85″

Power connector to Phare C1



Black / Blue	GROUND
White	9V smoke alarm Interconnect (optional)
Red / Brown	MAINS POWER

It is reccomended to use inline splicing connectors between the power connector and the building power (or an equivalent connector)