

A Comparison of Common ESPHome-Compatible MMWave Prescence Sensors

Models

DFRobot C4001 (SEN0609 Variant)

Not personally evaluated, but seems to be a strong contender, especially for larger spaces



- Amazon: Unavailable ("Gravity" SKU SEN0610 listed, but lacks the 8 antenna panels, using 2 instead. Limited feature set and some poor reviews)
 - DFRobot: <https://www.dfrobot.com/product-2793.html>

- Digikey:

<https://www.digikey.com/en/products/detail/dfrobot/SEN0609/23028638?s=N4lgTCBcDaIMoFEByAGAbCgnCAugXyA>

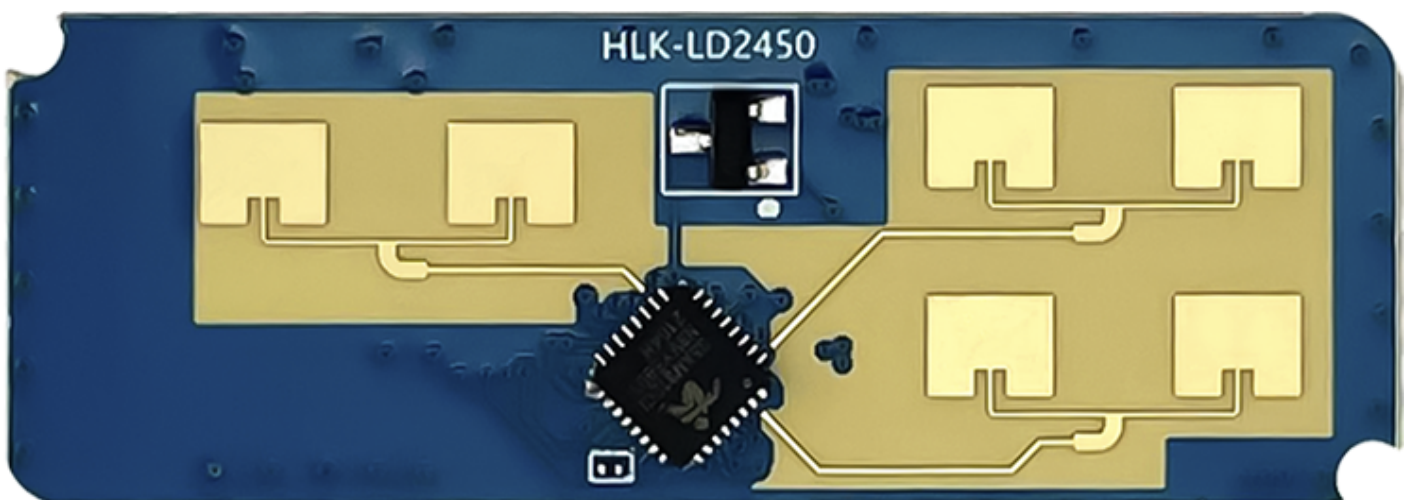
- Mouser:

<https://www.mouser.com/ProductDetail/DFRobot/SEN0609?qs=HFfMDpzxxd21aKNJkzimmg%3D%3D>

- Cost: \$14
- Features:
 - Presence Detection up to 16m (52ft)
 - Motion Detection up to 25m (82ft)
 - Horizontal Detection Angle of 100°
 - Vertical Detection Angle of 40°

LD2450

AKA: HLK-LD2450

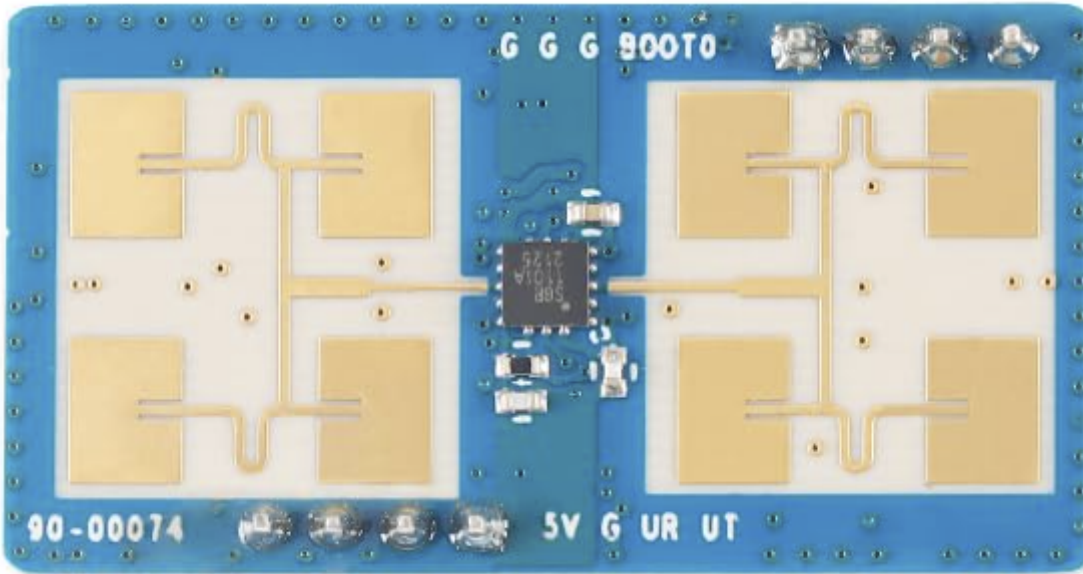


- Amazon: <https://www.amazon.com/gp/product/B0CGNM1VLM/>
- Cost (\$): \$9 ea. @ \$45 for 5
- Features
 - Presence Detection up to 6m (19ft)
 - Azimuth (L/R): $\pm 60^\circ$ (120?)
 - Pitch (Up/Dn): $\pm 35^\circ$ (70?)
 - Track up to 3 targets*
 - Define up to 3 zones*
 - 2 sensors might cover the same area and more effectively than an LD1125H, for less cost

* May be an ESPHome implementation-specific limitation that can be overcome by tweaking the lambdas

LD1125H

AKA: HLK-LD1125H-24G



- Amazon: <https://www.amazon.com/EC-Buying-HLK-LD1125H-24G-Millimeter-Respiratory/dp/B0C743T4H9/>
- Cost (\$\$\$): ~\$25 ea. (Might be able to be sourced cheaper via AliExpress, etc)
- Features
 - Moving Body Detection up to 8m (26ft)
 - Stationary Body Detection up to 4m (13ft)
 - Ceiling Mounted Body Detection 2m (6.5ft) radius @ 3m (10ft) height
- Limitations
 - Not cost-effective when an LD2450's range will do
 - No target tracking or zones
 - Movement filtering, such as for a fan, must be done by a radius range with an implementation-specific lambdaSEN0610

Revision #5

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