

Density DPU

Technical Specifications

- 01 – In the Box
- 02 – Hardware
- 03 – Networking & Power
- 04 – Placement

In the Box

01

Unit

Density DPU
Density bracket
Legal information booklet

Mounting Tools

Hex key (1.5mm)
Mounting screws
Drywall anchors

Hardware

02

Sensors & Infrared Lasers

IR Depth Sensor

Operating Temperature

35°C ambient (95°F) with minimum 3in clearance above the unit

Device Dimensions

149.2mm x 95.1mm (5.87in x 3.74in)

Installation & Mounting Requirements

- Door Height: 2.3m - 3m (7.5ft - 10ft)
- Door Width: 2.4m (8ft) when mounted at 3.05m (10ft)
- Mounting surface: 10.2cm wide x 17.8cm tall (6.0in x 7.0in)
- Placement: Centered above a door with no obstructions beneath (motion sensors, exit signs, ledge, hinge, etc)

Accessories

Ceiling mount bracket

Available for an additional cost.

Environmental Temperature & Humidity

- Temperature: 0° to 35°C (32° to 95°F)
- Relative humidity: 20% to 80% non-condensing

Device Weight

0.59kg (1.3lbs)

Indicators

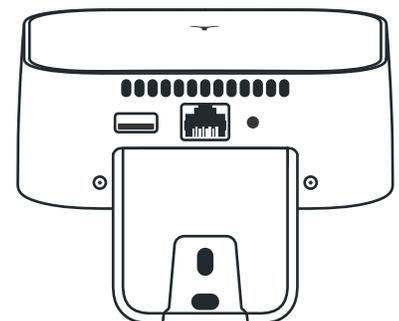
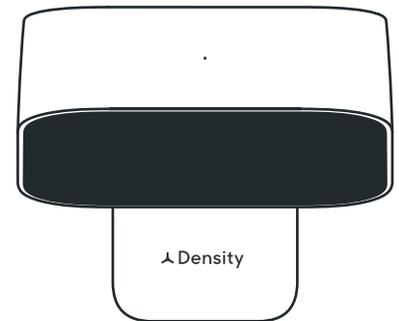
Multi-color status LED

Ports

- Single 10/100/1000 BaseT RJ45 interface
- Single USB 2.0 Device Port

Certifications

- Certified Class 1 Eye Safe Laser Device
- EN/IEC 60825-1 2014 (2007 USA)
- FCC Part 15 Subpart B Class A
- Conducted Emissions (15.107)
 - Radiated Emissions (15.109)



Network Interface

- Wifi 802.11 b/g/n (2.4 GHz only)
- WPA-PSK (a.k.a WPA-Personal)
 - WEP
 - Gigabit ethernet

Captive portal networks are not supported unless MAC address is registered.

DHCP Supported Configuration Options

- Option 53 - DHCP Message Type
- Discover
- Option 57 - Maximum DHCP Message Size
- 576
- Option 55 - Parameter List
- Parameter request Line Items
 - Subnet Mask (1)
 - Router (3)
 - Interface MTU (26)
 - Private/Proxy Auto Discovery (252)
 - Network Time Protocol Servers (42)
 - Domain Name (15)
 - Domain Name Server (6)
 - Hostname (12)
- Option 60 - Vendor Class Identifier*
- "Density S5 DPU"
- Option 61 - Client Identifier
- MAC Address
- Option 12 - Hostname
- Density-<Serial>

Recommended Network Cabling

CAT5E or later

Static Configuration

- IPv4 Address
- Name Servers

Defaults

- DNS: 8.8.8.8
- NTP: *.pool.ntp.org

Network Data Usage

Traffic Summary

- Sensors only make outbound requests (HTTPS 443)
- Normal Usage: 50 MB/day/DPU
- Accuracy Reports: ~300MB/month/DPU
- Firmware Updates: ~70MB/month/DPU
- Health Logs/Metrics: ~10mb/hour

Power Options

- 802.3at (PoE+) - Type 2, Class 4
- Passive 48V PoE+ Injector Wall Plug

Provided by Density when required.

Supported Mode

- Mode A
- Mode B

Unit Setup

- iOS application compatible with iPhone, iPad, iPod Touch to configure units

Required Whitelisted Addresses

- *.density.io
- *.s3.amazonaws.com
- *.pool.ntp.org (if applicable)
- connman.net
- connectivitycheck.gstatic.com
- 8.8.8.8 (if applicable)
- 8.8.4.4 (if applicable)

Density does not currently support IP address whitelisting. A list of exact API subdomains is available by request.

Data Hosting

- Amazon Web Services (AWS) Hosting
- Data centers in Northern Virginia
 - On-premise hosting not supported

Power Requirements

- Average Power Draw: 17 W
- Peak Power Draw: 26 W
- Power Requested: 25.5-30 W

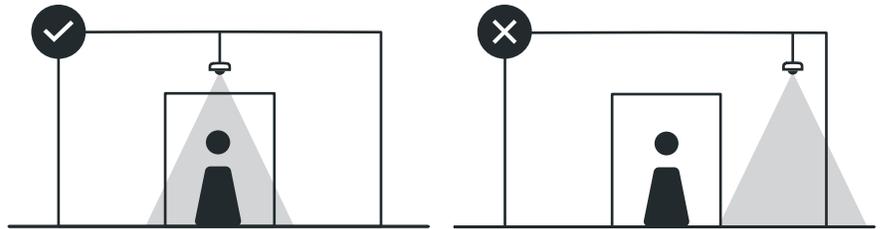
Density devices utilize high-frequency modulated lasers, which put the instantaneous power draw at 26 W for milliseconds at a time. While most Power Sourcing Equipment (PSE) lacks the resolution to see these spikes, Density DPUs request the maximum available power on a port to avoid unexpected behavior.

Mounting Requirements

People are counted as they walk beneath the unit, in and out of a space. The Density DPU and Bracket need to be centered and installed directly above the entryway to ensure people are detected.

Density cannot be mounted:

- Inside the ceiling
- On a side wall facing the entryway
- In the corner of a room



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