Density DPU
Technical Specifications

In the Box

Unit

Density DPU
Density bracket
Legal information booklet

Mounting Tools

Hex key (1.5mm)
Mounting screws
Drywall anchors

Hardware

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
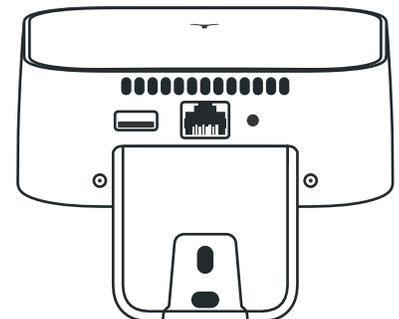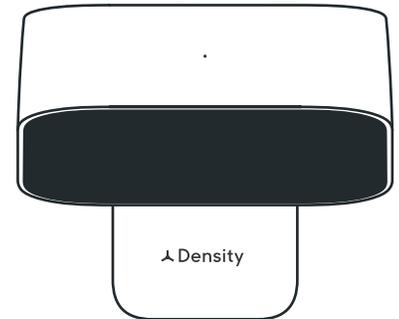
0.59kg (1.3lbs)

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)

Networking & Power

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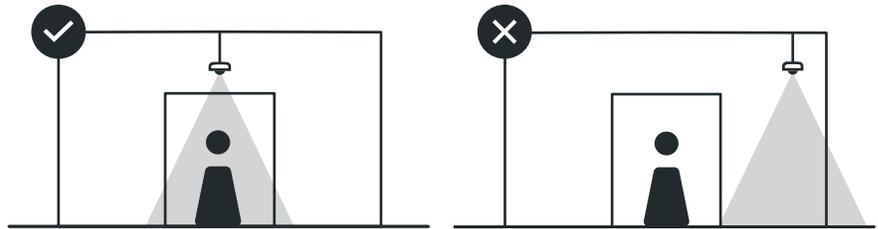- Peak Power Draw: 26 W
- Power Requested: 25.5-30 W

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 maximimum available power on a port to avoid unexpected behavior.

Placement

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*