

DATA SHEET

# Celona Indoor/Outdoor Access Points AP 13 & AP 13E

Enabling cellular wireless connectivity for enterprise environments, within private spectrum options

AP 13 & AP 13E are CBRS LTE access points as a part of Celona's 5G LAN solution portfolio. These IP65 rated access points offer highly deterministic over the air performance optimized for industrial deployments where wireless connectivity with predictable performance and low latency are required. With an enterprise ready operational model, Celona AP 13/13E access points are designed for mission critical use cases in indoor and outdoor ruggedized industrial environments. Like all Celona access points, the AP 13/13E supports plug and play deployment, remote provisioning, centralized cloud-based management and seamlessly integrates into the enterprise network.



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## Celona AP 13/13E

**Celona Indoor / Outdoor AP 13 & AP 13E are ruggedized and fully integrated 4G access points designed for enterprise private wireless environments.**

Celona's IP65 rated AP 13 & AP 13E were purposely engineered to deliver pervasive cellular coverage across indoor and outdoor environments such as warehouses, retail stores, manufacturing plants, offices, parking lots and stadium covered areas. Easy to deploy, Celona AP 13 & AP 13E enable interference-free access and unmatched wireless performance across various enterprise use cases and environments.



### Key benefits of AP 13/13E:

#### Secure wireless communication

- Certificate based mutual authentication secures connection between AP and cloud
- Data at rest and in-transit secured by comprehensive encryption mechanisms
- Regular penetration tests of system components are conducted by 3rd party security labs

#### Enterprise friendly management and operations

- Zero-touch provisioning out-of-the-box makes AP operational in minutes
- Self-organizing spectrum management enables the selection of the best bands for interference-free operation
- Managed and monitored through Celona's cloud-based Orchestrator platform as part of a complete private LTE turnkey solution
- Flexible time synchronization options via GPS or PTP time source

#### Built for tough environments

- IP-65 rated and built for tough environments with extended operating temperature, shock, vibration, and noise immunity
- Ruggedized design for installation in challenging environments

#### Deterministic performance for mission critical applications

- Delivers predictable performance for mission critical apps via MicroSlicing™ with QoS enforcements on a per application flow
- Delivers 200Mbps+ aggregate throughput with 2x2 MIMO and supports various uplink/downlink slot configurations.
- Operates in channel bandwidth of up to 40 MHz (with Carrier Aggregation)
- Interference free operation within the private cellular wireless spectrum via centralized coordination of frequency and power level allocation across the Celona network
- Infrastructure control for traffic scheduling and mobility events for client devices

## Celona 5G LAN

Unlike traditional small cells that require configuration of various radio parameters and integration with mobile core from a third party vendor, AP 13/13E is included as a part of Celona's 5G LAN platform that integrates the essential elements including access points, LTE core network edge hardware/software, radio resource management software and cloud-based orchestration tools specifically designed and developed for enterprise network use-cases.

### 5G LAN Value Prop

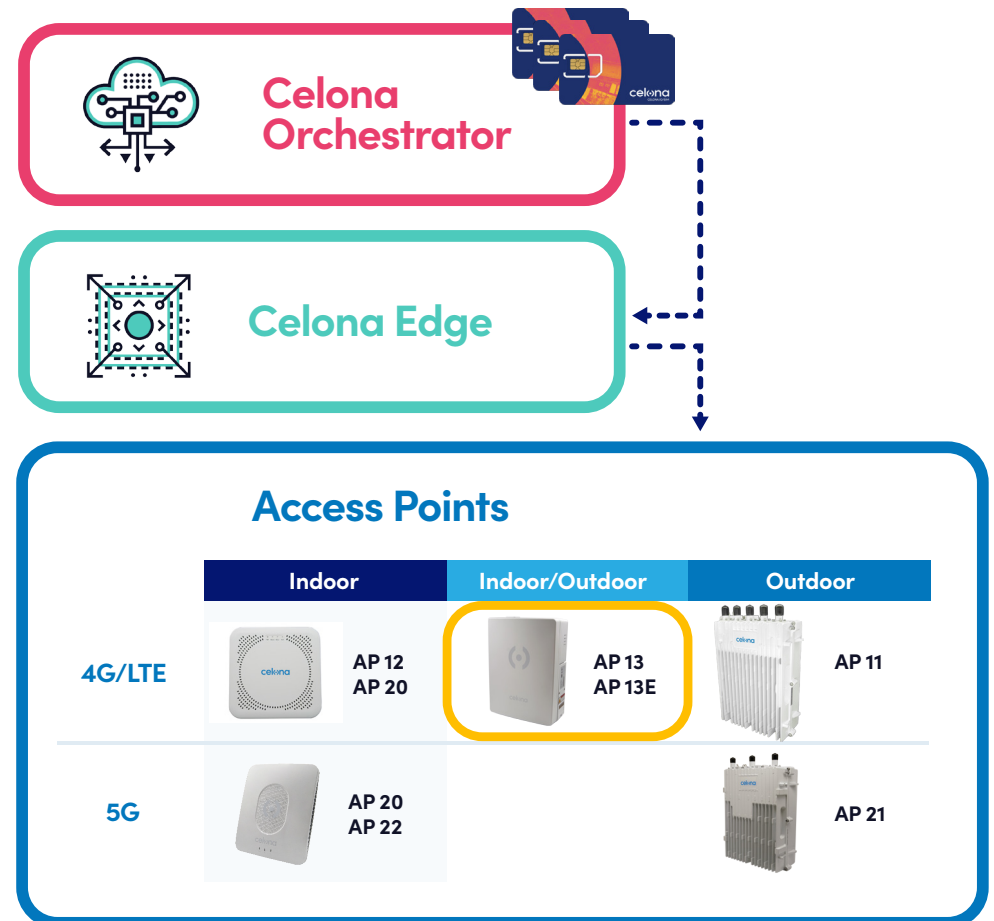
- Turn-key solution, designed for the enterprise
- Deterministic performance for mission-critical applications
- Enterprise friendly management and operations

## Celona's Access Point Portfolio

### Key benefits of Celona's 5G LAN Access Points

- Plug-and-play deployment
- Zero touch QoS end-end with MicroSlicing™
- Deploy anywhere: Indoor/Outdoors, poles or wall
- Built for tough environments – Ruggedized , IP65 rated
- Seamless integration with existing enterprise L2/L3 network
- Built-in PTP Grandmaster, eliminates external components
- End-End secure wireless communication

## Celona's 5G LAN



# Specifications

## High Level Specifications

Type	4G Access Point (3GPP Rel. 13 TDD)
Frequency Band Support	3.55 – 3.7 GHz
RF Specifications	2x2 MIMO UL/DL, up to 64 QAM Modulation, Carrier Aggregation
Power (Rx/Tx)	Up to 24 dBm max per port
Connected Devices	Active: 96 (concurrent)
Dimensions (WxDxH)	AP 13: 12.2 x 8.9 x 4.1 (inches)   309 x 227 x 104 (mm) AP 13E: 15 x 8.9 x 3 (inches)   381 x 227 x 75 (mm)
Weight	AP 13: 10.7 lbs   4.85 kg AP 13E: 10.5 lbs   4.75 kg
Environmental	Operating Temperature: -40° to 55°C Storage Temperature: -45° to 70°C Humidity: 5% to 95% non-condensing
IP (Ingress Protection) Rating	IP65
Surge Protection	Yes
Installation	Pole or wall mount
Power Consumption	25.5 W (maximum)
MTBF	>150K hours

## Ports and Interfaces

Network Interfaces	1 RJ-45 Ethernet interface (1 GE)
Antenna	AP 13: Built-in 65D internal antennas (max 13.5 dBi antenna gain) AP 13E: External antennas sold separately <ul style="list-style-type: none"><li>Omnidirectional or directional</li><li>Two 2-port, or one 4-port per AP</li></ul>
Power Supply	802.3bt Type 3 (PoE injector included)
Timing	AP 13: Built-in GPS synchronization AP 13E: GPS (antenna included) and IEEE 1588v2 PTP
LED Indicators	Power, Cell 1, Cell 2, Alarm

## Compliance and Certifications

- FCC Part 96 Cat A/B

## Performance Specifications

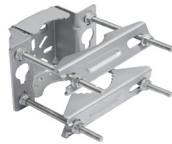
TDD Config 1 Peak Data Rates	Download: 150 Mbps, with Carrier Aggregation Upload: 25 Mbps per radio, 50 Mbps per AP
TDD Config 2 Peak Data Rates	Download: 200 Mbps, with Carrier Aggregation Upload: 12 Mbps per radio, 24 Mbps per AP

## What's in the box?

### AP 13



AP 13



Pole and Wall Mount



PoE injector

### AP 13E



AP 13E



Pole and Wall Mount



GPS Antenna



PoE injector

## Ordering Information

Celona Medium Power AP 13 & AP 13E are included in the Celona private mobile network subscription, scaling with the number of access points in the network.

<b>CN-SUB-MPWI-3</b>	3 year 4G private wireless service subscription for one medium power access point including management, SIM provisioning, mobile core services via Celona Edge software and Celona Orchestrator cloud service. Includes 4G category A/B b48 (3550-3700 MHz) access point with integrated antennas, Celona express technical support, limited lifetime warranty and 40 private SIM cards.
<b>CN-SUB-MPWI-5</b>	5 year 4G private wireless service subscription for one medium power access point including management, SIM provisioning, mobile core services via Celona Edge software and Celona Orchestrator cloud service. Includes 4G category A/B b48 (3550-3700 MHz) access point with integrated antennas, Celona express technical support, limited lifetime warranty and 40 private SIM cards.
<b>CN-SUB-MPWE-3</b>	3 year 4G private wireless service subscription for one medium power access point including management, SIM provisioning, mobile core services via Celona Edge software and Celona Orchestrator cloud service. Includes 4G category A/B b48 (3550-3700 MHz) access point, Celona express technical support, limited lifetime warranty and 40 private SIM cards. Separate external antennas purchase required.

<b>CN-SUB-MPWE-5</b>	5 year 4G private wireless service subscription for one medium power access point including management, SIM provisioning, mobile core services via Celona Edge software and Celona Orchestrator cloud service. Includes 4G category A/B b48 (3550-3700 MHz) access point, Celona express technical support, limited lifetime warranty and 40 private SIM cards. Separate external antennas purchase required.
<b>CN-ANT-OMNI-KIT</b>	Omni-directional antenna with 3.3-3.8 GHz frequency range, horizontal/vertical polarization type, 13 dBi gain, 7 degree vertical beamwidth, 360 degree horizontal beamwidth, 1 degree electrical downtilt, 30 dB port isolation, 2 x Type N Female connectors and 1-year warranty. Each antenna comes with an accessory kit of two surge protectors and two 10-ft LMR400 antenna cables. Each Celona AP 13E has four connectors and requires two 2-port or one 4-port external antennas.
<b>CN-ANT-33D-KIT</b>	33-degree sector antenna with 3.5-4.2 GHz frequency range, polarization type of 45 degree slant, 18.8 dBi gain, 8 degree vertical beamwidth, 33 degree horizontal beamwidth, 4 degree electrical downtilt, 35 dB front to back ratio, 2 x Type N Female connectors and 1-year warranty. Each antenna comes with an accessory kit of two surge protectors and two 10-ft LMR400 antenna cables. Each Celona AP 13E has four connectors and requires two 2-port or one 4-port external antennas.
<b>CN-ANT-90D-KIT</b>	90-degree sector antenna with 3.3-3.8 GHz frequency range, polarization type of 45 degree slant, 16.7 dBi gain, 6.5 degree vertical beamwidth, 45 degree horizontal beamwidth, 2 degree electrical downtilt, 31 dB front to back ratio, 2 x Type N Female connectors and 1-year warranty. Each antenna comes with an accessory kit of two surge protectors and two 10-ft LMR400 antenna cables. Each Celona AP 13E has four connectors and requires two 2-port or one 4-port external antennas.
<b>CN-ANT-120D-KIT</b>	120-degree sector antenna with 3.3-3.8 GHz frequency range, polarization type of 45 degree slant, 14.5 dBi gain, 7 degree vertical beamwidth, 120 degree horizontal beamwidth, 3.5 degree electrical downtilt, 30 dB front to back ratio, 2 x Type N Female connectors and 1-year warranty. Each antenna comes with an accessory kit of two surge protectors and two 10-ft LMR400 antenna cables. Each Celona AP 13E has four connectors and requires two 2-port or one 4-port external antennas.
<b>CN-ANT-65D-KIT</b>	120-degree sector antenna with 3.3-3.8 GHz frequency range, polarization type of 45 degree slant, 14.5 dBi gain, 7 degree vertical beamwidth, 120 degree horizontal beamwidth, 3.5 degree electrical downtilt, 30 dB front to back ratio, 2 x Type N Female connectors and 1-year warranty. Each antenna comes with an accessory kit of two surge protectors and two 10-ft LMR400 antenna cables. Each Celona AP 13E has four connectors and requires two 2-port or one 4-port external antennas.

## Renewal Subscriptions

<b>CN-SUB-MPWI-1-R</b>	1 year renewal of 4G private wireless service subscription for one existing medium power access point with integrated antennas including management, SIM provisioning, mobile core services via Celona Edge, Celona Orchestrator cloud service, and Express technical support.
<b>CN-SUB-MPWI-2-R</b>	2 year renewal of 4G private wireless service subscription for one existing medium power access point with integrated antennas including management, SIM provisioning, mobile core services via Celona Edge, Celona Orchestrator cloud service, and Express technical support.
<b>CN-SUB-MPWE-1-R</b>	1 year renewal of 4G private wireless service subscription for one existing medium power access point including management, SIM provisioning, mobile core services via Celona Edge, Celona Orchestrator cloud service, and Express technical support.
<b>CN-SUB-MPWE-2-R</b>	2 year renewal of 4G private wireless service subscription for one existing medium power access point including management, SIM provisioning, mobile core services via Celona Edge, Celona Orchestrator cloud service, and Express technical support.

## Warranty

Limited lifetime warranty coverage for Celona AP 13 & AP 13E is included as part of an active Celona Private Mobile Network subscription.

