

**ORDERING GUIDE**

# CELONA OUTDOOR ANTENNAS

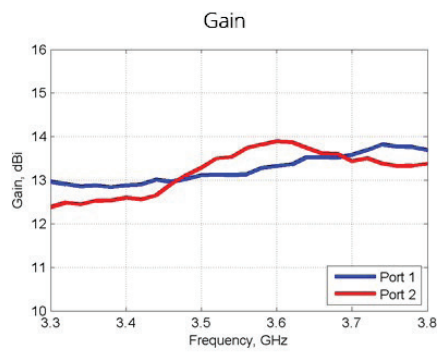
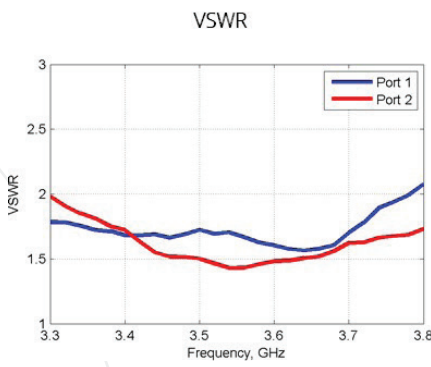
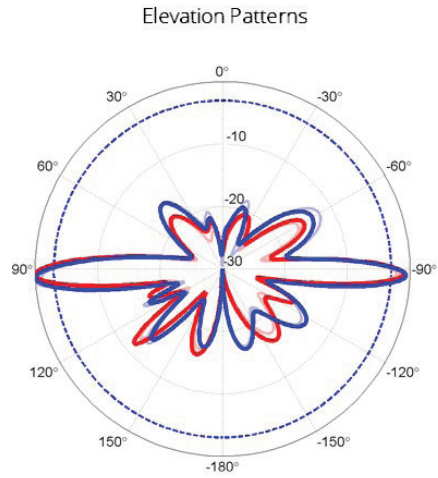
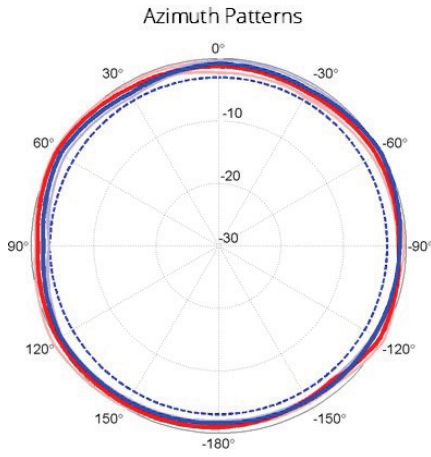
## CELONA OUTDOOR ANTENNA OMNI R7C47A

2 per Celona outdoor AP includes a 36-inch antenna cable.

ELECTRICAL SPECIFICATIONS		MECHANICAL SPECIFICATIONS	
Frequency range	3300-3800 MHz	Dimensions	33" x 6" x 5"   83.82cm x 15.24cm x 12.7cm
Polarization	Vertical and Horizontal	Weight	5 lb   2.27 kg
Gain	13 dBi	Mounting method	Mast
Elevation 3dB beamwidth	7 °	Mounting pole dia	1.6 – 2.4"
Electrical Downtilt	1 °	Radome material	UV resistant PVC
VSWR	< 2:1	ENVIRONMENTAL	
Return loss	> 10 dB	Temperature range	-40° to +65° C / +150° F
Cross-pol ratio	> 20 dB	Wind speed	210 km/h / 130 mph
V-H port isolation	> 30 dB	UV protection	UV resistant PVC
Input power	50 W max per port	Ingress protection	IP55 rain resistant
Impedance	50 Ω	Lightning protection	DC Ground
Connector Type	Type N Female x 2		



GRAPHICAL DATA





## CELONA CBRS 33-DEGREE ANTENNA R7C48A

### 3.5 GHz to 4.2 GHz, 33 Degree Sector Antenna, 18.8 dBi, 2-Port, ±45 Slant

- 4° fixed electrical down tilt
- ProLine sector with stable and high gain
- Interference mitigation with azimuth and elevation side-lobe suppression
- 2 per Celona outdoor AP. Includes 36-inch antenna cable.

ELECTRICAL SPECIFICATION			
Frequency Band	MHz	3500—3800	3800—4200
Gain	dBi	18.5±0.2	18.8±0.3
Polarization		Slant (±45°)	Slant (±45°)
Horizontal HPBW	Degree	35±1	33±1
Horizontal Squint	Degree	±0.5	±0.5
Vertical HPBW	Degree	8.5±0.5	7.8±0.4
Electrical Downtilt	Degree	4	4
Front-to-Back Ratio @ 180°±30°	dB	35	33
Upper Side Lobe Suppression (+20°)	dB	15	15
Cross-polarization Ratio over HPBW	dB	15	13
VSWR		1.3 typ   1.5 max	1.3 typ   1.5 max
Return Loss	dB	17 typ   14 max	17 typ   14 max
Port-to-Port Isolation	dB	30	25
Max. Input Power per Port	W	50	50
Impedance	Ohms	50	50

MECHANICAL SPECIFICATIONS	
RF Connector Type	N-Type Female
RF Connector Quantity	2
RF Connector Position	Bottom of radome
Electrical Grounding	RF connector grounded to reflector and mounting bracket
Radome Material	UV resistant PVC
Reflector Material	Fully-Enclosed Aluminium
Ingress Protection	IP55 rain and dust resistant
Wind Load, frontal	135N @ 160km/h   30lbf @ 100mph
Max. Wind Speed	160km/h   100mph
Temperature Range	-40° to +60° C   -40° to +140° F



### BRACKET SPECIFICATIONS

Material Type	Powder Coated High-Strength Aluminium
Mechanical Tilt (Degree)	-1 to +18 (Slot 1)   -7 to +11 (Slot 2)
Mounting Type	Pipe Mount
Mounting pole diameter	19 mm – 114 mm   0.75 in – 4.5 in
Antenna-to-Pipe Distance	121 mm   4.8 in
Bracket-to-Bracket Distance	470 mm   18.5 in

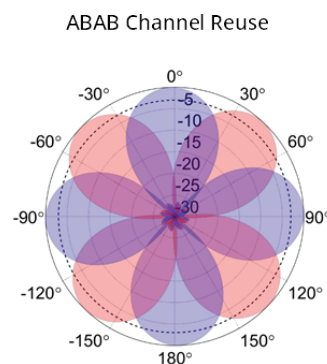
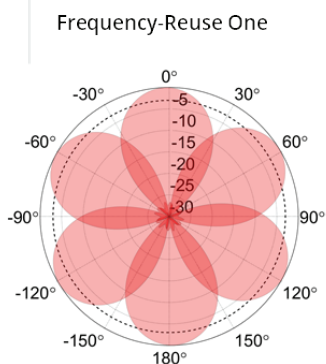
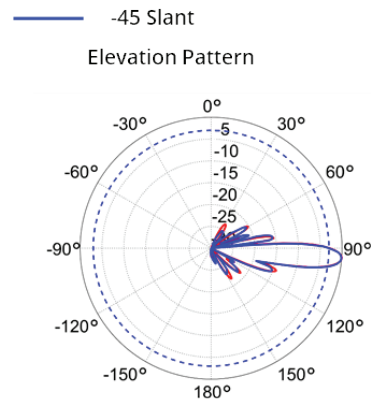
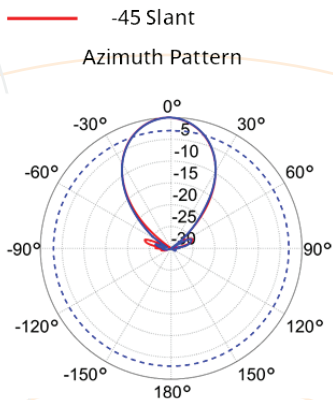
### SECTOR DIMENSIONS

Length	585 mm   23.0 in
Width	174 mm   6.9 in
Height	79 mm   3.1 in
Net Weight, with brackets	5.7 kg   12.5 lb

### SHIPPING DIMENSIONS

Length	800 mm   31.5 in
Width	240 mm   9.4 in
Height	210 mm   8.3 in
Net Weight	5.8 kg   12.8 lb

### GRAPHICAL DATA





## CELONA CBRS 90-DEGREE ANTENNA

### R7C49A

#### 2-port sector antenna, 3300-3800 MHz, 90° HPBW

- High gain and slant dual polarization
- Simultaneously maximize coverage and minimize interference
- Ideal for 3-sector frequency-reuse one with LTE equipment
- 2 per Celona outdoor access point. Includes 36-inch antenna cables.

#### ELECTRICAL SPECIFICATION

Frequency Band	MHz	3300—3550	3550—3800
Gain	dBi	16.7±0.25	16.5±0.25
Polarization		Slant (±45°)	Slant (±45°)
Horizontal HPBW	Degree	85±2	90±2
Horizontal Skew	Degree	±2	±3
Vertical HPBW	Degree	7±0.25	6.5±0.25
Electrical Downtilt	Degree	2	3.5
Front-to-Back Ratio @ 180°	dB	31	35
Front-to-Back Ratio @ 180°±30°	dB	28	28
Cross-polarization Ratio at Boresight	dB	25	23
Cross-polarization Ratio over HPBW	dB	20	17
VSWR		1.5 typ   1.7 max	1.3 typ   1.5 max
Return Loss	dB	14 typ   12 max	18 typ   14 max
Port-to-Port Isolation	dB	25	30
Max. Input Power per Port	W	50	50
Impedance	Ohms	50	50

#### MECHANICAL SPECIFICATIONS

RF Connector Type	Type N Female
RF Connector Quantity	2
RF Connector Position	Bottom of radome
Electrical Grounding	RF connector grounded to reflector and mounting bracket
Radome Material	UV resistant PVC
Ingress Protection	IP55 rain and dust resistant
Wind Load, frontal	240N @ 160km/h   54 lbf @ 100mph
Max. Wind Speed	160km/h   100mph
Temperature Range	-40° to +60° C   -40° to +140° F



### BRACKET SPECIFICATIONS

Material Type	Hot Dipped Galvanized Steel
Mechanical Tilt (Degree)	-4 – 16
Mounting Type	Pipe Mount
Mounting pole diameter	25 mm – 89 mm   1¼ in – 3½ in
Antenna-to-Pipe Distance	131 mm   5 in
Bracket-to-Bracket Distance	490 mm   19 in

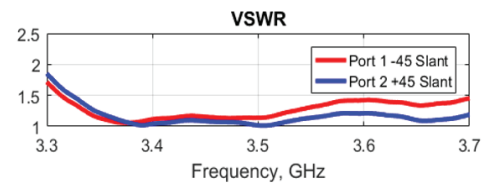
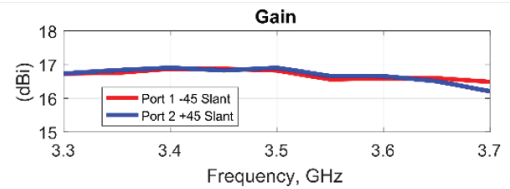
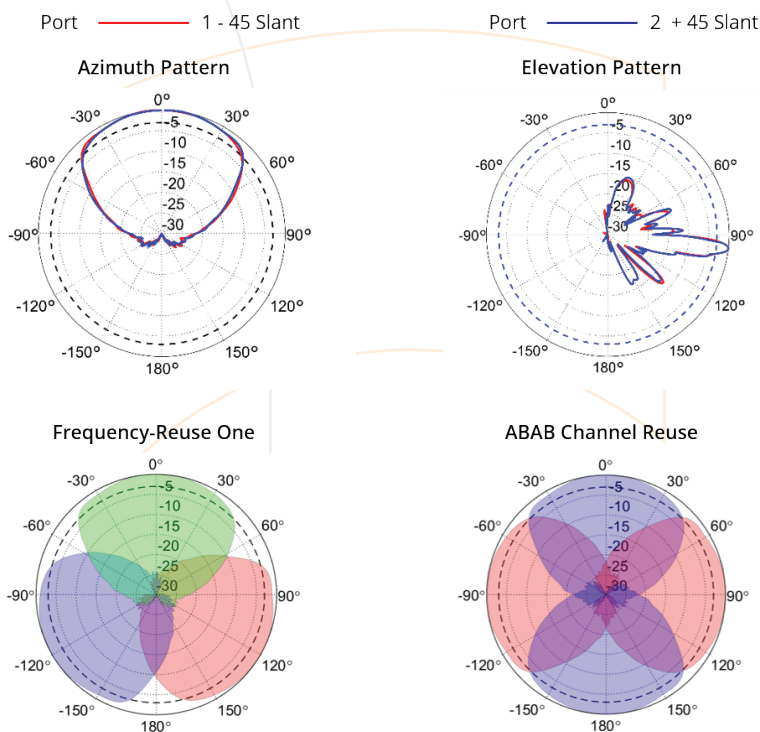
### SECTOR DIMENSIONS

Length	710 mm   27 in
Width	170 mm   7 in
Height	89 mm   3.5 in
Net Weight, with brackets	3.2 kg   10 lb

### SHIPPING DIMENSIONS

Length	762 mm   30 in
Width	250 mm   10 in
Height	200 mm   8 in
Net Weight, with brackets	6.8 kg   15 lb

### GRAPHICAL DATA





## CELONA CBRS 120-DEGREE ANTENNA R7C50A

### 2-port sector antenna, 3300-3800 MHz, 120° HPBW

- High gain and slant dual polarization
- Simultaneously maximize coverage and minimize interference
- Ideal for 2-sector frequency-reuse one with LTE equipment
- 2 per Celona outdoor access point. Includes 36-inch antenna cables.

ELECTRICAL SPECIFICATION			
Frequency Band	MHz	3300—3550	3550—3800
Gain	dBi	15±0.25	15.5±0.25
Polarization		Slant (±45°)	Slant (±45°)
Horizontal HPBW	Degree	115±5	120±5
Horizontal Squint	Degree	±4	±2
Vertical HPBW	Degree	8±1	7±1
Electrical Downtilt	Degree	3.5	3
Front-to-Back Ratio @ 180°	dB	35	35
Front-to-Back Ratio @ 180°±30°	dB	28	30
Cross-polarization Ratio at Boresight	dB	25	20
Cross-polarization Ratio over HPBW	dB	15	14
VSWR		1.7 typ   2 max	1.5 typ   1.7 max
Return Loss	dB	12 typ   10 max	14 typ   12 max
Port-to-Port Isolation	dB	20	25
Max. Input Power per Port	W	50	50
Impedance	Ohms	50	50

MECHANICAL SPECIFICATIONS	
RF Connector Type	Type N Female
RF Connector Quantity	2
RF Connector Position	Bottom of radome
Electrical Grounding	RF connector grounded to reflector and mounting bracket
Radome Material	UV resistant PVC
Ingress Protection	IP55 rain and dust resistant
Wind Load, frontal	220N @ 160km/h   49lbf @ 100mph
Max. Wind Speed	160km/h   100mph
Temperature Range	-40° to +60° C   -40° to +140° F



### BRACKET SPECIFICATIONS

Material Type	Hot Dipped Galvanized Steel
Mechanical Tilt (Degree)	-4 – 15
Mounting Type	Pipe Mount
Mounting pole diameter	25 mm – 89 mm   1¼ in – 3.5 in
Antenna-to-Pipe Distance	127 mm   5 in
Bracket-to-Bracket Distance	546 mm   21.5 in

### SECTOR DIMENSIONS

Length	736 mm   29 in
Width	178 mm   7 in
Height	89 mm   3.5 in
Net Weight, with brackets	5.0 kg   11 lb

### PACKAGE DIMENSIONS

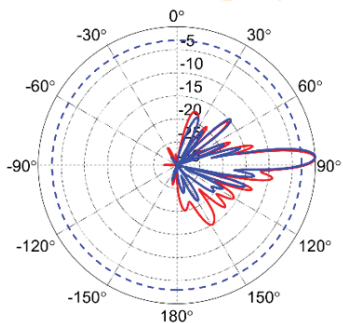
Length	813 mm   32 in
Width	305 mm   12 in
Height	229 mm   9 in
Net Weight	8.2 kg   18 lb

### GRAPHICAL DATA

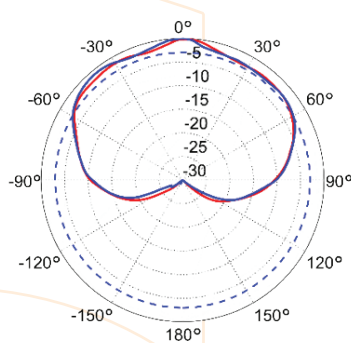
Port 1 - 45 Slant

Port 2 + 45 Slant

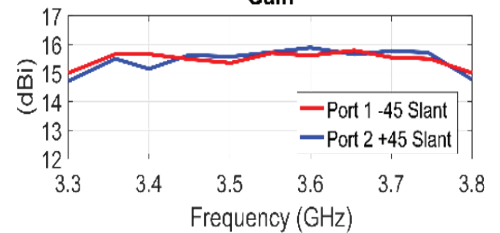
Azimuth Pattern



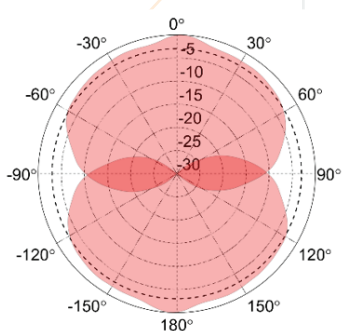
Elevation Pattern



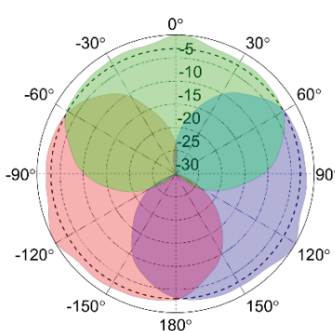
Gain



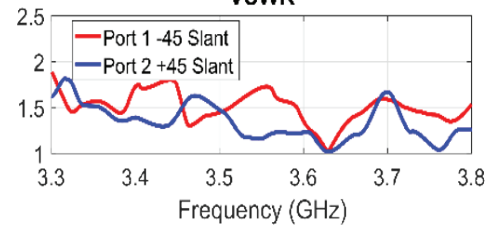
Frequency-Reuse One



Three Sector Deployment



VSWR







## APPENDIX

HPBW: Average and variation of the antenna's 3dB beamwidth (half power beamwidth) in its horizontal (Azimuth) or vertical (Elevation) pattern.

Horizontal Squint: Angle in the antenna's azimuth pattern in which the maximum gain occurs. Reported is the maximum variation in the frequency band.

Electrical Downtilt: Angle in the antenna's elevation pattern in which the maximum gain occurs.

Gain: Antenna's average gain and variation in each frequency band.

Front to Back Ratio @  $180^{\circ} \pm 30^{\circ}$ : Difference between the antenna's maximum gain and the maximum gain in the antenna's back lobe over  $\pm 30^{\circ}$  angles.

Upper Side Lobe Suppression: The maximum value for the antenna's elevation upper side lobes from the main beam to  $+20^{\circ}$ .

Cross-polarization Ratio over HPBW (dB): Maximum difference between the co-polarization and cross-polarization gain across the sector's HPBW.

## DEPEND ON CELONA



Celona, the enterprise 5G company, is focused on accelerating the adoption of business-critical apps on enterprise wireless and helping organizations implement new generation of digital business initiatives. Taking advantage of the Citizens Broadband Radio Service (CBRS) in the United States, Celona's solution architecture is designed to automate deployment of cellular wireless technology by enterprise organizations and their technology partners. For more information, please visit [celona.io](https://www.celona.io) and follow Celona on Twitter @celonaio.

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