



Delta0 Series
EXPOSED FOLDED VHF UHF
DIPOLE 4-Bay Array
195-245 MHz



Electromagnetics
"Quality is everything."

JAG-220-4-EX-FM



FedEx
Shippable

- Ham Radio
- Telemetry
- Land mobile networks
- Public security and safety
- Transportation networks



JAG-220-4-EX-FM Product Specification Sheet.

Electrical Specifications		Mechanical Specifications		Environmental	
Model JAG-220-4-EX-FM	<small>**Value depends on λ, spacing and dipole orientations</small>	Model JAG-220-4-EX-FM	<small>***Based on 4 dipoles mounted on 15-foot 2-inch AL mast pipe</small>	Model JAG-220-4-EX-FM	
Frequency Range (MHz)	195 – 245	Height	inches (mm)*** 181 (4,597)	Survival Wind Velocity With no Ice	<small>*Values based on 15-foot 2-inch O.D. AL mast & 1/2" spacing</small> mph (km/h) 110 (177)*
Bandwidth @ 1.5:1 VSWR or Better (MHz)	50	Width	inches (mm)*** 36 (914.4)	Survival Wind Velocity With Ice	<small>*Values based on 15-foot 2-inch O.D. mast & 1/2" spacing</small> mph (km/h) 80 (128)*
Polarization	Vertical	Depth	inches (mm)*** 4.25 (108)	Maximum Allowable Radial Ice Buildup	<small>*Values based on 15-foot 2-inch O.D. AL mast & 1/2" spacing</small> inches (mm) 0.5 (12.7)*
Radiation Pattern	Adjustable (See pages 2 & 3)**	Weight	lb (kg) <small>*Value based on supplied antenna with AL mast</small> 55 (24.96)*	Equivalent Flat Plate Area	<small>*Values based on 15-foot 2-inch O.D. AL mast & 1/2" spacing</small> ft^2 (m^2) 4.51 (0.42)*
Nominal Gain (dBd)	5.45 – 8.25 (Depending on spacing)**	Support Mast Outside Diameter	Inches (mm) 2.375 (60.3)* <small>*See JAG Delta0 Series application notes for details on other masts</small>	Lateral thrust (100mph) 0 Radial Ice Buildup	<small>*Values based on 15-foot 2-inch O.D. AL mast & 1/2" spacing</small> lbs (N) 173 (769.5)*
Nominal Horizontal 3dB Beamwidth (Deg)	205 – 215	Support Mast Allowable Clamping Space	Inches (mm) 55 (1,397)* <small>*See JAG Delta0 Series application notes for additional details</small>	Torsional moment (100mph) 0 Radial Ice Buildup	<small>*Values based on 15-foot 2-inch O.D. AL mast & 1/2" spacing</small> ft-lbs (Nm) 157 (212)*
Nominal Vertical 3dB Beamwidth (Deg)	15 – 19	Mounting Information	4 dipole clamps supplied	Bending moment (100mph) 0 Radial Ice Buildup	<small>*Values based on 15-foot 2-inch O.D. AL mast & 1/2" spacing</small> ft-lbs (Nm) 761 (1027.4)*
Maximum Average Power (Watts)	300	Pigtail (ft) & RF Connector	10 – 10.5 & 'N' Male		
Lightning Protection	DC Ground		<small>Note: See JAG antenna options page for other connectors and pigtail lengths.</small>		

Specifications are subject to change without notice. As a result, all information contained in the present datasheet is subject to confirmation at time of ordering.

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Issue: 1

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Features

- 5-year factory warranty (See page 3)
- Broadband (50 MHz)
- Suitable for multi-frequency systems
- Soldered internal joints
- Small for easy transport and installation
- Field adjustable pattern and gain
- DC Grounded
- Stainless steel hardware
- Easy storage
- Operation in harsh environments
- Optional mast pipe can be supplied*
- Natural rubber plugs
- Side or tower top mountable
- Optional coatings such as black paint
- Optional downtilt versions
- Ideal for rented or temporary repeaters
- Ideal for monitoring stations
- Fits in standard Otis Elevators

Description

The JAG-220-4-EX-FM is a 4-bay version of the JAG-220-1-EX-FM, which is supplied with an aluminum mast that utilizes the JAG-Flange-System™. Its unique high efficiency wide bandwidth design allows it to cover the entire 195-245 MHz frequency span with a VSWR of 1.5:1 or better. Because of its bandwidth and very low intermodulation response, the JAG-220-4-EX-FM is useful in a wide range of functions ranging from trunking, business, public safety, government and even amateur radio plus endless other applications.

The JAG-220-4-EX-FM as well as the rest of the multi-bay arrays that are based on it feature 6061-T6 aluminum and stainless steel construction. Features such as high quality coax, soldered and welded joints as well as minimized dissimilar metal contacts ensure trouble free operation.

This series (Delta0) is based on an external harness design, which allows easy field adjustment of gain and radiation pattern. The external harness design also offers flexibility in mounting scenarios from tower legs to various pipe sizes. The absence of full-length masts, make Delta0 series easy to transport, install, and ship.

Rugged construction, lightweight, and ease of installation, makes the JAG-220-4-EX-FM ideal for leased or rented system use. Its bandwidth also makes it perfect to stock for re-use or re-sale.

JAG-220-4-EX-FM at a glance

Note: Only one of the dipoles out of the 4 bays is shown here for illustration purposes. Gain values below represent complete antenna (not a single dipole).



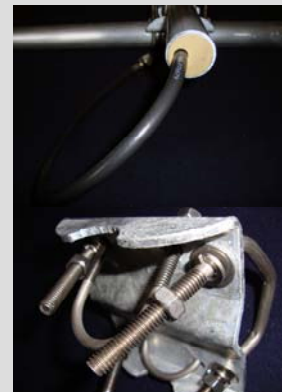
1/4 - wave spacing
(5.95 – 8.5 dBd gain)
(Omnidirectional – Offset pattern)



1/2 - wave spacing
(8 dBd gain)
(Bi-directional / Elliptical pattern)



Heavy-duty dipole fixture



Natural rubber plugs &
Heavy-duty galvanized
clamp w/S.S. hardware

*Site-specific mounting masts and clamps are recommended for Delta0 Series antennas. Please consult JAG to determine suitable accessories for your application.

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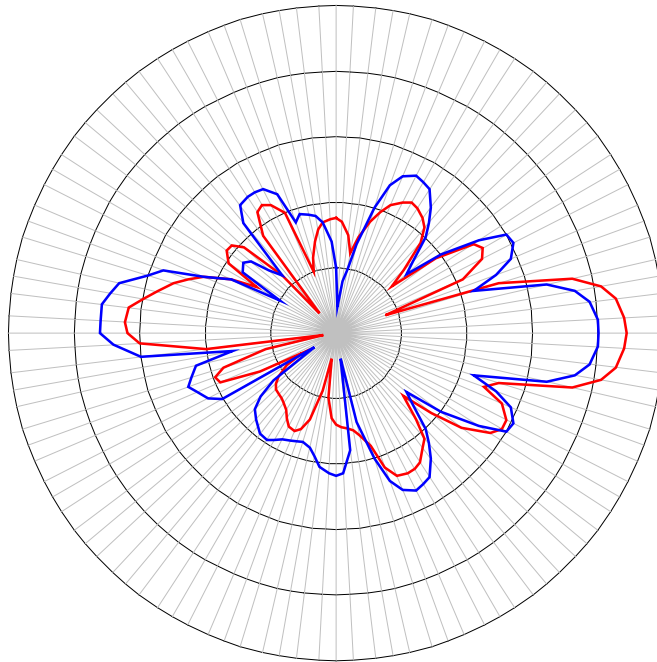


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JAG-220-4-EX-FM

Vertical Radiation Pattern For Vertical Polarization



Elevation

— Quarter Wave Spacing — Half Wave Spacing

* This is a general representation of the Delta0 Series JAG-220-4-EX-FM antenna radiation pattern. For the latest detailed pattern contact JAG Applications Engineering.

JAG-220-4-EX-FM Product Specification Sheet.

WARRANTY

JAG Electromagnetics warrants all its products against defects in material or workmanship and is only applicable if failure results from these factors within five years from the purchase date by the user. Jag Electromagnetics will be responsible for the supply, at no charge, of new or rebuilt replacements in exchange for defective parts for the duration of the warranty. This warranty does not extend to any JAG products that have been subject to misuse, neglect, accident, improper installation or application. In addition, this warranty does not extend to products that have been repaired or substantially altered outside our manufacturing plant.

JAG Electromagnetics will not be liable for any incidental or consequential damages due to failure of a JAG product under this warranty or any implied warranty. JAG is in no event liable for consequential damages or other costs of any kind as a result of the use of the products manufactured by JAG. No envoy is sanctioned to presume for JAG any other legal responsibility in connection with JAG products. JAG Electromagnetics is not accountable for replacement of any product damaged by lightning.

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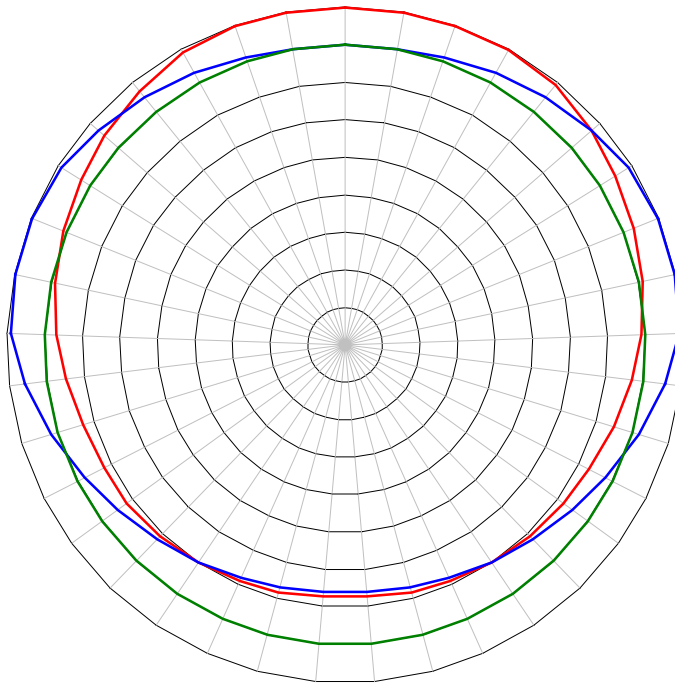
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Horizontal Pattern For Vertical Polarization



*Note: 1/4λ Gain ≅ 8.5 dBd, 1/2λ Gain ≅ 8 dBd, Omni Gain ≅ 5.95 dBd

Azimuth — Quarter Wave Spacing — Half Wave Spacing — Omnidirectional

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