



DCR-E

- Ideal for Class A and B stations
- 4 kW for a single bay
- Radomes optional

The DCR-E antenna is a low-power version of the DCR-C and is available in one through twelve bays with an input power rating up to 12 kW. For situations where ice formation is common, the arrays can be equipped with radomes. The antenna is DC grounded for lightning protection and does not require shorting stubs.

End-Fed or Center-Fed Arrays

Two power distribution methods are used with the DCR-E antenna. The array is usually end-fed unless it includes beam tilt and/or null fill. In this case, the sections are fed from a center point. The input connection in either case is 1 5/8" EIA.

Beam Tilt & Null Fill

Beam tilt and/or null fill are optional extras on the DCR-E series. If optional beam tilt or null fill is specified, the antenna is designed as a center-fed array.

Directional Arrays

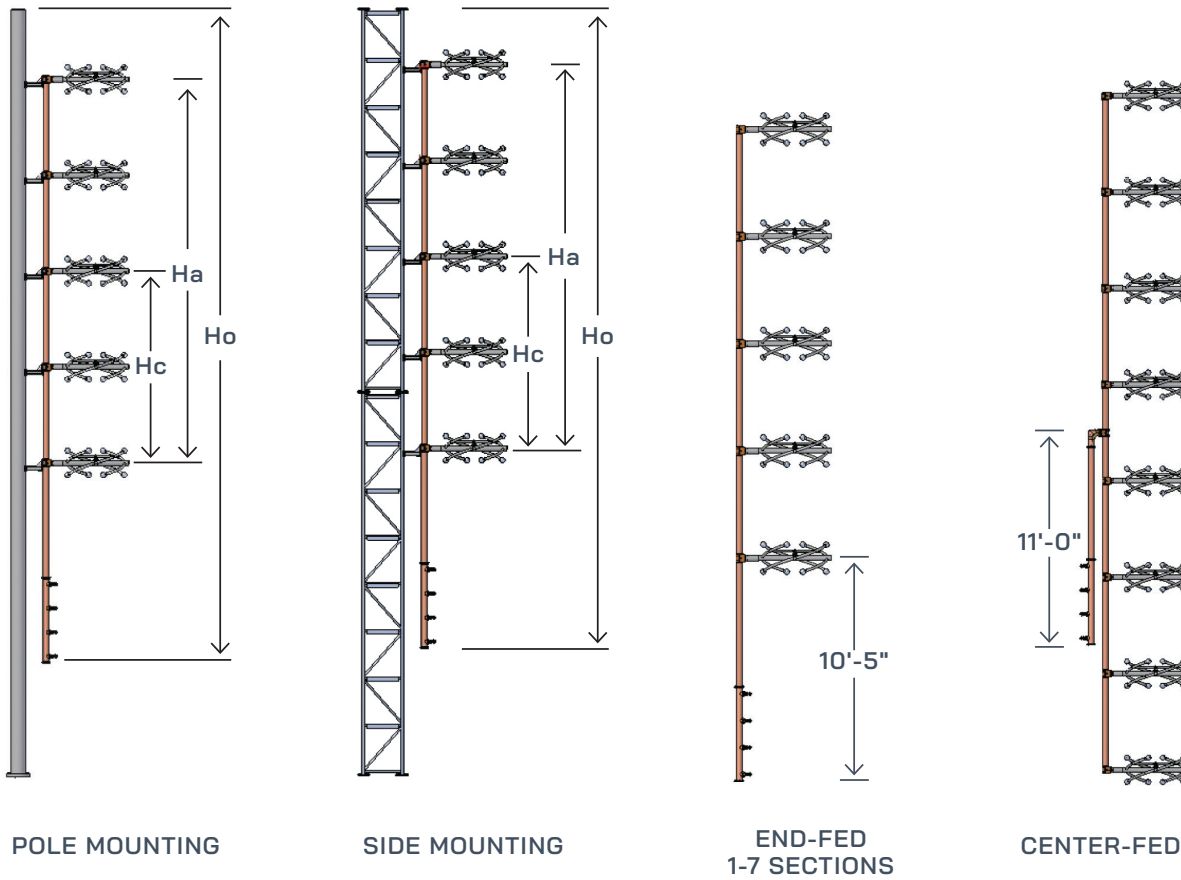
The DCR-E antenna is available in directional arrays which are custom-built to the needs of the station.

Low downward radiation options available – contact factory.

General Specifications

Polarization	Circular
Pattern Circularity in Free Space	± 1 dB
VSWR (max.) at Input w/o field trim	Top Mounted: 1.2:1 / Side-Mounted: 1.5:1
VSWR (max.) at Input w/ field trim, Top or Side Mounted (± 100 KHz)	1.07:1
Input	1 5/8" EIA

Mounting Dimensions



H_a = Antenna aperture length
 H_c = Antenna center of radiation
 H_o = Antenna overall length needed for mounting
 $H_a = 984/f \times [s(x-1)]$
 $H_c = H_a/2$
 $H_o \text{ end-fed} = H_a + 5' \text{top} + 10' - 5" \text{bottom}$
 $H_o \text{ center-fed} = H_a + 5' \text{top} + 5' \text{bottom}$
 All dimensions in feet
 f = frequency in megahertz (MHz)
 s = bay spacing in fraction of wavelengths
 example: $\frac{1}{2}$ wavelength = .5
 x = number of antenna bays

Note: Antennas ordered w/beam tilt and/or null fill are supplied with center feed and require even number of bays.

Electrical Specifications

Antenna Type DCR-H or HDR-H	Gain Polarization Spacing				Power Rating kW ³
	λ Spacing		$\frac{1}{2} \lambda$ Spacing		
	Power Gain	dB	Power Gain	dB	
DCR-E1	0.46	-3.37	—	—	4
DCR-E2	1.0	0	0.7	-1.55	8
DCR-E3	1.5	1.76	1.0	0	12
DCR-E4	2.1	3.22	1.3	1.14	12
DCR-E5	2.7	4.31	1.6	1.76	12
DCR-E6	3.2	5.05	1.8	2.55	12
DCR-E7	3.8	5.80	2.1	3.22	12
DCR-E8	4.3	6.34	2.4	3.80	12
DCR-E10	5.5	7.40	3.0	4.77	12
DCR-E12	6.6	8.2	3.6	5.56	12

Notes:

1. RMS gain data is given relative to dipole. Values are for midband and include standard harness configurations. Actual gain will vary depending on feed system, frequency, null fill, and beam tilt.
2. Average power ratings are nominal @ 40°C ambient. Assumes constant pressurization with dry air or nitrogen. Ratings may vary based on specific feed system design and local conditions.
3. Higher power ratings and custom feed systems may be available on request.
4. Antenna components and feed harnesses are optimized for FM channels of interest.
5. Specs. are for a single DCR-H antenna array, not both.

Mechanical Specifications

Without Randomes									
Antenna Type	# of Bays	Weight lbs (kg)				EPA (ft ²)			
		λ Spaced		$1/2 \lambda$ Spaced		λ Spaced		$1/2 \lambda$ Spaced	
		lbs	kg	lbs	kg	ft ²	m ²	ft ²	m ²
DCRE-1	1	54	24			3.7	0.3		
DCRE-2	2	99	45	92	42	7.5	0.7	6.7	0.6
DCRE-3	3	143	65	130	59	11.2	1	9.6	0.9
DCRE-4	4	188	85	168	76	15	1.4	12.5	1.2
DCRE-5	5	233	106	206	93	18.7	1.7	15.5	1.4
DCRE-6	6	277	126	243	110	22.5	2.1	18.4	1.7
DCRE-7	7	322	146	281	127	26.2	2.4	21.4	2
DCRE-8	8	468	212	370	168	30	2.8	24.3	2.3
DCRE-10	10	587	266	460	209	37.5	3.5	30.2	2.8
DCRE-12	12	705	320	551	250	45	4.2	36	3.3

Notes:

The 8, 10 & 12 bay antennas are center fed designs.

With Randomes

Weight lbs (kg)				EPA (ft ²)			
λ Spaced		$\frac{1}{2} \lambda$ Spaced		λ Spaced		$\frac{1}{2} \lambda$ Spaced	
lbs	kg	lbs	kg	ft ²	m ²	ft ²	m ²
84	38			4.7	0.4		
159	72	152	69	9.3	0.9	8.5	0.8
233	106	220	100	14	1.3	12.4	1.2
308	140	288	131	18.7	1.7	16.2	1.5
383	174	356	161	23.4	2.2	20.1	1.9
457	207	423	192	28	2.6	24	2.2
532	241	491	223	32.7	3	27.8	2.6
708	321	610	277	37.4	3.5	31.7	2.9
887	402	760	345	46.7	4.3	39.4	3.7
1065	483	911	413	56.1	5.2	47.1	4.4