COMMSCOPE®

Andrew® Solutions™

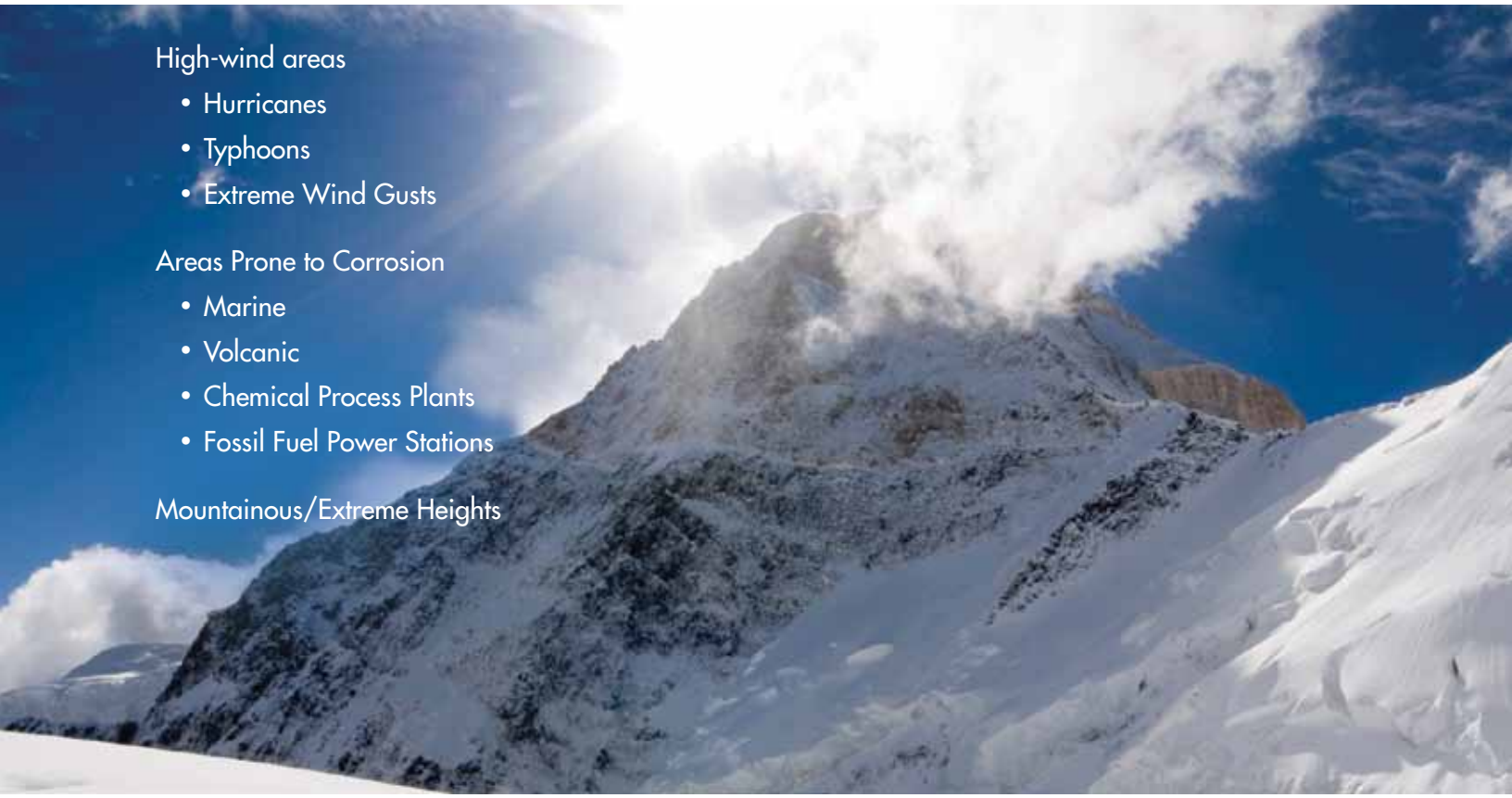
Think All Microwave Antennas are Designed the Same?

Think Again. Think ExtremeLine™

Exteme Performance in Extreme Conditions

on the go

All CommScope® antennas are designed to deliver excellent performance in a majority of global climates. Standard or shielded, these antennas feature rugged construction using high-quality materials.



In accordance with EIA195, these antennas exhibit minimal deflection and have survival* windspeeds up to 320 km/h (200 mph) with 25 mm (1 in) of radial ice. With an operational temperature range of –50° C to 70° C (–58° F to 158° F), they are an excellent choice for the majority of environments around the world.

Maximizing network productivity and minimizing costs in locations that produce extreme environmental conditions requires antennas that are tough as the environment. Introducing the ExtremeLine family of antennas from CommScope. Extreme performance for the most extreme environments.

**Survival wind speed is the maximum wind speed at which there is no permanent deformation of the antenna or any of its components.*

Selection of Corrosive Environment Antennas

1. Antennas sited off-shore should always be specified as corrosive environment.
2. Antennas sited on-shore in areas with a sea salt deposition of more than 80mg/(m2/day) should be specified as corrosive environment. Depending on local climatic factors, such conditions can prevail for a considerable distance inland.
3. Antennas situated in close proximity to smelting facilities, chemical works, or fossil fuel power stations (particularly those burning brown coal) should always be specified as corrosive environment.
4. Areas of high general pollution caused by traffic and industry may require corrosive environment antennas depending on the levels of pollution and the life required from the antenna.

   It must be remembered that the decision to install a particular specification of antenna is primarily economic. Although there is a premium for corrosive environment antennas, this is almost insignificant when considered in terms of the total lifecycle cost of the system, particularly if the antenna is forming part of a trunk network.

Features of Corrosive Environment Antennas

1. Fully epoxy painted aluminum reflector and shields
2. Epoxy painted galvanized steel mount
3. Epoxy painted feed assembly
4. Stainless steel assembly and adjusting hardware
5. Corrosion inhibiting compounds and sealants applied during installation

Extreme Environment Conditions

There are extreme climatic and environmental conditions that are beyond the normal limits of standard microwave antennas. CommScope offers alternative antenna options that take these extreme environments into consideration.

Types of Environments

Corrosive Environments

There are two general types of corrosive environments: marine and industrial. In marine environments, the main contaminant is sea water, while in industrial environments there can be a wide range of corrosive agents, including sulfur and nitrogen.

Marine Environment

The main corrosive agent in the marine environment is sodium chloride. It is present in sea water in typical concentrations of 3.4%, although this varies according to geographical location and climatic factors. Saline atmospheres arise as a result of salt water becoming suspended in the air due to wind and wave action. The concentration of this salinity and the resulting deposition varies throughout the world. In assessing the local environment, many factors need to be considered, including sea and air temperature, prevailing wind direction, local topography and relative humidity.

Industrial Environment

The concentration of contaminants present in an industrial atmosphere is normally lower than a marine environment, but the potential for corrosion may be higher. In addition, the area affected may be very localized, since contaminants will generally be quickly dispersed. The concentration of contaminants permitted will also vary from country to country according to local environmental control regulations.

Selection of High Wind Antennas

1. Identify the maximum mean hourly wind speed at the antenna site from local meteorological data.
2. Make suitable allowances for local terrain and the height of the antenna on the tower.
3. Determine the wind profile of the area. Is it generally calm with occasional windy periods, or is it a windy area with periods of extreme conditions?
4. Select the correct antenna for the conditions. Where the antennas may experience severe tropical storms, for example, the Caribbean during the hurricane season, then SE-Series antennas should be considered.
5. Is the antenna to be sited in a marine or corrosive environment? If so, consideration should be given to specifying a corrosive environment in addition to the high wind antenna.

Antenna Performance

All the antennas are designed so that there will not be plastic deformation of the antenna structure at any loading below the survival wind speed. However, because of the high probability of wind borne debris at extreme wind speeds, no guarantee can be made regarding the survival of the fabric radome.

The pointing accuracy of the antenna when mounted in accordance with the installation instructions will be less than half the 3dB beamwidth of the antenna.

High-Wind Environments

In determining the wind speed experienced by the antenna, not only should the basic maximum ground speed be examined, but also factors unique to the antenna site. Such factors include:

- Geographic Location
- Mountainous/Extreme Height
- Topographical Variations
- High-Wind Gusts

These factors work in combination and will generally give rise to a wind speed much higher than that seen at ground level.

Geographic Location

Figure 4, on page 5, illustrates the relative strength and scale of the major meteorological wind systems. Some of these systems are confined to limited geographical areas, for example, the tornado or twisters of the American Midwest. Others may be known by different names worldwide, for example, hurricanes in the North Atlantic, typhoons in the Pacific and willy-willy's in the Indian Ocean are all extreme tropical storms.

The common feature of these storms is that the mean wind speed is often above the design limit of standard microwave antennas. The winds associated with mid-latitude cyclones cause more difficulty. Normally the mean wind speed is well below the antenna design wind speed, but in extreme cases may have gusts above the standard antenna design limit. Local meteorological data will provide the probability of such extreme events and allow a decision to be made on antenna specification. Figure 5, on page 5, illustrates the percentage frequency of winds of more than 14 m/s (46 ft/sec). This data should be used with caution, because extreme winds usually are of relatively short duration, and may occur infrequently.

Mountainous/Extreme Height Environment

In general, the higher the antenna above ground level, the greater the mean wind speed. This relationship can be expressed as $V_H/V_{10} = (H/10)_A$, where V_H and V_{10} are the mean wind speed at H height and 10 m above ground respectively. The factor A varies from about 0.1 to 0.4, according to the landscape. A value of 0.17 is frequently used, but, strictly speaking, this applies to undulating terrain with few trees or obstructions. The table below quantifies the increase in wind speed for a range of typical antenna heights.

Height m (ft)	Wind speed km/h (mph)	Height m (ft)	Wind speed km/h (mph)
10 (33)	100 (62)	50 (165)	131.5 (82)
20 (66)	112.5 (69.5)	100 (330)	148 (92)
30 (100)	120.5 (75)	150 (500)	158.5 (98.5)

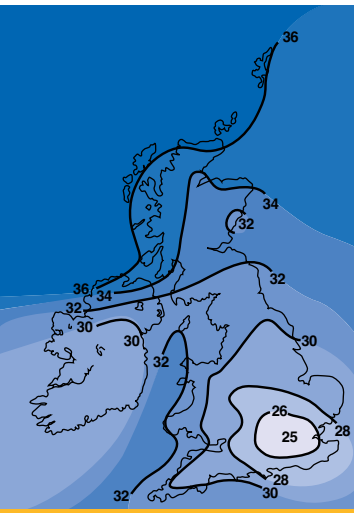


Figure 1
Maximum mean wind speed (m/s)

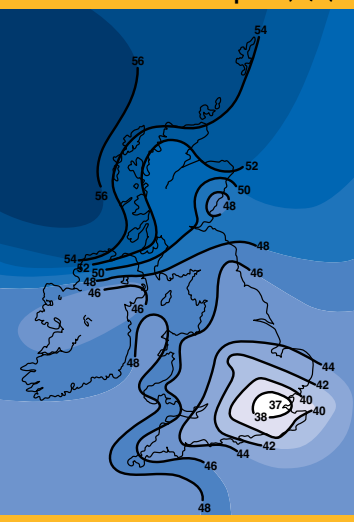


Figure 2
Maximum gust speed (m/s)

Topographical Variations

Where a steep sided valley narrows causing a funnelling effect, extreme wind speeds may result over a localized area. Similar effects occur where there are rapid changes in air temperature—for example, in mountainous areas close to the sea. The main effects of topography are localized, so one should gather as much site specific information as possible before determining the specification for the antenna.

High-Wind Gusts

High-wind gusts result mainly from the roughness of the earth's surface and are accentuated when the air flows over buildings and other obstacles. Gusts may also be caused by temperature convection currents. The data for extreme wind speed in gusts is normally measured over a minimum period of three seconds. For brief intervals the maximum speed may be higher. Although the mean wind speed may be relatively low, the maximum wind speed seen in a gust will be considerably higher—typically 50% higher for a five second gust in open country.

This does not take into account height or topographical factors amplifying the gusts. Figures 1 and 2 illustrate this point by showing the maximum hourly mean wind speed (m/s) occurring once in 50 years and the maximum gust speed (m/s) occurring once in 50 years.

Figure 3: Wind Systems

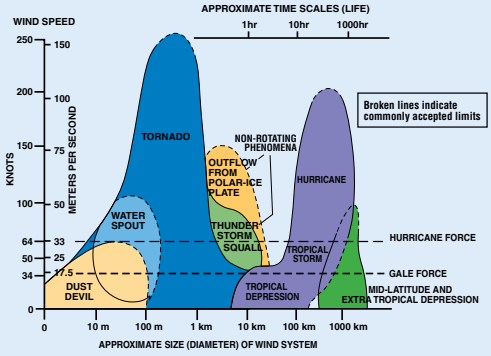


Figure 4: Major Storm Regions

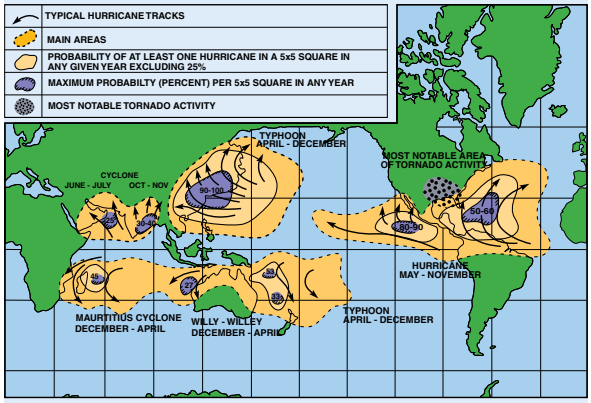
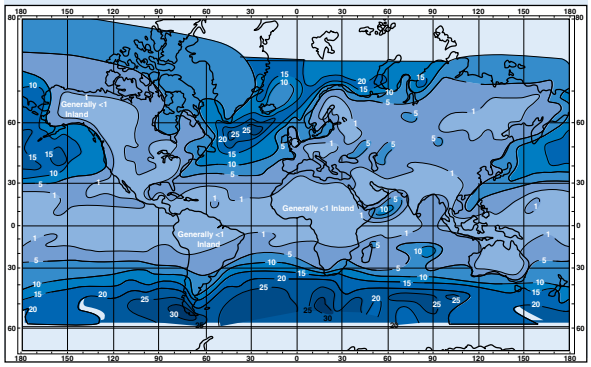


Figure 5: Global Occurence of High Winds



ExtremeLine Antennas for Extreme Environments

CommScope has developed a series of microwave antennas designed especially for extreme climatic and environmental conditions. The ExtremeLine™ family consist of our standard microwave antennas that have been carefully modified to provide excellent physical, mechanical, and electrical performance in extreme environments.

Within the ExtremeLine family there are three series: W, WE, and SE. Each series provides a unique set of properties making it the best choice for a specific extreme environment location.

W and WE-Series

W and WE-Series Antennas: W-Series and WE-Series microwave antennas attach to a standard 115 mm (4.5 in) O.D. diameter pipe and has fine azimuth and elevation adjustments of +/-5 degrees.

Antenna	Reflector 250 km/h (155 mph)	Pipe Mount 250 km/h (155 mph)	Adjustable Strut	Fixed Strut	Teglar Radome	Feed Bumper	Radome Edge Protection	Extra Strength Molded Radome
1.2 m (4')								
Shielded	1	–	1	–	1	–	–	–
Unshielded (Std/FP), no radome	1	–	1	–	–	–	–	–
Unshielded (Std/FP), with radome	1	–	1	–	–	–	–	1
1.8 m (6')								
Shielded	1	1	1	1	1	–	1	–
Unshielded (Std/FP), no radome	1	1	1	1	–	–	–	–
Unshielded (Std/FP), with radome	1	1	1	1	–	–	–	1
2.4 m (8')								
Shielded	1	–	1	3	1	–	1	–
Unshielded (Std/FP), no radome	1	–	1	3	–	–	–	–
Unshielded (Std/FP), with radome	1	–	1	3	–	–	–	1
3.0 m (10')								
Shielded	1	1	1	3	1	1	1	–
Unshielded (Std/FP), no radome	1	1	1	3	–	–	–	–
Unshielded (Std/FP), with radome	1	1	1	3	–	–	–	1
3.7 m (12')								
Shielded	1	1	1	3	1	1	1	–
Unshielded (Std/FP), no radome	1	1	1	3	–	–	–	–
Unshielded (Std/FP), with radome	1	1	1	3	–	–	–	1
4.5 m (15')								
Shielded	1	1	1	2	1	1	1	–
Unshielded (Std/FP), no radome	1	1	1	2	–	–	–	–

Large Diameter W-series antennas are available with split reflectors to reduce shipping and other transportation costs.

SE-Series

SE-Series Antennas: Feature a wind speed rating of 320 km/h (200 mph) in addition to the corrosion-resistance package. SE-Series antennas attach to the tower interface via four stainless steel studs instead of the standard 115 mm (4.5 in) O.D. diameter pipe and has fine azimuth and elevation adjustments of +/-5 degrees..

Antenna	Reflector and 4-Point Mount Assembly	Teglar Radome	Feed Bumper	Radome Edge Protection	Extra Strength Molded Radome
1.2m (4′) Shielded	1	1			
1.8m (6′) Shielded	1	1	1		
2.4m (8′) Shielded	1	1	1		
3.0m (10′) Shielded	1	1	1	1	
3.7m (12′) Shielded	1	1	1	1	

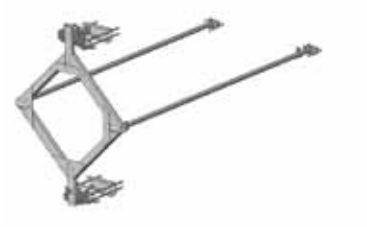
Note that the SE-Series antennas are only available with single piece reflectors.

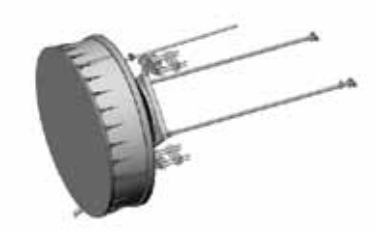
Heavy-Duty Dish Mounts Specifically Designed For SE-Series Microwave Antennas

In addition to our antennas, CommScope also offers heavy-duty dish mounts specifically designed to help support the SE-Series microwave antennas in extreme environmental conditions, including wind speeds of 320 km/h (200 mph). The robust design of these mounts helps to reduce twist and sway, and in some cases, it is eliminated altogether.

Ordering Information: The heavy-duty dish mounts support only the SE-Series Antennas.

Mount Part #	SE-Series Antenna sizes	Mount Part # Description
DMHD-46	1.2 m (4 ft) & 1.8 m (6 ft)	Fits round legs up to 12″ OD, 12″ 60 degree angle legs, or 9″ 90 degree angle legs
DMHD-810	2.4 m (8 ft) & 3 m (10 ft)	Fits round legs up to 12″ OD, 12″ 60 degree angle legs, or 9″ 90 degree angle legs
DMHD-12	3.7 m (12 ft)	Fits round legs up to 12″ OD, 12″ 60 degree angle legs, or 9″ 90 degree angle legs





DMHD-810

Overall Dimensions

ExtremeLine™ W- and WE- Series Shielded Parabolic Microwave Antennas

Antenna Dimensions — mm (inches)*

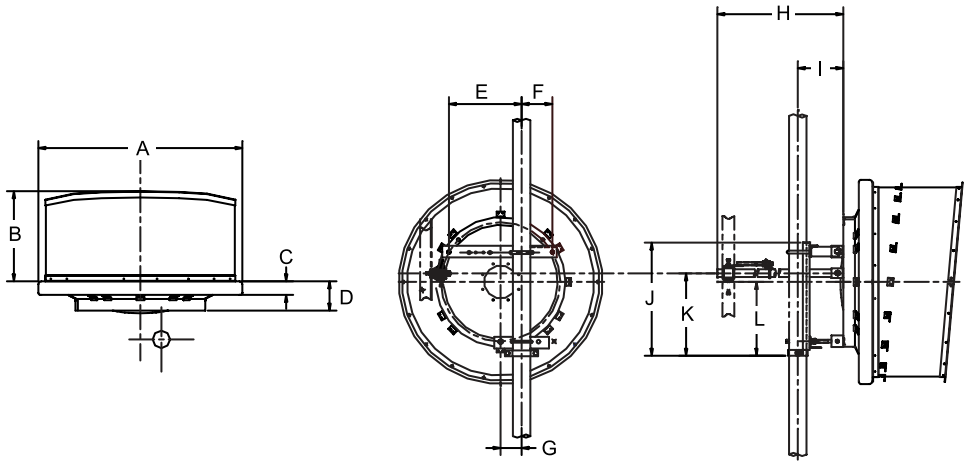
Model Type	1.2 m (4 ft)*	1.8 m (6 ft)	2.4 m (8 ft)	3.0 m (10 ft)	3.7 m (12 ft)	4.5 m (15 ft
A:	1330 (52.4)	1939 (76.3)	2623 (103.3)	3312 (130.4)	3958 (155.8)	4674 (184.0)
B:	587 (33.7)	92 (3.6)	2541 (100.0)	3159 (124.4)	3814 (150.2)	1252 (49.3)
C:	89 (3.5)	261 (10.3)	1069 (42.1)	803 (31.6)	1081 (42.6)	136 (5.4)
D:	191 (7.5)	679 (26.7)	391 (15.4)	128.5 (5.1)	937 (36.9)	860 (33.9)
E:	474 (18.7)	272 (10.7)	114 (4.5)	606 (23.9)	155 (6.1)	539 (21.2)
F:	200 (7.9)	203 (8.0)	1514 (59.6)	1878 (73.9)	2182 (82.9)	3144 (123.8)
G:	137 (5.4)	1178 (46.4	1109 (43.7)	1358 (53.5)	1663 (65.5)	1974 (77.7)
H:	820 (32.3)	2141 (84.3)	277 (10.9)	879 (34.6)	357 (14.1)	595 (23.5)
I:	296 (11.7)	330 (13.0)	203 (8.0)	357 (14.1)	879 (34.6)	2210 (87.0)
J:	738 (29.0)	357 (14.1)	2684 (106.0)	359 (25.4)	359 (14.1	202 (7.9)
K:	536 (21.1)	600 (23.6)	336 (13.2)	260 (10.2)	260 (10.2)	1310 (51.6)
L:	481 (18.9)	638 (25.1)	997 (32.3)	410 (16.1)	2610 (102.8)	-
M:	-	-	640 (25.2)	1159 (45.6)	410 (16.1)	-
N:	-	-	1235 (48.6)	802 (31.6)	1291 (50.8)	-
O:	-	-	662 (26.1	816 (32.1)	1159 (45.6)	-
P:	-	-	-	-	802 (31.6)	-
Q:	-	-	-	-	1133 (44.6)	-
R:	-	-	-	-	1441 (56.7)	-

*Refer to Outline Dimension details.

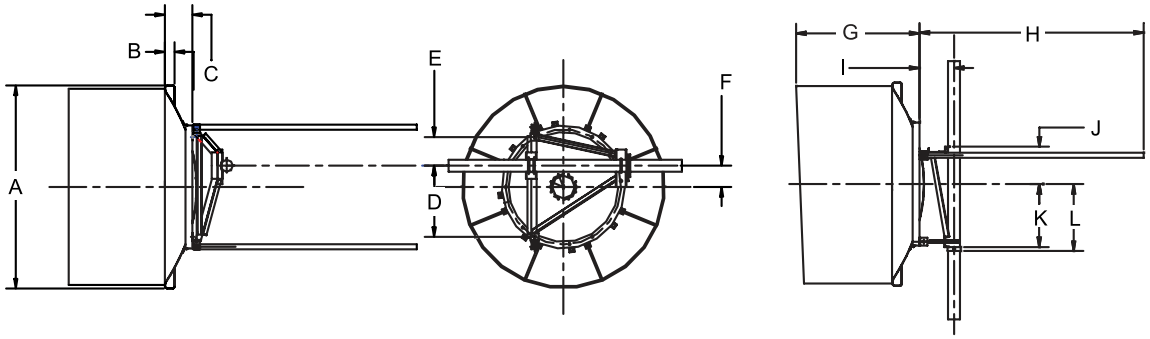
Overall Dimensions

ExtremeLine™ W- and WE- Series Shielded Parabolic Microwave Antennas

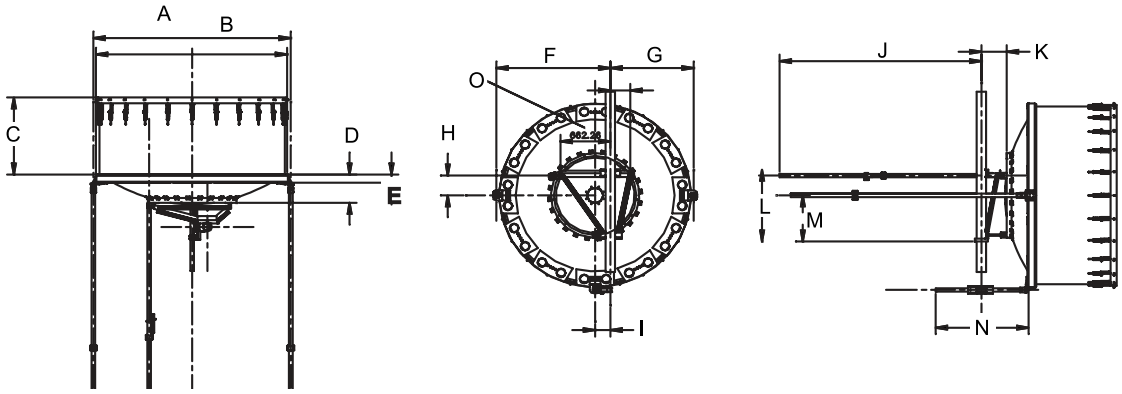
W- and WE- Series Shielded 1.2 m (4 ft)



W- and WE- Shielded 1.8 m (6 ft)



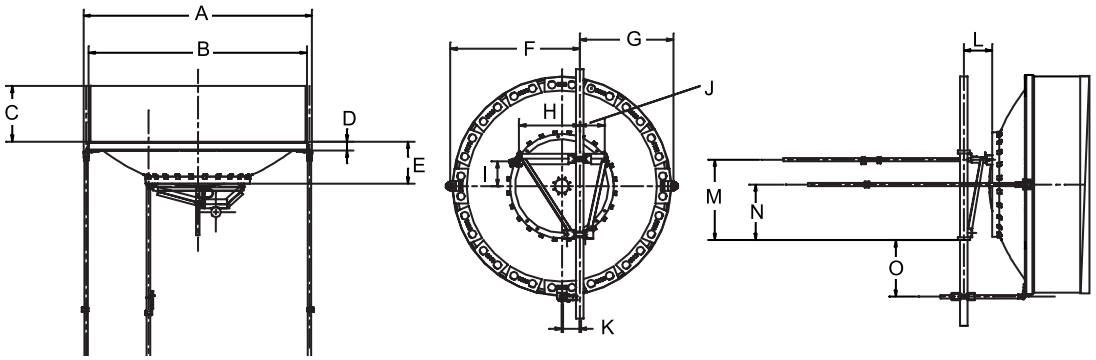
W- and WE- Shielded 2.4 m (8 ft)



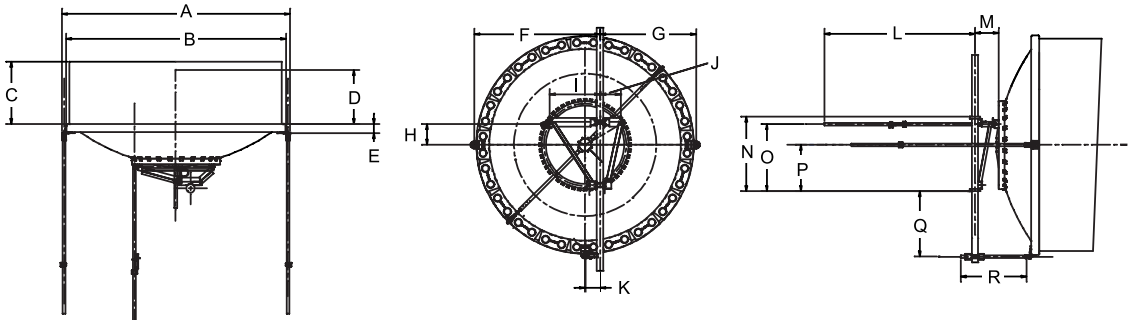
Overall Dimensions

ExtremeLine™ W- and WE- Series Shielded Parabolic Microwave Antennas

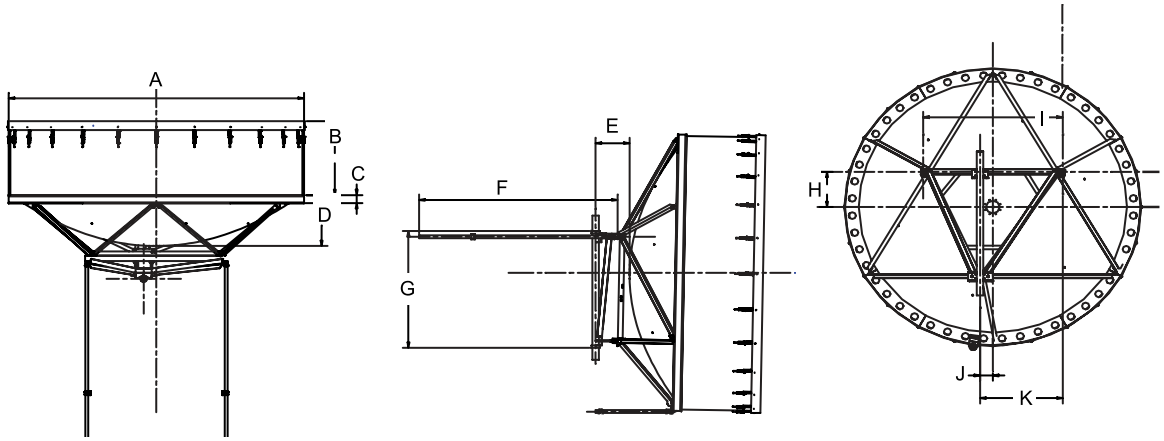
W- and WE- Shielded 3.0 m (10 ft)



W- and WE- Shielded 3.7 m (12 ft)



W- and WE- Shielded 4.5 m (15 ft)



Wind Loading Specifications

ExtremeLine™ W- and WE- Series Shielded Parabolic Microwave Antennas

Wind Loading Without Optional Radome

The axial, side and twisting moment forces stated are maximum loads applied to the tower by the antenna at a survival windspeed of 250 km/h (155 mph) with operational wind speeds of up to 180 km/h (112 mph). They are, in every case, the result of wind from the most critical direction for each parameter. The individual maximums may not occur simultaneously. All forces are referenced to the antenna mounting structure.

Model Type	**1.2 m (4 ft)**	**1.8 m (6 ft)**	**2.4 m (8 ft)**	**3.0 m (10 ft)**	**3.7 m (12 ft)**	**4.5 m (15 ft)**
Without Ice						
Axial force F_A — N (lb):	4394 (988)	9886 (2223)	17576 (3951)	27462 (6174)	39545 (8890)	61789 (13891)
Side force F_S — N (lb):	–2177 (–489)	–4897 (–1101)	–8706 (–1957)	–13603 (–3058)	–19589 (–4404)	–30608 (–6981)
Moment M_T — Nm (lbf):	–1287 (–949)	–3863 (–2850)	–8096 (–5972)	–15365 (–11333)	–24305 (–17926)	–46459 (–34267)
With Ice						
Axial force F_A — N (lb):	4768 (1072)	10443 (2348)	18316 (4118)	28385 (6381)	40651 (9139)	63170 (14201)
Side force F_S — N (lb):	–2362 (–531)	–5173 (–1163)	–9073 (–2040)	–14061 (–3161)	–20137 (–4527)	–31292 (–7035)
Moment M_T — Nm (lbf):	–1418 (–1075)	–4129 (–3045)	–8300 (–6280)	–16012 (–11810)	–25171 (–18565)	–47789 (–35247)
Angle '**A**' for M_T maximum:	–110°	–110°	–120°	–110°	–110°	–105°

Where side struts are fitted, the loads carried by the side struts are components of, not in addition to F_A, F_S, and M_T.

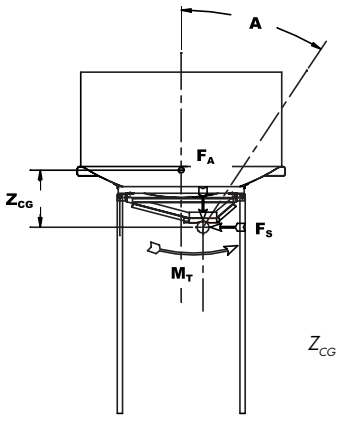
Z_{CG} Without ice — mm (in):	282 (11.1)	820 (32.3)	820 (32.3)	767 (30.2)	808 (31.8)	1306 (51.4)
Z_{CG} With ice — mm (in):	371 (14.6)	925 (36.4)	925 (36.4)	818 (32.2)	914 (36.0)	1372 (54.0)

Antenna Weights Including Mount

Antenna without ice — kg (lb):	77 (170)	135 (297)	223 (490)	429 (944)	390 (860)	887 (1951)
Antenna with 12 mm (1/2 in) Radial ice — kg (lb):	127 (280)	235 (517)	473 (104)	940 (2068)	855 (1885)	1386 (3049)

Antenna Packed Weights (Gross) And Dimensions (Single Unit Pack)

Weight — kg (lb):	168 (370)	316 (695)	481 (1058)	769 (1692)	730 (1610)	1216 (2675)
Length — mm (in):	1480 (58)	2070 (82)	2710 (107)	3280 (129)	3990 (157)	4930 (194)
Width — mm (in):	1430 (56)	880 (35)	1200 (48)	2290 (90)	1530 (60)	1220 (48)
Height — mm (in):	840 (33)	2100 (83)	2520 (99)	2490 (98)	2140 (84)	2570 (101)



Z_{CG} is the axial distance from the center of gravity to the mounting pipe.

Overall Dimensions

ExtremeLine™ W- and WE- Series Unshielded Parabolic Microwave Antennas

Antenna Dimensions — mm (inches)*

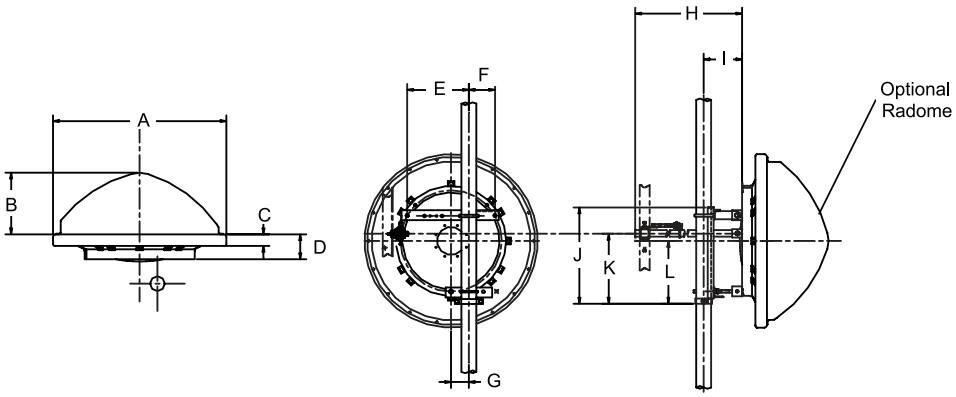
Model Type	1.2 m (4 ft)*	1.8 m (6 ft)	2.4 m (8 ft)	3.0 m (10 ft)	3.7 m (12 ft)	4.5 m (15 ft)
A:	1330 (52.4)	1934 (76.1)	2623 (103.3)	3309 (130.3)	3958 (155.8)	4674 (184.0)
B:	473 (18.6)	697 (27.4)	2541 (100.0)	3159 (124.4)	3814 (150.2)	136 (5.4)
C:	89 (3.5)	92 (1.76)	913 (26.0)	825 (32.5)	937 (36.9)	860 (33.9)
D:	191 (7.5)	261 (10.3)	391 (15.4)	129 (5.1)	155 (6.1)	539 (21.2)
E:	474 (18.7)	679 (26.7)	114 (4.5)	606 (23.9)	702 (27.6)	3144 (123.8)
F:	200 (7.9)	272 (10.7)	1514 (59.6)	1878 (73.9)	2182 (82.9)	1974 (77.7)
G:	137 (5.4)	203 (8.0)	1109 (43.7)	1358 (54.5)	1663 (65.5)	595 (23.5)
H:	820 (32.3)	2141 (84.3)	275 (10.8)	879 (34.6)	357 (14.1)	2210 (87.0)
I:	296 (11.7)	330 (13.0)	662 (26.1)	357 (14.1)	879 (34.6)	202 (7.9)
J:	738 (29.0)	357 (14.0)	264 (10.4)	359 (14.1)	359 (14.1	1310 (51.6)
K:	536 (21.1)	275 (10.8)	203 (8.0)	260 (10.2)	260 (10.2)	-
L:	481 (18.9)	600 (23.6)	2684 (106.0)	410 (16.1)	2610 (102.8)	-
M:	-	638 (25.1)	336 (13.2)	1159 (45.6)	410 (16.1)	-
N:	-	-	997 (32.3)	802 (31.6)	1291 (50.8)	-
O:	-	-	640 (25.2)	816 (32.1)	1159 (45.6)	-
P:	-	-	1235 (48.6)	-	802 (31.6)	-
Q:	-	-	-	-	1133 (44.6)	-
R:	-	-	-	-	1441 (56.7)	-

*Refer to Outline Dimension details.

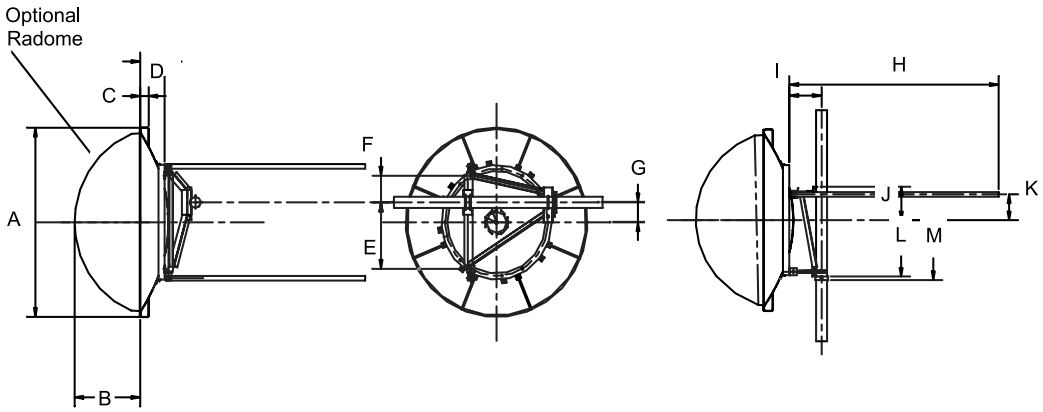
Overall Dimensions

ExtremeLine™ W- and WE- Series Unshielded Parabolic Microwave Antennas

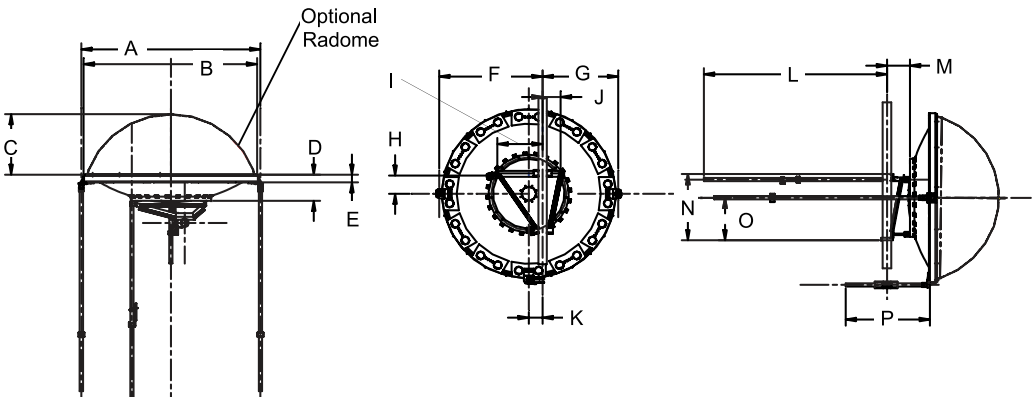
W- and WE- Unshielded 1.2 m (4 ft)



W- and WE- Unshielded 1.8 m (6 ft)



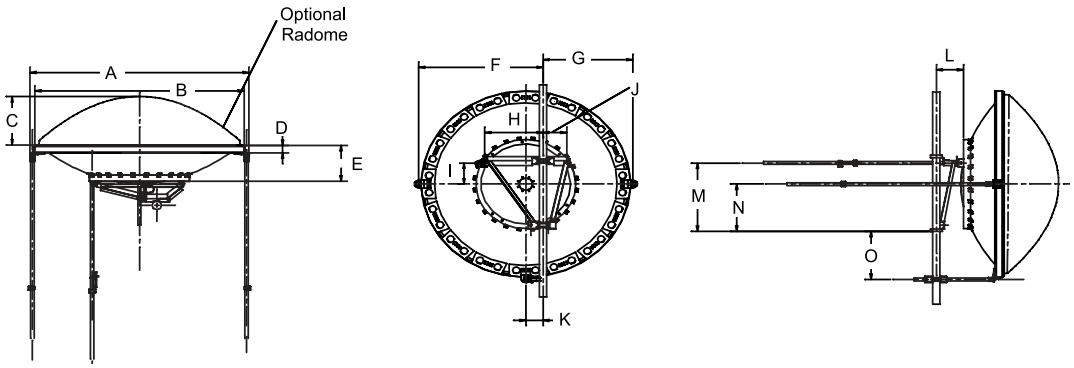
W- and WE- Unshielded 2.4 m (8 ft)



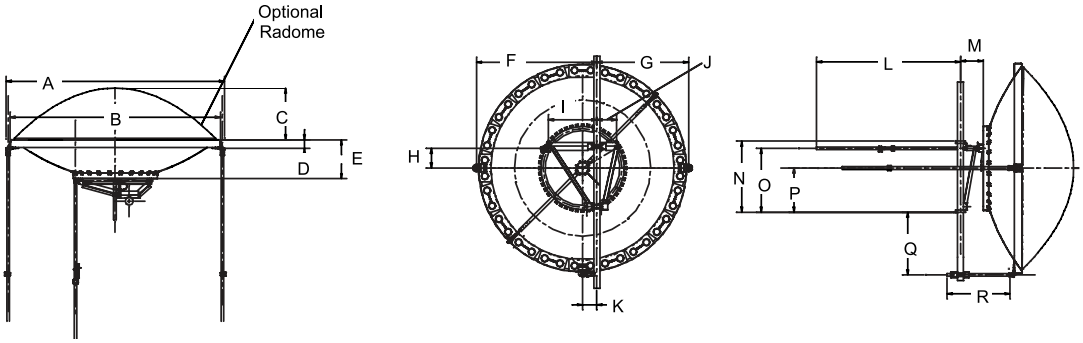
Overall Dimensions

ExtremeLine™ W- and WE- Series Unshielded Parabolic Microwave Antennas

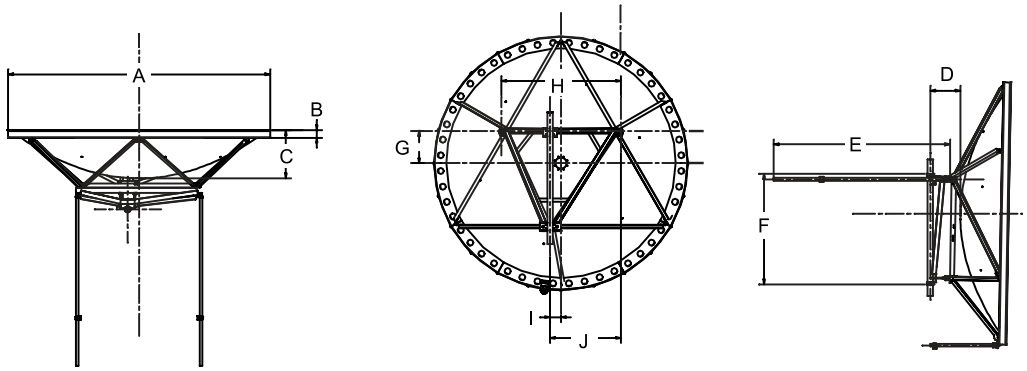
W- and WE- Unshielded 3.0 m (10 ft)



W- and WE- Unshielded 3.7 m (12 ft)



W- and WE- Unshielded 4.5 m (15 ft)



Wind Loading Specifications

ExtremeLine™ W- and WE- Series Unshielded Parabolic Microwave Antennas

Wind Loading Without Optional Radome

The axial, side and twisting moment forces stated are maximum loads applied to the tower by the antenna at a survival windspeed of 250 km/h (155 mph) with operational wind speeds of up to 180 km/h (112 mph). They are, in every case, the result of wind from the most critical direction for each parameter. The individual maximums may not occur simultaneously. All forces are referenced to the antenna mounting structure.

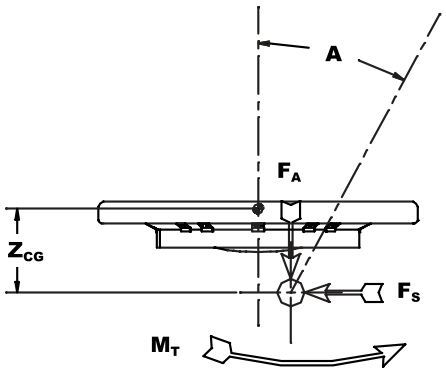
Model Type	1.2 m (4 ft)	1.8 m (6 ft)	2.4 m (8 ft)	3.0 m (10 ft)	3.7 m (12 ft)	4.5 m (15 ft)
Without Ice						
Axial force F_A — N (lb):	5986 (1346)	13467 (3028)	23942 (5382)	37409 (8410)	53869 (12110)	84171 (18922)
Side force F_S — N (lb):	–1634 (–367)	–3676 (–826)	–6535 (–1469)	–10211 (–2296)	–14704 (–3306)	–22975 (–5165)
Moment M_T — Nm (lbf):	–1337 (–986)	–4087 (–3014)	–8549 (–6306)	–16674 (–12298)	–26809 (–19773)	–51292 (–37831)
With Ice						
Axial force F_A — N (lb):	6495 (1460)	14226 (3198)	24950 (5609)	38667 (8693)	55376 (12449)	86052 (19345)
Side force F_S — N (lb):	–1773 (–399)	–3883 (–873)	–6810 (–1531)	–10554 (–2373)	–15115 (–3398)	–23488 (–5280)
Moment M_T — Nm (lbf):	–1479 (–1091)	–4379 (–3230)	–9017 (–6651)	–17401 (–12835)	–27798 (–20503)	–52810 (–38951)
Angle '**A**' for M_T maximum:	–125°	–125°	–125°	–125°	–125°	–125°
Where side struts are fitted, the loads carried by the side struts are components of, not in addition to F_A, F_S, and M_T.						
Z_{CG} Without ice — mm (in):	178 (7.0)	254 (10.0)	820 (32.3)	457 (18.0)	483 (19.0)	820 (32.3)
Z_{CG} With ice — mm (in):	277 (10.9)	343 (13.5)	925 (36.4)	551 (21.7)	566 (22.3)	925 (36.4)

Antenna Weights Including Mount

Antenna without ice — kg (lb):	47 (104)	67 (147)	125 (275)	158 (348)	299 (658)	618 (1360)
Antenna with 12 mm (1/2 in) Radial ice — kg (lb):	79 (175)	146 (321)	290 (638)	392 (862)	577 (1269)	1132 (2490)

Antenna Packed Weights (Gross) And Dimensions (Single Unit Pack)

Weight — kg (lb):	152 (335)	218 (479)	349 (768)	412 (906)	586 (1289)	1043 (2295)
Length — mm (in):	1480 (58)	2070 (82)	2710 (107)	3280 (129)	3390 (157)	4930 (194)
Width — mm (in):	1430 (56)	780 (31)	1200 (48)	2290 (90)	1070 (42)	1220 (48)
Height — mm (in):	840 (33)	2100 (83)	2520 (99)	2490 (98)	2140 (84)	2570 (101)



Z_{CG} is the axial distance from the center of gravity to the mounting pipe.

Wind Loading Specifications

ExtremeLine™ W- and WE- Series Unshielded Parabolic Microwave Antennas

Wind Loading With Optional Radome

The axial, side and twisting moment forces stated are maximum loads applied to the tower by the antenna at a survival windspeed of 250 km/h (155 mph) with operational wind speeds of up to 180 km/h (112 mph). They are, in every case, the result of wind from the most critical direction for each parameter. The individual maximums may not occur simultaneously. All forces are referenced to the antenna mounting structure.

Model Type	1.2 m (4 ft)	1.8 m (6 ft)	2.4 m (8 ft)	3.0 m (10 ft)	3.7 m (12 ft)
Without Ice					
Axial force F_A — N (lb):	3006 (676)	6764 (1521)	12025 (2703)	18790 (4224)	18500 (4159)
Side force F_S — N (lb):	–1850 (–416)	–4163 (–936)	–7400 (–1664)	–11563 (–2599)	–8700 (–1956)
Moment M_T — Nm (lbf):	1205 (889)	3685 (2718)	–8047 (–5935)	15635 (11532)	4000 (2950)
With Ice					
Axial force F_A — N (lb):	3262 (733)	7145 (1606)	12532 (2817)	19422 (4366)	29600 (6654)
Side force F_S — N (lb):	–2007 (–451)	–4397 (–989)	–7712 (–1734)	–11952 (–2687)	–14000 (–3147)
Moment M_T — Nm (lbf):	1341 (989)	3965 (2924)	8513 (6279)	16357 (12064)	5800 (4278)
Angle '**A**' for M_T maximum:	99°	99°	99°	99°	99°
Where side struts are fitted, the loads carried by the side struts are components of, not in addition to F_A, F_S, and M_T.					
Z_{CG} Without ice — mm (in):	254 (10.0)	348 (13.7)	820 (32.3)	655 (25.8)	683 (26.9)
Z_{CG} With ice — mm (in):	371 (14.6)	498 (19.6)	925 (36.4)	805 (31.7)	833 (33.6)

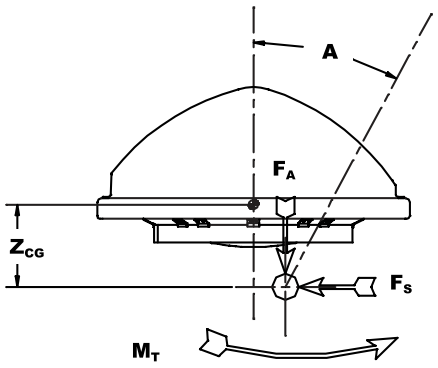
Antenna Weights Including Mount And Radome

Antenna without ice — kg (lb):	54 (119)	80 (176)	160 (352)	203 (447)	297 (654)
Antenna with 12 mm (1/2 in) Radial ice — kg (lb):	86 (189)	160 (352)	330 (726)	450 (990)	615 (1354)

Antenna Packed Weights (Gross) And Dimensions (Single Unit Pack)

Weight — kg (lb):	168 (370)	315 (693)	384 (845)	457 (1005)*	586 (1289)*
Length — mm (in):	1480 (58)	2070 (82)	2710 (107)	3280 (129)*	3390 (157)*
Width — mm (in):	1430 (56)	880 (35)	1200 (48)	2290 (90)*	1070 (42)*
Height — mm (in):	840 (33)	2100 (83)	2525 (99)	2490 (98)*	2140 (84)*

*Dimensions for antenna only, as radome is shipped separately.



ZCG is the axial distance from the center of gravity to the mounting pipe.

Overall Dimensions

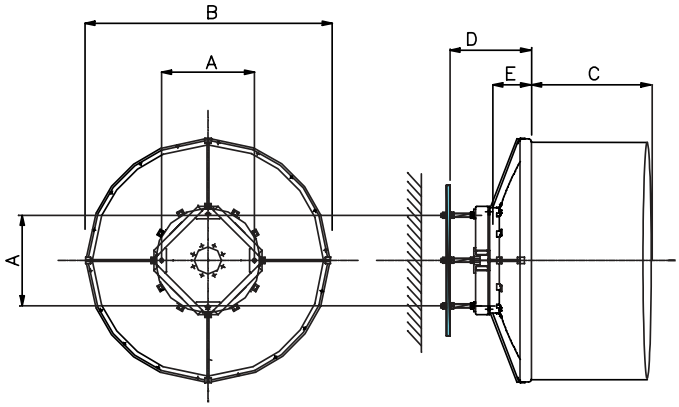
ExtremeLine™ SE- Series Shielded Parabolic Microwave Antennas

Antenna Dimensions — mm (inches)*

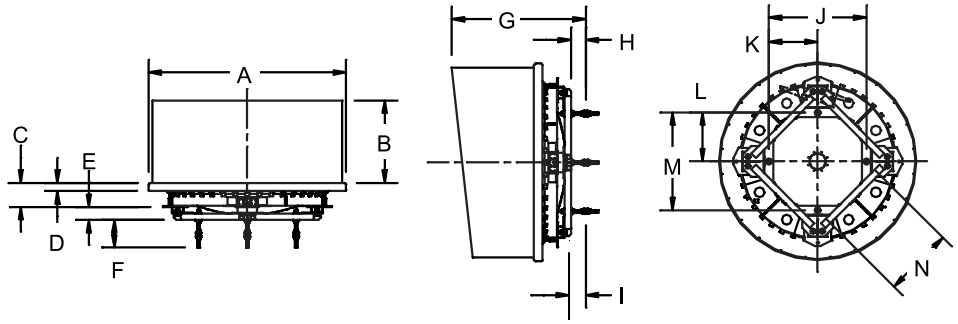
Model Type	1.2 m (4 ft)*	1.8 m (6 ft)	2.4 m (8 ft)	3.0 m (10 ft)	3.7 m (12 ft)
A:	740 (29.13)	740 (29.13)	2548 (100.3)	3161 (124.5)	3770 (148.4)
B:	1259 (49.6)	1868 (73.5)	1060 (41.8)	800 (31.5)	1090 (42.9)
C:	585 (23.03)	1000 (39.4)	297 (11.7)	527 (20.7)	530 (20.9)
D:	504 (19.8)	509 (20.0)	114 (4.5)	128 (5.0)	127 (5.0)
E:	205 (8.1)	304 (12.0)	191 (7.5)	191 (7.5)	191 (7.5)
F:	-	-	350 (13.8)	350 (13.8)	500 (19.7)
G:	-	-	350 (13.8)	1708 (67.2)	2083 (82.0)
H:	-	-	190 (7.5)	190 (7.5)	270 (10.6)
I:	-	-	258 (10.2)	258 (10.2)	304 (12.0)
J:	-	-	1260 (49.6)	1260 (49.6)	1800 (70.8)
K:	-	-	630 (24.8)	630 (24.8)	900 (35.4)
L:	-	-	630 (24.8)	630 (24.8)	900 (35.4)
M:	-	-	1260 (49.6)	1260 (49.6)	1800 (70.8)
N:	-	-	891 (35.1)	891 (35.1)	1270 (50.0)

*Refer to Outline Dimension details.

SE-Series Shielded 1.2 m (4 ft) and 1.8 m (6 ft)



SE-Series Shielded 2.4 m (8 ft), 3.0 m (10 ft), and 3.7 m (12 ft)



Wind Loading Specifications

ExtremeLine™ SE- Series Shielded Parabolic Microwave Antennas

The axial, side and twisting moment forces stated are maximum loads applied to the tower by the antenna at a survival windspeed of 320 km/h (200 mph) with operational wind speeds of up to 180 km/h (112 mph). They are, in every case, the result of wind from the most critical direction for each parameter. The individual maximums may not occur simultaneously. All forces are referenced to the antenna mounting structure.

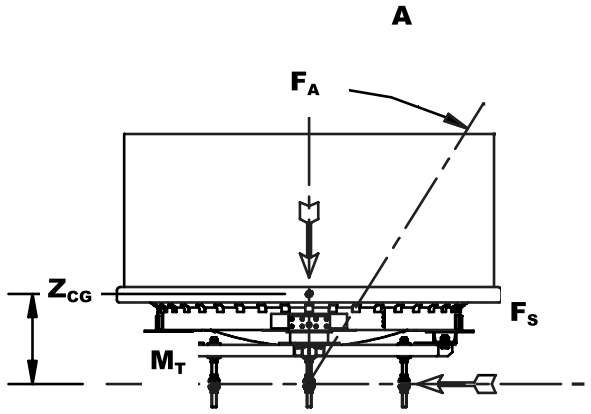
Model Type	**1.2 m (4 ft)**	**1.8 m (6 ft)**	**2.4 m (8 ft)**	**3.0 m (10 ft)**	**3.7 m (12 ft)**
Without Ice					
Axial force F_A — N (lb):	7222 (1624)	16250 (3653)	28888 (6494)	45138 (10147)	64998 (14612)
Side force F_S — N (lb):	3578 (804)	8049 (1810)	14310 (3217)	22359 (5026)	32197 (7238)
Moment M_T — Nm (lbf):	799 (589)	2696 (1988)	6390 (4713)	12480 (9205)	21566 (15906)
With Ice					
Axial force F_A — N (lb):	7836 (1762)	17165 (3859)	30104 (6768)	46655 (10488)	66816 (15021)
Side force F_S — N (lb):	3882 (873)	8503 (1912)	14912 (3352)	23111 (5196)	33098 (7441)
Moment M_T — Nm (lbf):	903 (666)	2927 (2159)	6798 (5014)	13115 (9673)	22477 (16578)
Angle '**A**' for M_T maximum:	105°	105°	105°	105°	105°
Z_{CG} Without ice — mm (in):	282 (11.1)	580 (20.0)	673 (26.5)	757 (30.2)	792 (31.2)
Z_{CG} With ice — mm (in):	371 (14.6)	579 (22.8)	729 (28.7)	818 (32.2)	909 (35.8)

Antenna Weights Including Mount

Antenna without ice — kg (lb):	87 (191)	140 (308)	445 (981)	475 (1047)	600 (1320)
Antenna with 12 mm (1/2 in) Radial ice — kg (lb):	140 (308)	250 (550)	934 (2056)	1092 (2403)	1320 (2904)

Antenna Packed Weights (Gross) And Dimensions (Single Unit Pack)

Weight — kg (lb):	178 (392)	319 (702)	703 (1547)	772 (1698)	915 (2013)
Length — mm (in):	1480 (58)	2070 (82)	2710 (107)	3280 (129)	3970 (156)
Width — mm (in):	1430 (56)	880 (35)	1200 (48)	2290 (90)	2420 (95)
Height — mm (in):	840 (33)	2100 (83)	2520 (99)	2490 (98)	3250 (128)



Z_{CG} is the axial distance from the center of gravity to the mounting pipe.

Ordering Options

ExtremeLine™ Extreme Environment Antennas Order Options

***W-Series: 250 km/h (155 mph) Wind Survival Antennas**

***WE-Series: 250 km/h (155 mph) Wind Survival/Corrosive Environment Antennas**

****SE-Series: 320 km/h (200 mph) Wind Survival/Corrosive Environment Antennas**

	High-Wind Survival/Corrosive Environment Antenna Options		
Standard Antenna Families	***W-Series Pipe-Mount**	***WE-Series Pipe-Mount**	****SE-Series Pipe-Mount**
4' P, PL, PXL	Call for pricing	Call for pricing	N/A
4' HP(X), HSX, UHX	Call for pricing	Call for pricing	Call for pricing
6' P, PL, PXL, PAR(X)	Call for pricing	Call for pricing	N/A
6' HP, HPX	Call for pricing	Call for pricing	Call for pricing
8' P, PL, PXL, PAR(X)	Call for pricing	Call for pricing	N/A
8' HP, HPX	Call for pricing	Call for pricing	Call for pricing
8' HSX, UHX	Call for pricing	Call for pricing	Call for pricing
10' P, PL, PXL, PAR(X)	Call for pricing	Call for pricing	N/A
10' HP, HPX	Call for pricing	Call for pricing	Call for pricing
10' HSX, UHX	Call for pricing	Call for pricing	Call for pricing
12' P, PL, PXL	Call for pricing	Call for pricing	N/A
12' HP, HPX	Call for pricing	Call for pricing	Call for pricing
12' HSX, UHX	Call for pricing	Call for pricing	Call for pricing
15' P, PL, PXL	Call for pricing	Call for pricing	N/A
15' HP, HPX	Call for pricing	Call for pricing	N/A
15' HSX, UHX	Call for pricing	Call for pricing	N/A

**W & WE-Series antennas are offered with 1 piece reflectors and optional 2 piece reflectors.*
***SE-Series antennas with 4 point mounts are only available with 1 piece reflectors.*

For more information visit www.commscope.com or contact us at +1-779-435-6500 or toll free at 1-800-255-1479.

We're proud to be a part of your network's story.

Here at CommScope, we embrace our role as a trusted resource, partner, and facilitator. We create the infrastructure that connects the world and evolves with every advance in technology. By investing all of our capabilities, resources, relationships, and products into your toughest challenges, we continue our long history of solving problems together—paving the way for new ideas and fresh ways of thinking.

We're a trusted resource and partner around the world because we're invested in you: your people, your networks, your success. It inspires us to build relationships and infrastructure… connect people and technologies across protocols, oceans, and time zones… and share what we learn along the way. We'll never stop connecting and evolving networks for the business of life at home, at work, and on the go.

This is our promise to you.
This is CommScope.

COMMSCOPE®

www.commscope.com

Visit our Web site or contact your local CommScope representative for more information.

BR-105563-EN (09/12)

Looking for the Andrew flash?

As a valued Andrew Solutions customer, we'd like to thank you for your loyalty and business. As we celebrate 75 years of the Andrew brand, we realized that many customers have come to see the Andrew "flash" logo as synonymous with our long history of high-quality wireless solutions, dedicated service, and industry-leading innovation.

75 YEARS ANDREW®

The Andrew flash logo has changed. Our commitment to you is as strong as ever.

Over the years, our logo has evolved, just as our portfolio has evolved to better meet your network needs. As you may know, Andrew Solutions was acquired by CommScope in 2007. While CommScope serves many customers across multiple geographies and markets, some customers didn't realize the full breadth of our solutions. We soon realized that to tell a more unified story about who we are and what we do, we would need to better integrate the Andrew portfolio of wireless solutions into the CommScope brand.

So while you may no longer see the Andrew flash and colors on our letters, statements or products, you can still rely on the same strong tradition of Andrew quality, service and innovation you've come to expect—only now under the CommScope name and our new dynamic logo.

ANDREW

1943

ANDREW

1973

ANDREW®

1984

on the go

2011