

**ANCHOR BOLTS**

Anchor Bolts are fabricated from carbon steel bar conforming to AASHTO M314 Grade-55 or ASTM F1554 Grade-55. Bolts have an “L” bend on one end and are galvanized a minimum of 12 inches on the threaded end. Four anchor bolts are provided per pole. Each anchor bolt is furnished with two hex nuts and two flat washers.

**ANCHOR BASE**

The anchor base (base plate) is fabricated from structural quality hot rolled carbon steel plate conforming to ASTM A36. The base plate telescopes the pole shaft and is circumferentially welded top and bottom. Please refer to the charted bolt circles and detail drawings to determine the type of hole accommodation made for the anchor bolt.

**POLE SHAFT**

The pole shaft is fabricated from weldable grade hot rolled commercial quality carbon steel having a guaranteed minimum yield strength of 55,000 psi and is supplied in 11 gauge (.1196") or 7 gauge (.1793") nominal thickness. The pole is of one-piece construction with a full length longitudinal high frequency electric resistance weld. The shaft is square in cross section having flat sides, radiused corners, and a uniform taper of approximately 0.11 inches per foot of length except for 4 inch square poles in the DSF10 series which are not tapered.

**HANDHOLE**

The reinforcing handhole rim consists of either a nominal 3" x 5" rectangular shaped tubing or 4" x 6.5" oval shaped pipe material. The 3" x 5" handhole is provided with a steel attachment bar, steel cover, and one round head machine screw. The 4" x 6.5" handhole includes two tabs for mounting a steel cover with hex head attachment screws. Both handhole types are welded in the pole shaft and are located 1'-6" above the base.

**ELECTRICAL GROUND**

A nut holder is provided near the handhole and includes a 0.5"-13 UNC hex head bolt and nut.

**SHROUD**

The shroud is a weldable grade hot rolled commercial quality carbon steel with a guaranteed minimum yield strength of 45,000 psi and is supplied in 7 Ga. (0.1793") thickness. It is a one-piece formed channel section and conforms to the pole shaft taper. The shroud is attached by a locking device with provisions for a padlock to prevent accidental or unauthorized lowering.

**FULL BASE COVER (OPTIONAL)**

The optional full base cover is fabricated from ABS plastic. Valmont reserves the right to provide a steel assembly on some applications depending upon the finish requirement and/or pole shaft base diameter. Both steel and plastic covers are a two-piece assembly secured together with two fasteners.

**HINGE**

The hinge includes a stainless steel pin. A flexible wiring guide is provided, passing through the hinge area for wiring protection. The DSF10 and DSF15 utilize an external hinge. The DSF20 and DSF35 utilize an internal hinge.

**POLE TOP TENON (STANDARD)**

Pole top tenons are fabricated from structural quality hot rolled carbon steel with a guaranteed minimum yield strength of 30,000 psi. A pole top plate and tenon of weldable grade hot rolled commercial quality carbon steel is circumferentially welded to the top of the pole shaft. This plate provides an internal weather resistant wiring raceway into the pole top tenon. Standard sizes are of either 2.38" O.D. x 4" long (P2) or 4" O.D. x 6" long (P4) steel tubing. See page 1 for other available sizes.

**POLE TOP CAP (OPTIONAL)**

A removable cap is available as an option to be used in conjunction with drilled pole shafts for accommodation of a direct mounted luminaire arm attachment.

**STANDARD FINISH**

Standard finishes available are galvanized (DSF10 & DSF15 only), prime coat (powder), and finish coat (powder). For information regarding the scope and application of these coatings please refer to page 5.

**FASTENING HARDWARE**

All structural fasteners are galvanized

high strength carbon steel. All other fasteners are galvanized or zinc plated carbon steel or stainless steel.

**DESIGN**

The standards shown in this section are designed to withstand dead loads and theoretical dynamic loads developed by variable wind speeds, as charted, with an appropriate gust factor under the following conditions:

The luminaire(s) and/or mounting bracket(s) center of gravity, or centroid, is assumed to be located a maximum of 2'-6" above the pole top. For purposes of design, effective projected area (EPA) is considered to be the product of the actual projected area and the drag coefficient.

The listed weights include luminaire(s) and/or mounting bracket(s). To operate properly, the DSF10 and DSF20 hinge poles require a minimum weight loading of 50 lbs at the pole top. The DSF15 and DSF35 require 75 lbs.

The wind velocities are based on 10 mph increments from 80 mph through 100 mph (reference wind map). Standards to be located in areas of known abnormal conditions require special consideration. For example: coastal areas, airports, and areas of special winds such as the Chinook type along the eastern slope of the Rocky Mountains.

Standards are designed for ground mounted applications. Standards mounted on structures, such as bridges and buildings, also necessitate special consideration requiring Valmont's recommendation.

Height correction factors and drag coefficients are applied to the entire structure. An appropriate safety factor is maintained based on the minimum yield strength of the material incorporated in the standard. Secondary moments are considered on all designs.

Maximum weight and EPA values are determined by analyzing stress from two wind directions as shown. Due to the increased area and reduced section properties, stress levels across the points generally control the allowable loads.

Valmont Industries, Inc. reserves the right to install various, engineer approved, material hanging accommodations to facilitate the manufacturing process. If this method is not acceptable, Valmont Industries, Inc. must be notified by the customer prior to manufacturing.

## DSF10

Nominal Mounting Height (ft)	Shaft				Pole Base			Anchor Bolts	Winch	80MPH w/1.3 Gust		90MPH w/1.3 Gust		100MPH w/1.3 Gust	
	Designation Number	Base O.D. (in)	Wall Thk. (ga)	Struct. Weight (lbs)	Bolt Circle		Thk. (in)	Dia. x Lngth. x Hk. (in)	Model No.	Max. EPA (ft <sup>2</sup> )	Max. Weight (lbs)	Max. EPA (ft <sup>2</sup> )	Max. Weight (lbs)	Max. EPA (ft <sup>2</sup> )	Max. Weight (lbs)
20	** 400F200	4.00	7	300	8.5-10		0.75	.75 x 17 x 3	M180A	11.6	217	8.5	217	6.2	217
25	** 400F250	4.00	7	370	8.5-10		0.75	.75 x 17 x 3	M180A	7.1	160	4.8	160	3.1	160
	641A250	6.41	11	355	12.5		0.88	1.00 x 36 x 4	M136	18.0	254	13.0	254	9.3	254
30	** 400F300	4.00	7	435	8.5-10		0.75	.75 x 17 x 3	M180A	4.0	120	2.1	120	0.8	120
	641A300	6.41	11	440	12.5		0.88	1.00 x 36 x 4	M136	12.5	230	8.3	230	5.1	230
35	718A350	7.18	11	540	13.5		0.88	1.00 x 36 x 4	M135	7.1	160	3.2	160	-	-
	713E350	7.13	7	700	13.5		1.25	1.00 x 36 x 4	M135	22.0	155	16.9	155	12.1	155
39	718A389	7.18	11	555	13.5		0.88	1.00 x 36 x 4	M135	4.3	135	-	-	-	-
	713E389	7.13	7	740	13.5		1.25	1.00 x 36 x 4	M135	19.5	110	13.5	110	9.2	110

## DSF15

Nominal Mounting Height (ft)	Shaft				Pole Base			Anchor Bolts	Winch	80MPH w/1.3 Gust		90MPH w/1.3 Gust		100MPH w/1.3 Gust	
	Designation Number	Base O.D. (in)	Wall Thk. (ga)	Struct. Weight (lbs)	Bolt Circle		Thk. (in)	Dia. x Lngth. x Hk. (in)	Model No.	Max. EPA (ft <sup>2</sup> )	Max. Weight (lbs)	Max. EPA (ft <sup>2</sup> )	Max. Weight (lbs)	Max. EPA (ft <sup>2</sup> )	Max. Weight (lbs)
25	641A250	6.41	11	355	12.5		0.88	1.00 x 36 x 4	M136	17.5	493	12.6	493	9.0	493
30	641A300	6.41	11	440	12.5		0.88	1.00 x 36 x 4	M136	12.0	446	7.8	446	4.7	446
35	718A350	7.18	11	540	13.5		0.88	1.00 x 36 x 4	M135	6.7	334	3.0	334	-	-
	713E350	7.13	7	700	13.5		1.25	1.00 x 36 x 4	M135	22.0	347	16.4	347	11.7	347
39	718A389	7.18	11	555	13.5		0.88	1.00 x 36 x 4	M135	4.0	295	-	-	-	-
	713E389	7.13	7	740	13.5		1.25	1.00 x 36 x 4	M135	18.9	271	13.1	271	8.9	271

### DSF10 & DSF15 NOTES:

- \*\* 3" x 5" Nominal handhole - all others 4" x 6.5" nominal.
- Structure weight is a nominal value which includes the pole shaft and base plate only.
- The base plate is provided with bolt holes 0.25" larger than the anchor bolt diameter.
- DSF15 design utilizes a shroud stiffener support angle (see drawing).
- Maximum weight and EPA values are based on top mounted luminaires and/or brackets having a centroid 2'-6" above the nominal mounting height.
- CAUTION: To prevent damage to the pole the winch cable must be kept taut when raising or lowering the pole.

### Wind Direction Detail



