

Gardco TRA Tapered Round Aluminum pole consists of a single piece of extruded 6063-T6 series aluminum providing excellent strength and integrity. The poles are finished with an electrostatically applied, thermally cured polyester powdercoat. All poles include a base cover or nut covers, hand hole, ground lug, and top cap. Anchor bolts and templates are ordered as a separate accessory.

Project: _____
 Location: _____
 Cat.No: _____
 Type: _____
 Qty: _____
 Notes: _____

Ordering guide

example: TRA-CA-7/4-188-25-D2-DT5-WH-VDA

Family	Base ³	Pole Dia. (in.) (Base/Top)	Wall Thickness (in.)	Height ⁴	Drilling / Tenon Configuration ¹	Drilling Template ²	Finish	Options ³
TRA Tapered Round Aluminum	CA Cast Aluminum Base	5/3	125 0.125" 188 0.188"	14	D1 1 Way D1@180 1 Way @ 180 D2 2 Way @ 180 D2@90 2 Way @ 90 D3 3 Way @ 90 D3@120 3 Way @ 120 D4 4 Way	DT1 Drill Template 1 DT2 Drill Template 2 DT3 Drill Template 3 DT4 Drill Template 4 DT5 Drill Template 5 DT6 Drill Template 6 [DTX-xxx] ⁶ Custom Template (see drill template chart for details)	BK Black BZ Bronze WH White DG Dark Grey MG Medium Grey GY3 Light Grey, Smooth SSDGY SolarForm Dark Grey (RAL7011)	FES ⁵ Festoon Outlet
				15				VDA ⁷ Vibration Dampener
				16				AHH ⁵ Additional Hand Hole
				18				DR ⁵ Duplex Receptacle
				20				VPA Vandalproof Screws
				25				GFI ⁵ DR with GFI (120V only)
	HB Hinged Base (5/3-125 only, max 16")	6/4	125 0.125" 188 0.188"	20	T2D4L 2 3/4" OD x 4" T2D6L 2 3/4" OD x 6" T3D4L 3" OD x 4" T4D6L 4" OD x 6"	N No Template (for Tenon and Plain Top Options)	OC ⁵ Optional Color Paint (ex: RAL7024) SC ⁵ Special/ Custom Color (specify, must supply color chip)	CL1/2 ⁵ Coupling 1/2"
				25				CL3/4 ⁵ Coupling 3/4"
				30				CL1 ⁵ Coupling 1"
				35				CL1-1/4 ⁵ Coupling 1-1/4"
				40				CL1-1/2 ⁵ Coupling 1-1/2"
				40				NL1/2 ⁵ Nipple 1/2"
7/4	156 0.156" 188 0.188"	25	Tenons		No Drilling/Tenon	P Plain Top	NL3/4 ⁵ Nipple 3/4"	
		30	NL1 ⁵ Nipple 1"					
		35	NL1-1/4 ⁵ Nipple 1-1/4"					
		40	NL1-1/2 ⁵ Nipple 1-1/2"					
		40						
		40						
8/5	188 0.188" 250 0.250"	25						
		30						
		35						
		40						
		40						
		40						
10/6	188 0.188" 250 0.250"	35						
		40						
		40						
		40						
		40						
		40						

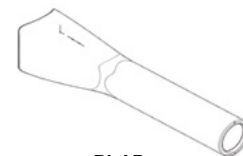
1. See Drilling Configurations on Page 2.
 2. See Luminaire Drilling Templates on Page 2.
 3. Not all options available with all configurations. Consult factory for more details.
 4. Pole heights can be cut to length. Specify as a whole number in ft. (ex. 11, 13) or to the inch as a decimal (ex. 15.33 = 15' 4").

5. Option must be specified by the customer before order release. FES, DR, GFI, AHH options typically must be placed 12" away from standard hand hole (20" above base).
 6. Custom drill templates (DTX) require factory quote.
 7. VDA is required on all poles equal or greater than 25ft in height.

Accessories

Service	Base & Pole Size	12NC	Description (Diameter x Length x Hook w/ Bolt Circle Template)
Anchor Bolts + Templates			
For standard shipment with the pole (order 1 per pole)	CA-5/3	912401613963	AB 3/4x17x3-G DEC w/ 9 BC ABT
	CA-6/4	912401614227	AB 1x33x3-G DEC w/ 9.5 BC ABT
	CA-7/4	912401614225	AB 1x33x3-G DEC w/ 10.5 BC ABT
	CA-8/5	912401614223	AB 1x33x3-G DEC w/ 11.5 BC ABT
	CA-10/6	912401614221	AB 1-1/4x44x4-G DEC w/ 14.5 BC ABT
	HB-5/3	912401613966	AB 3/4x17x3-G DEC w/ 10.5 BC ABT
For RapidShip or Pre-Ship service with the pole (order 1 per pole)	CA-5/3	912401613958	AB 3/4x17x3-G DEC w/ 9 BC ABT-RS
	CA-6/4	912401614226	AB 1x33x3-G DEC w/ 9.5 BC ABT-RS
	CA-7/4	912401614224	AB 1x33x3-G DEC w/ 10.5 BC ABT-RS
	CA-8/5	912401614222	AB 1x33x3-G DEC w/ 11.5 BC ABT-RS
	CA-10/6	912401614220	AB 1-1/4x44x4-G DEC w/ 14.5 BC ABT-RS
	HB-5/3	912401613961	AB 3/4x17x3-G DEC w/ 10.5 BC ABT-RS

Part No.	Description
Brackets	
RLAR-1A-R4@4.9-(finish) (for 4" pole tops)	Cast Aluminum mounting arm, 15" long with DT6 drill pattern. (order 1 per luminaire). For use with Lumec Roadway and Gardco SolarForm luminaires. Specify finish to match pole.
RLAR-1A-R5@6-(finish) (for 5" pole tops)	

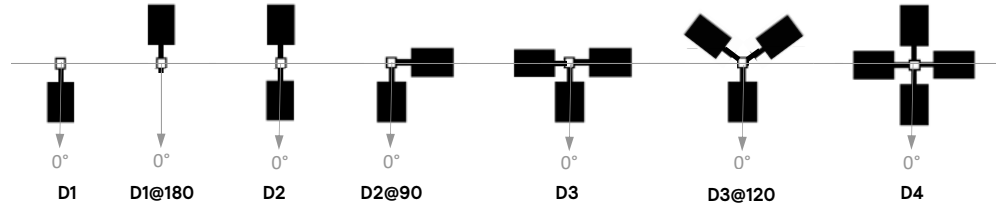


RLAR

Poles Tapered Round Aluminum

Drilling Configuration

Code	Description
D1	Single luminaire
D1@180	Single luminaire @ 180
D2	Two luminaires @ 180
D2@90	Two luminaires @ 90
D3	Three luminaires @ 90
D3@120	Three luminaires @ 120
D4	Four luminaires @ 90

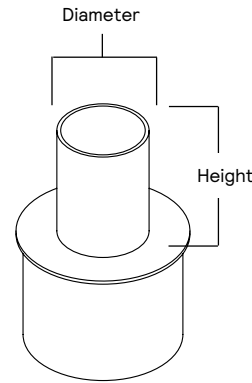


Ref. access door at 0° for all

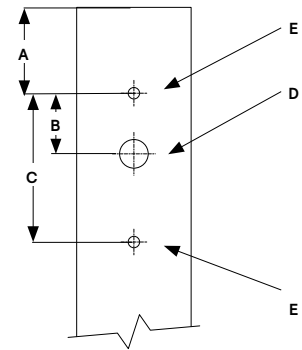
Legacy design places access door at 180°

Tenon Dimensions

Code	Description	Height
T2D4L	2.375" (60mm)	4" (102mm)
T2D6L	2.375" (60mm)	6" (152mm)
T3D4L	3" (76mm)	4" (102mm)
T4D6L	4" (102mm)	6" (152mm)



Pole Top Drilling

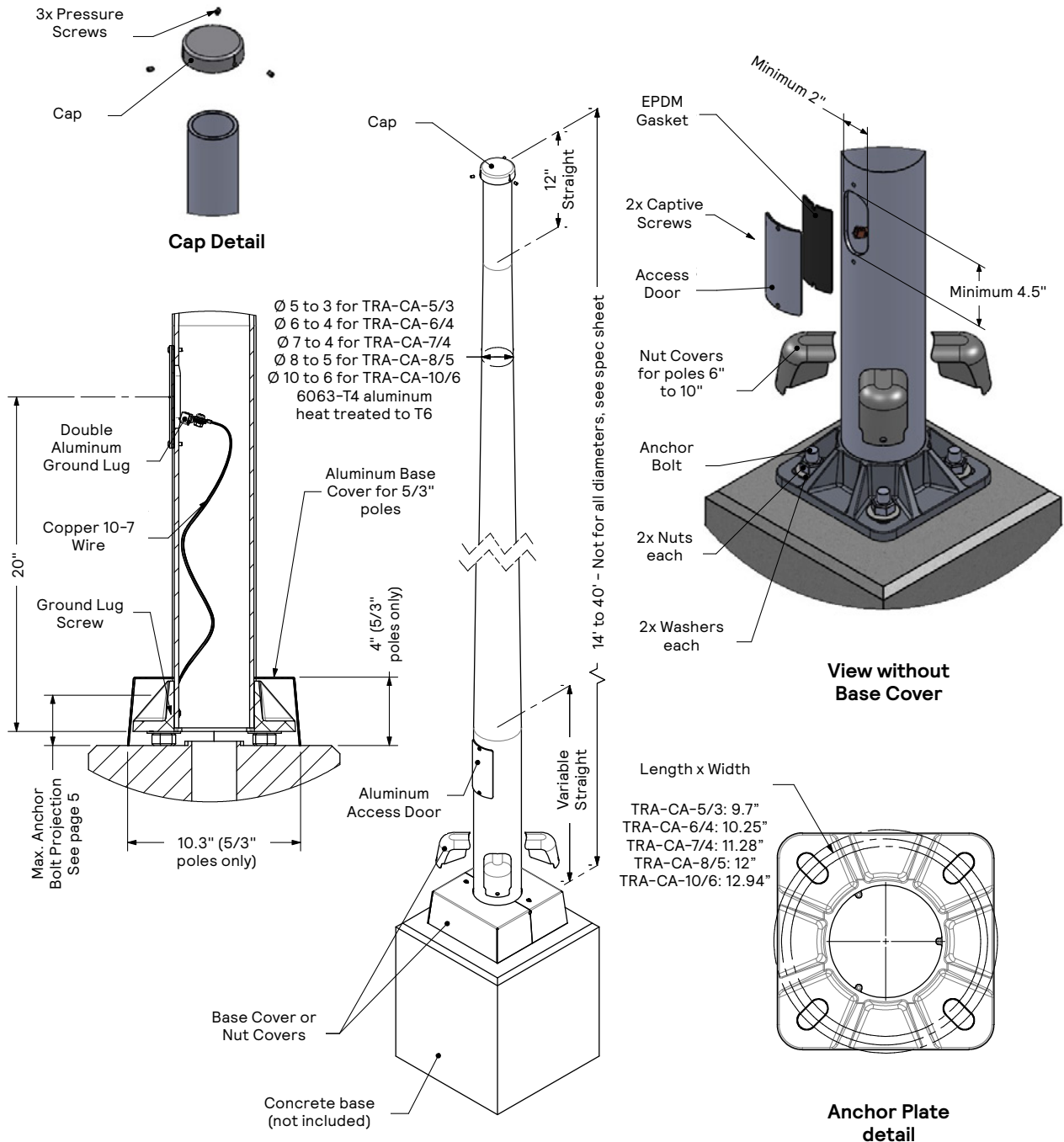


Luminaire Drill Pattern

Code	Description	Luminaires	Pole Drilling				
			A To Pole Top	B	C Full Extent	D Wireway Hole	E Bolt Hole
DT1	Drill Template 1	Gardco SlenderForm Round SFRA	2.25" (57mm)	1.5" (38.1mm)	3" (76mm)	0.875" (22.2mm)	0.40" (10.2mm)
DT2	Drill Template 2	Gardco SlenderForm Square - SFA Gardco Gullwing - GL13, GL18 Gardco Form Ten - EH14L, EH19L, CAL17, CAL22, MAL17, MAL22	2.25" (57mm)	2.17" (55mm)	3.84" (98mm)	0.875" (22.2mm)	0.39" (9.9mm)
DT3	Drill Template 3	Gardco PowerForm PFAS	2.25" (57mm)	1.75" (44mm)	3.84" (98mm)	0.875" (22.2mm)	0.41" (10.4mm)
DT4	Drill Template 4	Gen1 Stonco/Keene AL150-G1, AL200-G1	2.5" (64mm)	1.7" (43mm)	3.5" (89mm)	0.875" (22.2mm)	0.41" (10.4mm)
DT5	Drill Template 5	Gardco EcoForm Gen2 - ECF-S, ECF-L Gardco PureForm Gen2 - P15, P20, P26, P34	3" (76mm)	1" (25mm)	3" (76mm)	1" (25mm)	0.41" (10.4mm)
DT6	Drill Template 6	Hole pattern drilled for the following: Gen2 Stonco/Keene AL70-G2 and AL150-G2, or to attach RLAR bracket accessory, suitable for use with: Lumec Capella CPLM, CPLS Lumec RoadStar GPLM, GPLS Lumec RoadFocus RFS, RFM, RFL Lumec RoadView RVM, RVS Lumec MiniView SVS Lumec StreetView SVM Gardco SolarForm BRP710	2.5" (64mm)	1" (25mm)	2" (50mm)	0.875" (22mm)	0.5" (12.7mm)

Poles Tapered Round Aluminum

Dimensions and Specifications – Cast Aluminum Base



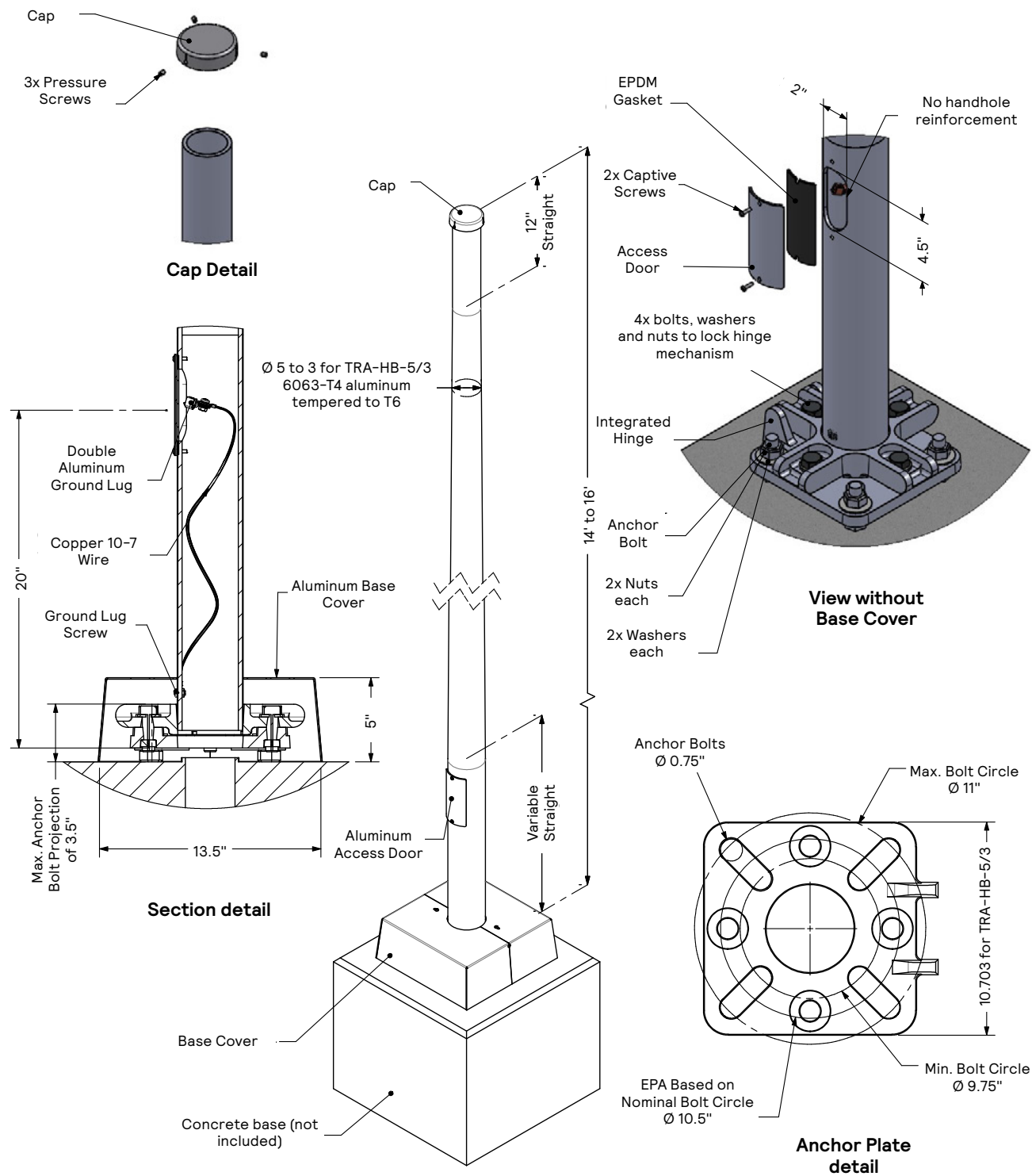
* Anchor Bolt Lock Washers are not normally required and are not included in standard anchor bolt sets. They are available upon request at additional cost.

** Grouting should include a drainage slot or tube (by others) to permit water to drain from the base of the pole. Failure to provide drainage may weaken the pole base structure over time and may result in pole base failure, for which Gardco is not responsible.

NOTE: Factory supplied template must be used when setting anchor bolts. Gardco will not honor any claim for incorrect anchorage placement from failure to use factory supplied templates.

Poles Tapered Round Aluminum

Dimensions and Specifications - Hinged Base



Poles Tapered Round Aluminum

Pole Data

Product Catalog Number	Pole Specs						Anchor Bolt Data				
	Pole Diameter Base (in.)	Pole Diameter Base (in.)	Wall Thickness (in.)	Height (ft.)	Pole Weight (lbs.)	Hand Hole Reinforced	Bolt Circle (in.) EPA Nominal	Min. Bolt Circle (in.)	Max. Bolt Circle (in.)	Anchor Bolt Spec (in.)	Anchor Bolt Max Proj. (in.)
TRA-CA-5/3-125-14	5	3	0.125	14	24	No	9	8.5	10	3/4 x 17 x 3	3.25
TRA-CA-5/3-125-15	5	3	0.125	15	25	No	9	8.5	10	3/4 x 17 x 3	3.25
TRA-CA-5/3-125-16	5	3	0.125	16	27	No	9	8.5	10	3/4 x 17 x 3	3.25
TRA-CA-5/3-125-18	5	3	0.125	18	31	No	9	8.5	10	3/4 x 17 x 3	3.25
TRA-CA-5/3-125-20	5	3	0.125	20	34	No	9	8.5	10	3/4 x 17 x 3	3.25
TRA-CA-5/3-188-14	5	3	0.188	14	31	No	9	8.5	10	3/4 x 17 x 3	3.25
TRA-CA-5/3-188-15	5	3	0.188	15	33	No	9	8.5	10	3/4 x 17 x 3	3.25
TRA-CA-5/3-188-16	5	3	0.188	16	35	No	9	8.5	10	3/4 x 17 x 3	3.25
TRA-CA-5/3-188-18	5	3	0.188	18	39	No	9	8.5	10	3/4 x 17 x 3	3.25
TRA-CA-5/3-188-20	5	3	0.188	20	44	No	9	8.5	10	3/4 x 17 x 3	3.25
TRA-CA-6/4-125-20	6	4	0.125	20	43	Casting	9.5	9	10	1 x 33 x 3	3.5
TRA-CA-6/4-125-25	6	4	0.125	25	53	Casting	9.5	9	10	1 x 33 x 3	3.5
TRA-CA-6/4-188-20	6	4	0.188	20	63	Casting	9.5	9	10	1 x 33 x 3	3.5
TRA-CA-6/4-188-25	6	4	0.188	25	79	Casting	9.5	9	10	1 x 33 x 3	3.5
TRA-CA-7/4-156-25	7	4	0.156	25	73	Casting	10.5	10	11	1 x 33 x 3	3.5
TRA-CA-7/4-156-30	7	4	0.156	30	88	Casting	10.5	10	11	1 x 33 x 3	3.5
TRA-CA-7/4-188-25	7	4	0.188	25	87	Casting	10.5	10	11	1 x 33 x 3	3.5
TRA-CA-7/4-188-30	7	4	0.188	30	105	Casting	10.5	10	11	1 x 33 x 3	3.5
TRA-CA-8/5-188-25	8	5	0.188	25	104	Extruded	11.5	11	12	1 x 33 x 3	3.5
TRA-CA-8/5-188-30	8	5	0.188	30	124	Extruded	11.5	11	12	1 x 33 x 3	3.5
TRA-CA-8/5-188-35	8	5	0.188	35	145	Extruded	11.5	11	12	1 x 33 x 3	3.5
TRA-CA-8/5-250-25	8	5	0.250	25	142	Extruded	11.5	11	12	1 x 33 x 3	3.5
TRA-CA-8/5-250-30	8	5	0.250	30	171	Extruded	11.5	11	12	1 x 33 x 3	3.5
TRA-CA-8/5-250-35	8	5	0.250	35	199	Extruded	11.5	11	12	1 x 33 x 3	3.5
TRA-CA-10/6-188-35	10	6	0.188	35	179	Extruded	14.5	14	15	1-1/4 x 44 x 4	4
TRA-CA-10/6-188-40	10	6	0.188	40	205	Extruded	14.5	14	15	1-1/4 x 44 x 4	4
TRA-CA-10/6-250-35	10	6	0.250	35	247	Extruded	14.5	14	15	1-1/4 x 44 x 4	4
TRA-CA-10/6-250-40	10	6	0.250	40	282	Extruded	14.5	14	15	1-1/4 x 44 x 4	4
TRA-HB-5/3-125-14	5	3	0.125	14	24	No	10.5	9.75	11	3/4 x 17 x 3	3.5
TRA-HB-5/3-125-15	5	3	0.125	15	25	No	10.5	9.75	11	3/4 x 17 x 3	3.5
TRA-HB-5/3-125-16	5	3	0.125	16	27	No	10.5	9.75	11	3/4 x 17 x 3	3.5

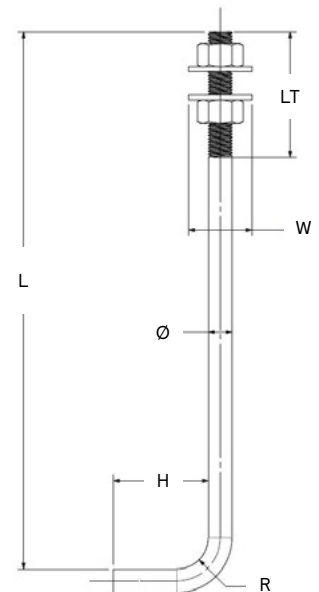
Poles Tapered Round Aluminum

EPA Table

Product Catalog Number	AASHTO 2001 - EPA ft ²					
	80 MPH	90 MPH	100 MPH	110 MPH	120 MPH	130 MPH
TRA-CA-5/3-125-14	12.54	9.45	7.23	5.60	4.41	3.65
TRA-CA-5/3-125-15	11.40	8.51	6.42	4.92	3.83	3.14
TRA-CA-5/3-125-16	10.36	7.65	5.74	4.27	3.30	2.67
TRA-CA-5/3-125-18	8.37	6.03	4.37	3.10	2.32	1.79
TRA-CA-5/3-125-20	6.76	4.69	3.20	2.12	1.48	1.05
TRA-CA-5/3-188-14	16.77	12.77	9.94	7.82	6.29	5.25
TRA-CA-5/3-188-15	15.35	11.64	8.96	7.01	5.58	4.66
TRA-CA-5/3-188-16	14.07	10.58	8.08	6.25	4.92	4.08
TRA-CA-5/3-188-18	11.62	8.60	6.42	4.82	3.75	3.00
TRA-CA-5/3-188-20	9.51	6.95	5.05	3.63	2.75	2.12
TRA-CA-6/4-125-20	10.62	7.59	5.74	4.40	3.49	2.83
TRA-CA-6/4-125-25	6.27	4.01	2.61	1.70	1.19	0.85
TRA-CA-6/4-188-20	17.60	13.06	10.19	8.08	6.58	5.47
TRA-CA-6/4-188-25	11.60	8.24	6.03	4.53	3.59	2.87
TRA-CA-7/4-156-25	14.00	10.33	7.73	6.03	4.86	3.94
TRA-CA-7/4-156-30	9.25	6.32	4.40	3.13	2.38	1.79
TRA-CA-7/4-188-25	17.65	13.26	10.10	7.98	6.48	5.35
TRA-CA-7/4-188-30	12.18	8.67	6.29	4.69	3.69	2.91
TRA-CA-8/5-188-25	24.53	18.77	14.88	12.05	9.94	8.28
TRA-CA-8/5-188-30	17.42	13.02	10.17	8.08	6.56	5.39
TRA-CA-8/5-188-35	12.13	8.71	6.62	5.10	3.98	3.14
TRA-CA-8/5-250-25	35.58	27.51	21.95	17.91	14.82	12.48
TRA-CA-8/5-250-30	26.34	20.06	15.89	12.81	10.52	8.76
TRA-CA-8/5-250-35	19.51	14.56	11.30	9.02	7.30	5.93
TRA-CA-10/6-188-35	24.10	18.53	14.59	11.64	9.39	7.56
TRA-CA-10/6-188-40	18.14	13.75	10.65	8.34	6.55	5.11
TRA-CA-10/6-250-35	36.01	27.91	22.19	17.91	14.67	12.08
TRA-CA-10/6-250-40	28.26	21.72	17.13	13.68	11.05	8.96
TRA-HB-5/3-125-14	12.54	9.45	7.23	5.60	4.41	3.65
TRA-HB-5/3-125-15	11.40	8.51	6.42	4.92	3.83	3.14
TRA-HB-5/3-125-16	10.36	7.65	5.74	4.27	3.30	2.67

CSA-S6-14 - EPA ft ²					
300 Pa 79 MPH	400 Pa 91 MPH	500 Pa 102 MPH	600 Pa 111 MPH	700 Pa 120 MPH	800 Pa 129 MPH
8.73	5.93	4.27	3.16	2.38	1.78
7.82	5.21	3.65	2.61	1.87	1.34
7.01	4.57	3.1	2.12	1.44	0.9
5.54	3.36	2.07	1.21	0.56	0.12
4.27	2.32	1.15	0.37	N/A	N/A
11.89	8.32	6.19	4.76	3.73	2.97
10.78	7.44	5.44	4.08	3.14	2.42
9.77	6.64	4.76	3.49	2.61	1.93
8.01	5.25	3.55	2.44	1.64	1.05
6.52	4.01	2.51	1.5	0.79	0.27
7.01	4.14	2.42	1.28	0.46	N/A
3.45	1.19	N/A	N/A	N/A	N/A
12.44	8.22	5.7	3.98	2.81	1.89
7.79	4.47	2.42	1.09	0.13	N/A
9.64	5.74	3.39	1.83	0.85	0.46
5.64	2.42	0.49	N/A	N/A	N/A
12.67	7.98	5.18	3.32	2.12	1.6
8.14	4.27	1.99	0.46	N/A	N/A
17.48	11.3	7.75	6.07	4.92	4.08
11.76	6.62	3.75	2.66	1.93	1.39
7.01	2.74	0.52	N/A	N/A	N/A
26.54	18.1	13.16	10.62	8.76	7.46
19.27	12.28	8.28	6.42	5.15	4.21
13.26	7.43	4.27	2.91	1.99	1.34
15.11	9.94	7.1	5.35	4.17	3.36
9.49	5.35	3.06	1.93	1.21	0.7
25.27	17.55	13.19	10.42	8.53	7.17
18.08	11.79	8.21	6.23	4.9	3.92
8.73	5.93	4.27	3.16	2.38	1.78
7.82	5.21	3.65	2.61	1.87	1.34
7.01	4.57	3.1	2.12	1.44	0.9

Standard Anchor Bolt



Note: EPA (Effective Projected Area) rating is in accordance with AASHTO-2001 and CSA-S6-14 standards, with 50-year return period, with a 50 pound load placed at 1 foot above pole top.

Poles Tapered Round Aluminum

Specifications

Pole shaft

The pole shaft is fabricated from a single piece of extruded 6063-T4 series aluminum, heat treated and tempered to 6063-T6. Shaft includes factory installed copper ground lug, 10-7 wire, and ground lug screw. A vibration dampener (VDA) is automatically added by the factory for all poles 25ft or higher.

Anchor Base

The pole anchor base consists of a cast aluminum base welded to the shaft (CA), or a cast aluminum hinged base (HB).

Anchor Bolts

Anchor bolts are fabricated from a commercial quality hot rolled carbon steel bar that meets or exceeds a minimum guaranteed yield strength of 55 ksi. Bolts have an "L" bend on one end and threaded on the opposite end. Anchor bolts are galvanized in accordance with ASTM A-153.6 C1.C. Four (4) properly sized bolts, each furnished with two (2) regular hex nuts and two (2) flat washers, are provided per pole (priced and ordered separately), unless otherwise specified. Conforms to AASHTO M 314 90 and ASTM F1554.

Customer Specified Options

The options, DTX, FES, DR, GFI, AHH, CL*, and NL* require factory quotation. Poles with custom drilling templates (DTX) are provided as a service, however Signify holds no liability for improper installation and safety when using non-Signify luminaires or attachments on Gardco poles via drilling, tenon mounting, or coupling and nipple mounting. It is the responsibility of the customer to ensure the pole is loaded and installed in a safe manner to the limitations of the pole structure. See "Warning" paragraph for more details.

Base Cover and Nut Covers

A two-piece painted square aluminum base cover that completely conceals the entire base plate and anchorage. Base cover is provided standard with TRA-CA-5/3 and TRA-HB-5/3 poles. All other poles are provided with nut covers.

Hand hole

The hand hole has a minimum size of 2"x4.5" inside opening in the pole shaft. Included is an aluminum cover plate, EPDM gasket, and captive attachment screws. The hand hole is located 20" above the base and 0° clockwise with respect to the luminaire arm when viewed from the top of the pole for one arm. For two arms the hand hole is located directly under one arm.

Pole Top Cap

Each pole assembly is provided with a removable aluminum pole top cap painted to match the specified pole and attached with three pressure screws.

Finish

Poles are available with Gardco's standard textured color finishes - Black, White, Bronze, Dark Grey, Medium Grey, and Lumec GY3 for a match with roadway luminaire finishes. Optional custom colors also available.

Couplings and Nipples

Couplings (NPSC standard internal threads) and Nipples (NPT standard external threads) are available to mount 3rd party objects to the pole. For most applications Couplings and Nipples must be at least 4' from the base of the pole. Lengths are as follows:

Couplings < 1" dia. = 1" length
Couplings >= 1" dia. = 1.5" length
Nipples < 1" dia. = 1.5" length
Nipples >= 1" dia. = 2" length

See "Customer Specified Options" paragraph for more details

Duplex Receptacle (DR and GFI)

DR and GFI options are placed at 2' below the pole top on the same side as the hand hole unless otherwise specified. DR or GFI options cannot be placed within 1' of the the hand hole. Maximum output of the receptacles are 15A.

General Pole Information

Design

EPA specs conform to AASHTO 2001 and CSA-S6-14. CSA poles as charted are designed to withstand dead loads and predicted dynamic loads developed by variable wind pressure with an additional 2.5 gust factor under the following conditions: The charted weights include luminaire(s) and/or mounting bracket(s). Poles installed in areas of known abnormal conditions may require special consideration. For example: coastal areas, airports and areas of special winds. Poles are designed for ground mounted applications. Poles mounted on structures (such as buildings and bridges) may also necessitate special consideration requiring Gardco'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 pole.

Warning

This design information is intended as a general guideline only. The customer is solely responsible for proper selection of pole, luminaire, accessory and foundation under the given site conditions and intended usage. The addition of any items to the pole, in addition to the luminaire, will dramatically impact the EPA load on that pole. It is strongly recommended that a qualified professional be consulted to analyze the loads given the user's specific needs to ensure proper selection of the pole, luminaire, accessories, and foundation. Gardco assumes no responsibility for such proper analysis or product selections. Failure to ensure proper site analysis, pole selection, loads and installation can result in pole failure, leading to serious injury or property damage.

Warranty

Gardco Aluminum poles are covered by a 5-year structural and finish warranty. For more information visit signify.com/warranties.

