FAN PRODUCTS

Globe Motors™

EXPERTS IN MOTION CONTROL

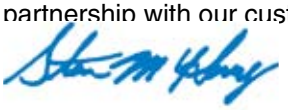
Globe Motors™

At Globe Motors, we're committed to providing customers with products and services that meet or exceed their requirements — on time, every time. This commitment is not just a baseline for performance, it is the least we can do to provide the highest level of support.

Globe Motors' quality policy affects every employee and work process. From top management to our customer service representatives, from research and development to application support, our entire organization is involved in the process of quality.

Major changes in the way our organization approaches the quality process have resulted in better customer service, better products, and better after-the-sale support.

At Globe Motors, quality is a long-term partnership with our customers.



Steve McHenry
President & General Manager

Globe Motors Headquarters
Dayton, Ohio, U.S.A.

Globe Motors™

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Note: A complete range of standard or custom-designed, MIL-spec vaneaxial blowers and fans is also available from Globe Motors. Call or write for details.

Availability — Globe Motors AC and DC Commercial Cooling Fans are available from and supported by a network of distributor stocking locations.

Globe Motors' industrial cooling fan product line provides cooling solutions for most industrial applications, from office copiers and business equipment to laboratory instrumentation, power supplies, telecommunications, and industrial control racks.

We offer a wide range of industrial cooling fans in both AC (115 and 230 VAC) and brushless DC (12, 24, and 48 VDC). Sizes range from 1.6" (40 mm) square to 5.9" x 6.8" (150 mm x 172 mm). Airflow ranges from 6 CFM to 230 CFM.

Quality and reliability are the key considerations in our cooling fan line. Utilizing CAD/CAM and strict statistical process controls, our fans have a life expectancy of 75,000 hours minimum. These same controls allow us to have our quality objective of 0.02% Field Failure Rate (<200 parts per million).

Special care has been taken to design in operating life and acoustical quality. All of our fans use precision, life-lubricated ball bearings to provide long life and minimal acoustical degradation over the operating lifetime. Noise has been further lowered by designs which optimize airflow over the struts. These designs are extensively tested in an anechoic chamber before ever reaching the production stage. Finally, during the manufacturing process, sophisticated dynamic balancing techniques are used on the rotor and impeller to further ensure long life and reduced noise.

Design and manufacturing improvements are investigated continually, which allow us to give our customer superior performance and quality at a competitive price.

Globe Motors also maintains a staff of application engineers to assist you in fan selection and to provide fast resolutions to technical issues. Please feel free to contact your local Globe Motors sales office for any assistance you may require in selecting the correct Globe Motors cooling fan for your application.

Standard Part Numbers and Data

A24T12

Globe Motors Part Number	Nominal Voltage VAC	Frequency Hz	Watts	Line Amps	Locked Rotor Amps	RPM	Acoustic Noise dBA	Airflow (Min.)		Weight	
								CFM	L/Sec.	ozs.	grams
A24-B12A-15W3-000	115	50 / 60	4.0 / 3.8	0.044 / 0.038	0.07 / 0.06	2350 / 3000	28 / 29	8 / 10	3.8 / 4.7	5.0	140

DIMENSIONS: 2.36" (60 mm) square x 1.18" (30 mm) thick

A31T10

Globe Motors Part Number	Nominal Voltage VAC	Frequency Hz	Watts	Line Amps	Locked Rotor Amps	RPM	Acoustic Noise dBA	Airflow (Min.)		Weight	
								CFM	L/Sec.	ozs.	grams
A31-B10A-15W3-000	115	50 / 60	6.3 / 5.0	0.75/ 0.54	0.09 / 0.08	2700 / 3100	33 / 40	17 / 20	8.0 / 9.4	7.7	220

DIMENSIONS: 3.15" (80 mm) square x 1.00" (25 mm) thick

A31T15

Globe Motors Part Number	Nominal Voltage VAC	Frequency Hz	Watts	Line Amps	Locked Rotor Amps	RPM	Acoustic Noise dBA	Airflow (Min.)		Weight	
								CFM	L/Sec.	ozs.	grams
A31-B15A-15T1-000	115	50 / 60	4.2 / 4.0	0.056 / 0.043	0.065 / 0.060	1750 / 2500	23 / 25	18 / 26	8.5 / 12.3	10.6	300
A31-B15A-15T2-000	115	50 / 60	4.5 / 4.2	0.059 / 0.023	0.090 / 0.080	2200 / 2750	27 / 31	21 / 28	9.9 / 13.2	10.6	300
A31-B15A-15T3-000	115	50 / 60	6.9 / 6.7	0.125 / 0.100	0.160 / 0.140	2750 / 3300	33 / 38	28 / 34	13.2 / 16.0	10.6	300
A31-B15A-15W1-000	115	50 / 60	4.2 / 4.0	0.050 / 0.043	0.065 / 0.060	1750 / 2500	23 / 25	18 / 26	8.5 / 12.3	10.6	300
A31-B15A-15W2-000	115	50 / 60	4.5 / 4.2	0.027 / 0.023	0.090 / 0.080	2200 / 2750	27 / 31	21 / 28	9.9 / 13.2	10.6	300
A31-B15A-15W3-000	115	50 / 60	6.9 / 6.7	0.125 / 0.100	0.160 / 0.140	2750 / 3300	33 / 38	28 / 34	13.2 / 16.0	10.6	300
A31-B15A-23W1-000	230	50 / 60	4.6 / 4.7	0.044 / 0.024	0.060 / 0.055	1900 / 2250	23 / 25	19 / 25	9.0 / 11.8	10.6	300
A31-B15A-23W2-000	230	50 / 60	4.7 / 4.5	0.044 / 0.023	0.055 / 0.050	2300 / 2900	29 / 31	22 / 29	10.4 / 13.7	10.6	300
A31-B15A-23W3-000	230	50 / 60	6.6 / 6.8	0.060 / 0.043	0.080 / 0.070	2750 / 3300	33 / 38	27 / 34	12.7 / 16.0	10.6	300

DIMENSIONS: 3.15" (80 mm) square x 1.50" (38 mm) thick

A36T10

Globe Motors Part Number	Nominal Voltage VAC	Frequency Hz	Watts	Line Amps	Locked Rotor Amps	RPM	Acoustic Noise dBA	Airflow (Min.)		Weight	
								CFM	L/Sec.	ozs.	grams
A36-B10A-15T1-000	115	50 / 60	5.5 / 5.0	0.073 / 0.052	0.100 / 0.090	1600 / 2200	22 / 25	18 / 22	8.5 / 10.4	10.5	300
A36-B10A-15T2-000	115	50 / 60	6.0 / 5.3	0.074 / 0.053	0.095 / 0.090	2300 / 2800	30 / 35	25 / 30	11.8 / 14.2	10.5	300
A36-B10A-15T3-000	115	50 / 60	12.0 / 9.0	0.116 / 0.120	0.180 / 0.160	2650 / 3200	33 / 38	29 / 35	13.7 / 16.5	10.5	300
A36-B10A-23T1-000	230	50 / 60	6.0 / 5.0	0.043 / 0.025	0.050 / 0.040	1700 / 2300	22 / 26	20 / 22	9.4 / 10.4	10.5	300
A36-B10A-23T2-000	230	50 / 60	6.0 / 5.3	0.044 / 0.025	0.060 / 0.060	2300 / 2600	30 / 35	25 / 30	11.8 / 14.2	10.5	300
A36-B10A-23T3-000	230	50 / 60	11.9 / 9.0	0.068 / 0.055	0.100 / 0.080	2650 / 3200	34 / 39	30 / 35	14.2 / 16.5	10.5	300

DIMENSIONS: 3.62" (92 mm) square x 1.00" (25 mm) thick

Note: Options and accessories are available. Contact your local distributor or Globe Motors.

A47T10

Globe Motors Part Number	Nominal Voltage VAC	Frequency Hz	Watts	Line Amps	Locked Rotor Amps	RPM	Acoustic Noise dBA	Airflow (Min.)		Weight	
								CFM	L/Sec.	ozs.	grams
A47-B10A-15T2-000	115	50 / 60	8.0 / 7.2	0.090 / 0.079	0.110 / 0.100	2050 / 2300	29 / 30	52 / 57	24.5 / 26.9	13	360
A47-B10A-15T3-000	115	50 / 60	11.0 / 11.4	0.136 / 0.134	0.200 / 0.180	2550 / 3100	34 / 38	68 / 77	32.1 / 36.3	13	360
A47-B10A-23T2-000	230	50 / 60	7.0 / 6.8	0.034 / 0.033	0.060 / 0.060	2050 / 2200	29 / 30	52 / 56	24.5 / 26.4	13	360
A47-B10A-23T3-000	230	50 / 60	10.0 / 10.6	0.090 / 0.068	0.110 / 0.100	2500 / 2900	34 / 38	65 / 77	30.7 / 36.3	13	360

DIMENSIONS: 4.69" (119 mm) square x 1.00" (25 mm) thick

A47T15

Globe Motors Part Number	Nominal Voltage VAC	Frequency Hz	Watts	Line Amps	Locked Rotor Amps	RPM	Acoustic Noise dBA	Airflow (Min.)		Weight	
								CFM	L/Sec.	ozs.	grams
A47-B15A-15T1-100	115	50 / 60	6.0 / 5.5	0.090 / 0.080	0.095 / 0.085	1350 / 1450	27 / 28	46 / 49	21.7 / 23.3	19.4	550
A47-B15A-15T2-100	115	50 / 60	11.0 / 10.0	0.160 / 0.140	0.200 / 0.170	2400 / 2600	34 / 37	81 / 88	31.7 / 33.3	19.4	550
A47-B15A-15T3-100	115	50 / 60	15.5 / 14.5	0.250 / 0.210	0.320 / 0.270	2600 / 2900	37 / 41	88 / 102	41.5 / 48.1	19.4	550
A47-B15A-23T1-100	230	50 / 60	6.5 / 6.0	0.020 / 0.045	0.055 / 0.050	1350 / 1450	27 / 28	46 / 49	31.7 / 33.3	19.4	550
A47-B15A-23T2-100	230	50 / 60	12.0 / 11.0	0.100 / 0.080	0.120 / 0.110	2400 / 2600	34 / 37	81 / 88	38.3 / 41.7	19.4	550
A47-B15A-23T3-100	230	50 / 60	15.0 / 14.0	0.120 / 0.100	0.160 / 0.140	2600 / 2900	37 / 41	88 / 102	41.5 / 48.1	19.4	550

DIMENSIONS: 4.69" (119 mm) square x 1.50" (38 mm) thick

A59T15

Globe Motors Part Number	Nominal Voltage VAC	Frequency Hz	Watts	Line Amps	Locked Rotor Amps	RPM	Acoustic Noise dBA	Airflow (Min.)		Weight	
								CFM	L/Sec.	ozs.	grams
A59-B15A-15T1-000	115	50 / 60	15.7 / 18.0	0.155 / 0.190	0.180 / 0.200	1450 / 1650	35 / 38	86 / 110	40.6 / 51.9	26	750
A59-B15A-15T2-000	115	50 / 60	22.0 / 21.7	0.210 / 0.200	0.230 / 0.240	2360 / 2600	46 / 50	144 / 170	68.0 / 80.2	26	750
A59-B15A-15T3-000	115	50 / 60	32.0 / 33.0	0.360 / 0.330	0.550 / 0.530	2800 / 3200	52 / 56	178 / 220	84.0 / 103.8	26	750
A59-B15A-23T1-000	230	50 / 60	18.0 / 15.6	0.110 / 0.092	0.100 / 0.120	1450 / 1650	35 / 38	86 / 110	40.6 / 51.9	26	750
A59-B15A-23T2-000	230	50 / 60	26.0 / 26.5	0.140 / 0.125	0.140 / 0.160	2420 / 2600	46 / 50	144 / 170	68.0 / 80.2	26	750
A59-B15A-23T3-000	230	50 / 60	35.0 / 37.0	0.180 / 0.170	0.280 / 0.310	2870 / 3200	52 / 56	178 / 220	84.0 / 103.8	26	750

DIMENSIONS: 5.91" (150 mm) over flats x 6.78" (172 mm) DIA. x 1.50" (38 mm) thick

NOTES:

Standard Part Numbers and Data

D16T06

Globe Motors Part Number	Nominal Voltage VDC	Voltage Operating Range VDC	Line Watts Nom./Max.	Amps Nom./Max.	RPM	Acoustic Noise dBA	Airflow (Min.) CFM	Airflow (Min.) L/Sec.	Weight ozs.	Weight grams
D16-B06A-04W3-000	12	10.2 / 13.8	0.80 / 1.08	0.07 / 0.09	6000	28	6	2.8	.71	20
D16-B06A-04W5-000	12	10.2 / 13.8	1.02 / 1.32	0.09 / 0.11	8000	34	8	3.8	.71	20

DIMENSIONS: 1.60" (41 mm) square x .60" (15 mm) thick

D24T08

Globe Motors Part Number	Nominal Voltage VDC	Voltage Operating Range VDC	Line Watts Nom./Max.	Amps Nom./Max.	RPM	Acoustic Noise dBA	Airflow (Min.) CFM	Airflow (Min.) L/Sec.	Weight ozs.	Weight grams
D24-B08A-04W3-000	12	6.0 / 13.8	0.84 / 1.08	0.07 / 0.09	3200	25	13	6.1	3.0	85
D24-B08A-04W4-000	12	6.0 / 13.8	1.08 / 1.44	0.09 / 0.12	4000	29	16	7.6	3.0	85
D24-B08A-05W3-000	24	15.0 / 27.6	0.96 / 1.44	0.04 / 0.06	3200	25	13	6.1	3.0	85
D24-B08A-05W4-000	24	15.0 / 27.6	1.20 / 1.92	0.05 / 0.08	4000	29	16	7.6	3.0	85

DIMENSIONS: 2.36" (60 mm) square x .79" (20 mm) thick

D24T10

Globe Motors Part Number	Nominal Voltage VDC	Voltage Operating Range VDC	Line Watts Nom./Max.	Amps Nom./Max.	RPM	Acoustic Noise dBA	Airflow (Min.) CFM	Airflow (Min.) L/Sec.	Weight ozs.	Weight grams
D24-B10A-04W3-100	12	6.0 / 13.8	1.44 / 1.92	0.12 / 0 .16	3600	28	17	8.0	2.3	65
D24-B10A-04W4-100	12	6.0 / 13.8	2.04 / 2.64	0.17 / 0 .22	4550	34	22	10.3	2.3	65
D24-B10A-04W5-100	12	6.0 / 13.8	2.40 / 3.12	0.20 / 0.26	5050	39	23	10.9	2.3	65
D24-B10A-05W3-100	24	10.0 / 27.6	1.70 / 2.16	0.07 / 0 .09	3600	28	17	8.0	2.3	65
D24-B10A-05W4-100	24	10.0 / 27.6	2.20 / 2.88	0.09 / 0 .12	4550	34	22	10.3	2.3	65
D24-B10A-05W5-100	24	10.0 / 27.6	2.40 / 3.12	0.20 / 0 .26	5050	39	23	10.9	2.3	65

DIMENSIONS: 2.36" (60 mm) square x 1.00" (25 mm) thick

D31T10

Globe Motors Part Number	Nominal Voltage VDC	Voltage Operating Range VDC	Line Watts Nom./Max.	Amps Nom./Max.	RPM	Acoustic Noise dBA	Airflow (Min.) CFM	Airflow (Min.) L/Sec.	Weight ozs.	Weight grams
D31-B10A-04W2-100	12	6.0 / 13.8	1.32 / 1.68	.11 / .14	2400	25	28	13.3	3.3	95
D31-B10A-04W3-100	12	6.0 / 13.8	2.04 / 2.64	.17 / .22	2700	28	32	15.0	3.3	95
D31-B10A-04W5-100	12	6.0 / 13.8	2.76 / 3.60	.23 / .30	3250	34	39	18.3	3.3	95
D31-B10A-05W2-100	24	10.0 / 27.6	1.68 / 2.16	.07 / .09	2400	25	28	13.3	3.3	95
D31-B10A-05W3-100	24	10.0 / 27.6	1.92 / 2.40	.08 / .10	2700	28	32	15.0	3.3	95
D31-B10A-05W5-100	24	10.0 / 27.6	2.88 / 3.60	.12 / .15	3250	34	39	18.3	3.3	95

DIMENSIONS: 3.15" (80 mm) square x 1.00" (25 mm) thick

D36T10

Globe Motors Part Number	Nominal Voltage VDC	Voltage Operating Range VDC	Line Watts Nom./Max.	Amps Nom./Max.	RPM	Acoustic Noise dBA	Airflow (Min.) CFM	Airflow (Min.) L/Sec.	Weight ozs.	Weight grams
D36-B10A-04W2-100	12	6.0 / 13.8	1.32 / 1.44	.110 / .120	2100	29	34	15.8	3.5	100
D36-B10A-04W3-100	12	6.0 / 13.8	2.64 / 3.36	.220 / .280	2850	37	48	22.5	3.5	100
D36-B10A-04W5-100	12	6.0 / 13.8	3.78 / 5.16	.315 / .430	3200	41	55	25.8	3.5	100
D36-B10A-05W2-100	24	10.0 / 27.6	1.37 / 1.68	.057 / .070	2100	29	34	15.8	3.5	100
D36-B10A-05W3-100	24	10.0 / 27.6	2.88 / 3.84	.120 / .160	2850	37	48	22.5	3.5	100
D36-B10A-05W5-100	24	10.0 / 25.0	3.84 / 4.80	.160 / .200	3200	41	55	25.8	3.5	100

DIMENSIONS: 3.62" (92 mm) square x 1.00" (25 mm) thick

D47T10

Globe Motors Part Number	Nominal Voltage VDC	Voltage Operating Range VDC	Line Watts Nom./Max.	Amps Nom./Max.	RPM	Acoustic Noise dBA	Airflow (Min.)		Weight	
							CFM	L/Sec.	ozs.	grams
D47-B10A-04W2-000	12	6.0 / 13.8	2.88 / 3.84	0.24 / 0.32	2050	35	80	37.8	7.7	220
D47-B10A-04T2-000	12	6.0 / 13.8	2.88 / 3.84	0.24 / 0.32	2050	35	80	37.8	7.7	220
D47-B10A-04W3-000	12	6.0 / 13.8	6.84 / 8.88	0.57 / 0.74	2550	41	92	43.4	7.7	220
D47-B10A-04T3-000	12	6.0 / 13.8	6.84 / 8.88	0.57 / 0.74	2550	41	92	43.4	7.7	220
D47-B10A-05W2-000	24	10.0 / 27.6	2.88 / 3.84	0.12 / 0.16	2050	35	80	37.8	7.7	220
D47-B10A-05T2-000	24	10.0 / 27.6	2.88 / 3.84	0.12 / 0.16	2050	35	80	37.8	7.7	220
D47-B10A-05W3-000	24	10.0 / 27.6	5.76 / 7.44	0.24 / 0.31	2550	41	92	43.4	7.7	220
D47-B10A-05T3-000	24	10.0 / 27.6	5.76 / 7.44	0.24 / 0.31	2550	41	92	43.4	7.7	220

DIMENSIONS: 4.69" (119 mm) square x 1.00" (25 mm) thick

D47T15

Globe Motors Part Number	Nominal Voltage VDC	Voltage Operating Range VDC	Line Watts Nom./Max.	Amps Nom./Max.	RPM	Acoustic Noise dBA	Airflow (Min.)		Weight	
							CFM	L/Sec.	ozs.	grams
D47-B15A-04T2-100	12	6.0 / 13.8	4.80 / 6.24	0.40 / 0.52	2650	41	97	45.8	9.2	260
D47-B15A-04W2-100	12	6.0 / 13.8	4.80 / 6.24	0.40 / 0.52	2650	41	97	45.8	9.2	260
D47-B15A-04T3-100	12	6.0 / 13.8	6.60 / 8.64	0.55 / 0.72	2950	43	108	51.0	9.2	260
D47-B15A-04W3-100	12	6.0 / 13.8	6.60 / 8.64	0.55 / 0.72	2950	43	108	51.0	9.2	260
D47-B15A-04T4-100	12	6.0 / 13.8	8.40 / 10.80	0.70 / 0.90	3200	46	118	55.7	9.2	260
D47-B15A-04W4-100	12	6.0 / 13.8	8.40 / 10.80	0.70 / 0.90	3200	46	118	55.7	9.2	260
D47-B15A-05T2-100	24	10.0 / 27.6	5.04 / 6.72	0.21 / 0.28	2650	41	97	45.8	9.2	260
D47-B15A-05W2-100	24	10.0 / 27.6	5.04 / 6.72	0.21 / 0.28	2650	41	97	45.8	9.2	260
D47-B15A-05T3-100	24	10.0 / 27.6	7.44 / 9.60	0.31 / 0.40	2950	43	108	51.0	9.2	260
D47-B15A-05W3-100	24	10.0 / 27.6	7.44 / 9.60	0.31 / 0.40	2950	43	108	51.0	9.2	260
D47-B15A-05T4-100	24	10.0 / 27.6	8.40 / 11.04	0.35 / 0.46	3200	46	118	55.7	9.2	260
D47-B15A-05W4-100	24	10.0 / 27.6	8.40 / 11.04	0.35 / 0.46	3200	46	118	55.7	9.2	260
D47-B15A-07T3-100	48	25.0 / 55.2	7.68 / 10.08	0.16 / 0.21	2950	43	108	51.0	9.2	260
D47-B15A-07W3-100	48	25.0 / 55.2	7.68 / 10.08	0.16 / 0.21	2950	43	108	51.0	9.2	260

DIMENSIONS: 4.69" (119 mm) square x 1.50" (38 mm) thick

D59T20

Globe Motors Part Number	Nominal Voltage VDC	Voltage Operating Range VDC	Line Watts Nom./Max.	Amps Nom./Max.	RPM	Acoustic Noise dBA	Airflow (Min.)		Weight	
							CFM	L/Sec.	ozs.	grams
D59-B20A-04W4-000	12	6.0 / 14.0	20.4 / 22.8	1.70 / 2.20	3350	60	240	113	20.5	580
D59-B20A-05W4-000	24	12.0 / 28.0	17.5 / 22.8	0.73 / 0.95	3350	60	240	113	20.5	580
D59-B20A-07W4-000	48	28.0 / 56.0	16.3 / 21.6	0.34 / 0.45	3350	60	240	113	20.5	580

DIMENSIONS: 5.91" (150 mm) x 6.8" (173 mm) x 2" (51 mm) thick

D68T20

Globe Motors Part Number	Nominal Voltage VDC	Voltage Operating Range VDC	Line Watts Nom./Max.	Amps Nom./Max.	RPM	Acoustic Noise dBA	Airflow (Min.)		Weight	
							CFM	L/Sec.	ozs.	grams
D68-B20A-04W4-000	12	6.0 / 14.0	20.4 / 22.8	1.70 / 2.20	3350	60	240	113	20.5	580
D68-B20A-05W4-000	24	12.0 / 28.0	17.5 / 22.8	0.73 / 0.95	3350	60	240	113	20.5	580
D68-B20A-07W4-000	48	28.0 / 56.0	16.3 / 21.6	0.34 / 0.45	3350	60	240	113	20.5	580

DIMENSIONS: 6.8" (173 mm) DIA. x 2" (51 mm) thick

As an assistance in selecting the proper cooling device for your electronic system, it might be useful to understand the performance differences among the various types of axial flow devices. Figure 1 compares the performance curves of the four types, all of the same diameter and operating at the same speed.

Device Characteristics

Axial Flow Devices — propeller fans, tubeaxial fans, vaneaxial fans, and multi-stage axial blowers have essentially the same performance characteristics. All are distinguished by the fact that pressure is proportional to lift produced by the rotating airfoils of the impeller. As for any airfoil, there is a point (B on Figure 2) beyond which the impeller stalls, that is, the pressure (lift) decreases with decreasing flow. This explains the dip in the performance curves of each of these types. It is virtually impossible to operate satisfactorily in this region, B to C. Flow pulsations, increased audible noise, and reduced efficiency occur. Stable performance and maximum efficiency are in the A to B range. The optimal operating range is between A1 and B. This is where the fan operates best and longest life is to be expected.

Typical Axial Fan Performance

Propeller Fan — consists of a propeller rotating within a mounting ring or orifice and includes provision for motor supports. These are sometimes supplied without the mounting ring, in which case the customer mounting panel serves as the fan orifice. Propeller fans are the simplest, most economical, and least efficient axial flow devices.

Tubeaxial Fan — consists of an impeller rotating within a full cylindrical housing, which also provides motor support struts. The term tubeaxial, as presently used by manufacturers, implies more efficient airfoil blades, closer tip clearance, and generally cleaner flow patterns than the propeller fan. This results in greater pressure capability and higher efficiency.

Vaneaxial Blower — is the sophisticated brother of the tubeaxial, just as the tubeaxial represents an improvement over the propeller fan. Guide vanes are inclined on either the inlet or outlet side of the propeller. The vanes reduce the rotational or "whirl" pattern of the air stream which results in:

1. Higher pressure before stall

2. Increased efficiency

Multi-Stage Axial Blower — is essentially two or more vaneaxial fans mounted on a common shaft and housing in series. The first vaneaxial fan, or stage, feeds the second stage with axial flow at the design point. Static pressure available is roughly the product of the number of stages and stall pressure of a single stage. Multi-stage units are capable of the highest pressures attainable by an axial device for a given size and speed. They are necessarily somewhat heavier and more expensive than the other axial units.

For most industrial applications, a tubeaxial fan provides the best mix of cooling performance, low noise level, and long, reliable operation. The fans in this catalog are tubeaxial. On the following pages, we provide a simplified approach to selecting the proper Globe tubeaxial cooling fan for your system. Globe Motors will provide technical assistance in solving your cooling fan requirements that exceed the capabilities of these tubeaxial fans.

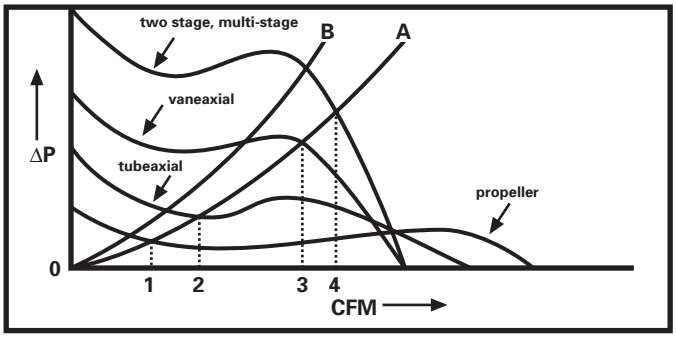


Figure 1.

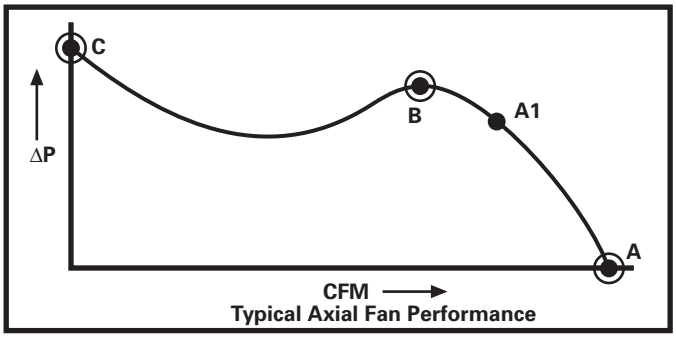
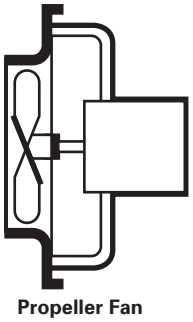
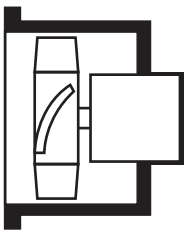


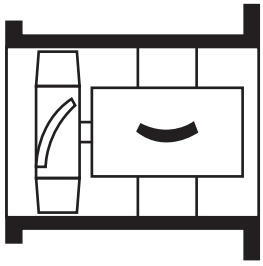
Figure 2.



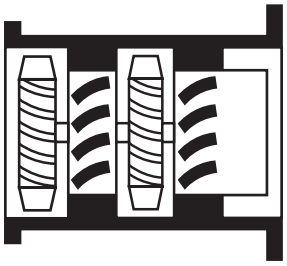
Propeller Fan



Tubeaxial Fan



Vaneaxial Blower



Multi-Stage Axial Blower

Considerations for the Cooling Fan Location

A key criterion for fan selection is the location of the fan in your system. This has a very important impact on airflow effectiveness and cooling efficiency.

Globe provides you flexibility with our use of precision ball bearings. They allow you to mount our fans in either the horizontal of vertical position (or somewhere in between) without negatively impacting bearing wear and, therefore, life and noise.

Without trying to design your system layout, here are some general guidelines which we hope you find helpful:

1. Keep the airflow path as unobstructed as possible. The air should flow across components and circuit boards and not into them. The air entry and exit points should especially be kept free of interference to airflow.
2. There are two ways to treat your greatest sources of heat dissipation. In a tight cabinet, placing this heat source near the air exit will have the least heating effect on the air cooling your lower power areas. If you have a large cabinet, like an office copier, whose interior is relatively uncluttered but has a significant hot spot, placing the hot component by the air inlet will ensure the best cooling. As the air mixes in the large open cabinet, it will cool somewhat before exiting past the other components.
3. To utilize vertical airflow through your cabinet, place the cooling fan to assist the natural convection airflow that moves upward.
4. If you intend to use a filter or an RFI screen, you must consider the additional resistance to airflow that these items create.

By carefully considering your cooling fan location, you can possibly avoid requiring a larger fan which would increase your noise level and power dissipation.

Table 1
Typical Airflow Requirements by End Use Equipment

	CFM					
	0 to 25	**26 to 50**	**51 to 75**	**76 to 100**	**101 to 125**	**126 and Up**
Office Copiers	X	X	X	X	X	X
Power Supplies	X	X	X	X		
Micro Computers	X	X	X	X		
Receivers	X	X				
Terminals	X	X				
Audio Amps	X					
Pos Terminals			X	X	X	
Office Equipment			X	X	X	
Recording Equipment			X	X	X	
P.A. Systems			X	X		
TV Cameras & Monitors			X	X		
Instrumentation			X	X	X	
Medical Equipment			X	X	X	
Mini Computers					X	X
Telecom Equipment					X	X
Lab Equipment			X	X	X	
Computer Peripherals	X	X	X	X	X	
Mainframe Computers				X	X	X
Disc Drives						X
Industrial Controls						X
Computer Consoles						X
Relay Racks						X
Instrument Cabinets						X
Transmitter Cabinets						X

How to Select a Globe Cooling Fan

To aid you in determining your cooling fan requirements, we would like to provide a simplified approach to fan selection. Table 1 provides a general starting point for typical airflow requirements of industrial equipment. The following discussion will enable the user to apply a clear understanding of airflow in selecting a suitable unit.

The Essentials

To properly select a particular fan for a specific application, the detailed requirements must be known. These include the normal motor specifications and those peculiar to air-moving devices, your system's power dissipation, your system's resistance to airflow, and the allowable temperature of your system's internal air.

Cooling Air Required

The values established by the method described below tend to be conservative. For example, the method treats laminar airflow only. When turbulent flow conditions exist, the cooling is improved further.

$$CFM = \frac{\text{watts dissipated x a constant}}{\text{allowable temperature minus inlet temperature °F}}$$

Standard Air Conditions — Air density, for many applications, is taken at standard conditions (70°F at 29.92" of mercury). The constant 3.16 is a function of the specific heat of air at these standard conditions. The formula for standard air conditions is:

Equation 1.

$$CFM = \frac{\text{watts}}{\text{Temp. Rise °F}} \times 3.16$$

Variable Density — When standard air conditions cannot be assumed, you may use the constant 0.1784 as a function of the specific heat of air near sea level. Change in the specific heat due to pressure and temperature changes has not been considered, and in most cases it is negligible. However, you might want to consider high altitude usage, such as in Denver. To calculate CFM for these non-standard air conditions, use the formula:

Equation 2.

$$CFM = \frac{\text{watts x T°R}}{\text{Temp. Rise °F x Pb}} \times 0.1784$$

watts = watts dissipated
T°R = Temperature in °Rankine
temperature = 459.6 + °F
Pb = barometric pressure in inches of mercury

Example: You need to keep the internal air temperature of your system at 80°F in a normal room temperature operating environment of 70°F. Since the system has 175 watts of power dissipation, application of Equation 1 computes an airflow requirement of 55 CFM.
Using Equation 1,

$$CFM = \frac{175 \times 3.16}{80°F - 70°F} = 55.3$$

Using Equation 2,

$$CFM = \frac{175 \times (459.6 + 70)}{(80 - 70) \times 29.9} \times 0.1784 = 55.3$$

Static Pressure

The key to determining your airflow requirements is knowing your system airflow resistance.

The static pressure or pressure drop the fan must work against can sometimes be estimated from experience with similar situations. To design for an assumed static pressure, however, is risky unless requirements are not critical.

It is preferable to construct a test setup and measure actual static pressure at a known flow rate. The pressure drop (P) is a function of the velocity squared (V^2) and the density of the fluid ( ). Knowing one point of flow and pressure makes possible the plotting
of the system resistance curve by using the formula:

Equation 3. $$\frac{\Delta P2}{\Delta P1} = \frac{\varrho_2 [V_2]^2}{\varrho_1 [V_1]^2}$$

$$\frac{\Delta P2}{\Delta P1} = \frac{[CFM_2]^2}{[CFM_1]^2}$$

where subscript 1 represents measured values. A simple test can be conducted using a manometer and a cooling fan for which you have a performance curve showing static pressure versus airflow (See Figure 3).

Example: It has been determined, using Equation 1, that 55 CFM of air is required to maintain safe operating temperatures in your system. If you don't know your system airflow resistance, it is suggested that you use one of our fans in a "back pressure" test setup as shown in Figure 3. It requires a manometer and simply moving the static pressure tap around to identify the system's maximum back pressure. The test unit should be running at measured voltage.
In our example, we are guessing your system needs a 4.70" fan because of your small allowable temperature rise.
To provide overkill as a safety precaution, we will use our most powerful model, A47-B15A-15T3. The "back pressure" test indicates the maximum static pressure is 0.133" of water. Referring to Figure 4 and the fan performance curve marked A47-B15A-15T3, the airflow corresponding to 0.133" of water is 75 CFM.

Given this data point, you can build your system "airflow resistance" curve by applying Equation 3A. Figure 4 shows this curve plotted and sweeping up from left to right. Your cooling requirements point is indicated by the "★". This curve will serve as your major check point as you select the proper Globe fan for your system.

Static pressure required at the required flow rate of 55 CFM is from Equation 3A:

Equation 3A.

$$\Delta P^2 = \frac{(55)^2}{(75)^2} \times .133 = 0.072" \ H_2O$$

To further assist you in airflow analysis and Globe cooling fan selection, we want to make you aware of the following relationships:

For a Given Fan — Change of Speed

$$\frac{CFM_1}{CFM_2} = \frac{RPM_1}{RPM_2}$$

$$\frac{P_1}{P_2} = \left[\frac{RPM_1}{RPM_2}\right]^2$$

$$\frac{BHP_1}{BHP_2} = \left[\frac{RPM_1}{RPM_2}\right]^3$$

Change of Air Density ϱ ____ at Constant Speed

$$\frac{CFM_1}{CFM_2} = 1$$

$$\frac{\Delta P1}{\Delta P2} = \frac{\varrho_1}{\varrho_2}$$

$$\frac{BHP_1}{BHP_2} = \frac{P_1}{P_2}$$

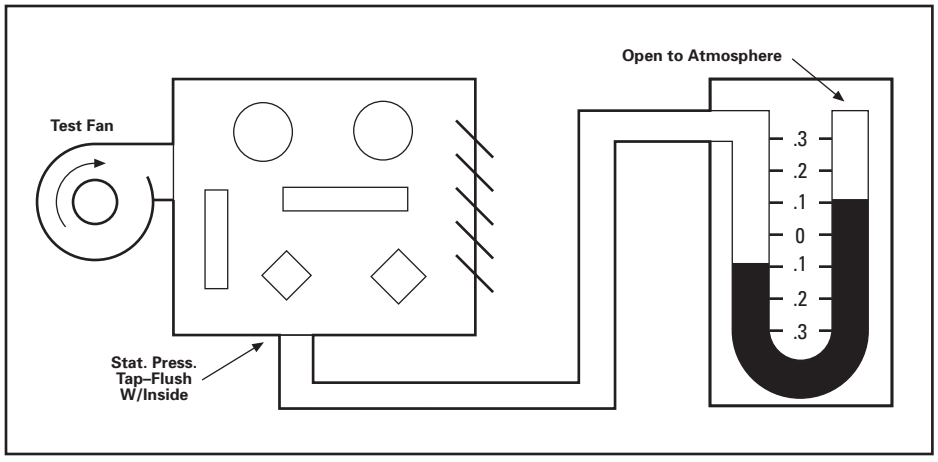


Figure 3.

 Specifications subject to change without notice.

Noise Considerations

Acoustic noise level is almost always a consideration in fan selection. Globe believes that the special attention that has been given to the acoustical aspects of our fan designs will provide you with superior performance and long life without paying an acoustical penalty.

Our noise measurements are conducted in an anechoic chamber in accordance with DIN 45635. The fan is running in free air with the microphone located at 90° to the air intake at a distance of 39" (1 meter). All noise measurements are given on the A-weighted sound level scale.

It is important that the least possible turbulence be created in the airflow. The more turbulence the more noise, especially anything obstructing the air intake. This includes finger guards, filters, and panel cutouts. In almost all cases, finger guards and filters will not increase noise by any discernible amount. For panel cutouts, we recommend those shown at the back of this catalog.

Mounting of the fan can be the greatest source of incremental noise. A fan hard-mounted to a resilient surface could introduce a sympathetic vibration. The surface will become a vibrating membrane acting as a speaker membrane to amplify noise. The fact that we dynamically balance our rotors and impellers helps alleviate this situation. However, strong consideration should still be given to fan mounting.

The following table provides an indication of the effect of dB changes:

dB Change	Apparent Change in Loudness
3 dB	Barely Noticeable
5 dB	Noticeable
10 dB	Twice as loud

Common Sound Levels in Your Home

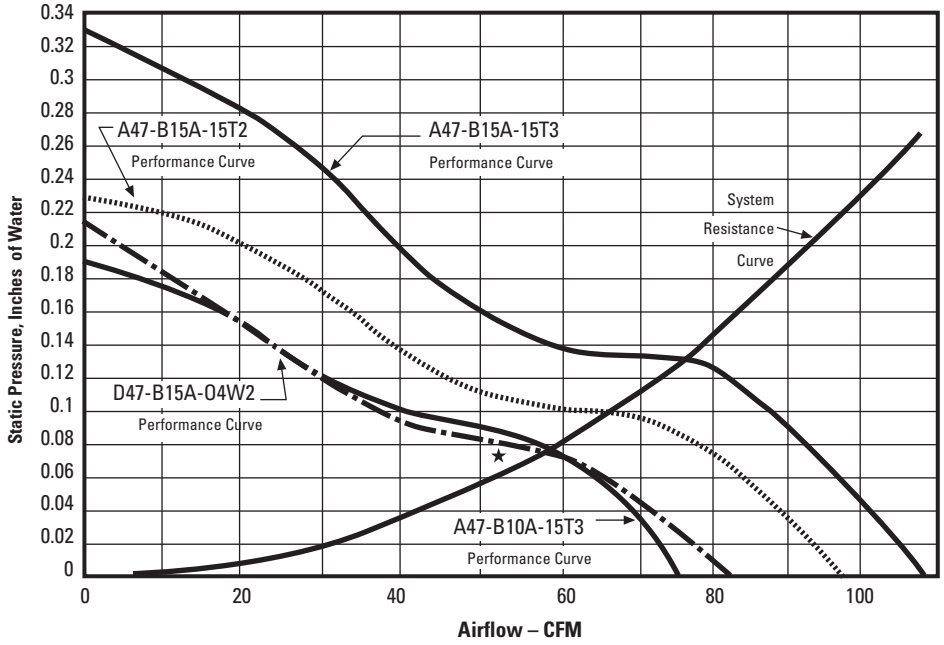
Here are sound levels in decibels taken at the distance you usually hear them:

Lowest audible sound	0 dB
Breathing	10 dB
Whisper	30 dB
Refrigerator	45 dB
Normal conversation	60 dB
Dishwasher	70 dB
Garbage disposal	80 dB
Knife sharpener	80 dB
Cocktail party	80 dB
Vacuum cleaner	87 dB
Food blender	90 dB
Noisy exhaust fan	90 dB
Power lawn mower	95 dB
Noisy kitchen	100 dB
Amplified rock band	120 dB
Jet airport	130 dB
Shotgun blast	140 dB

Noise Ranges

0 to 20 dB — Very faint
20 to 40 dB — Faint
40 to 60 dB — Moderate
60 to 80 dB — Loud
80 to 100 dB — Very loud
100 to 140 dB — Deafening

Figure 4.



Low Noise Impeller Designs

Terminal or Lead Wire Options

Sealed/Life Lubricated Ball Bearings

Solid State Brushless DC Motor with Auto-Restart (Polarity Protected)

Nonflammable Material UL94V-0

Features:

- Rugged Die-Cast Aluminum Housing — AC Fans
- Durable Light-Weight Plastic Housing — DC Fans
- Life Lubricated Ball Bearings
- High Temperature Extremes
- Maximum Heat Dissipation
- Lower Operating Voltage
- Maximum Shock and Vibration Resistance
- Speed Sensing Options Available on DC Fans
- Longer Life and Lower Cost
- Available Through Stocking Distributors

Safety:

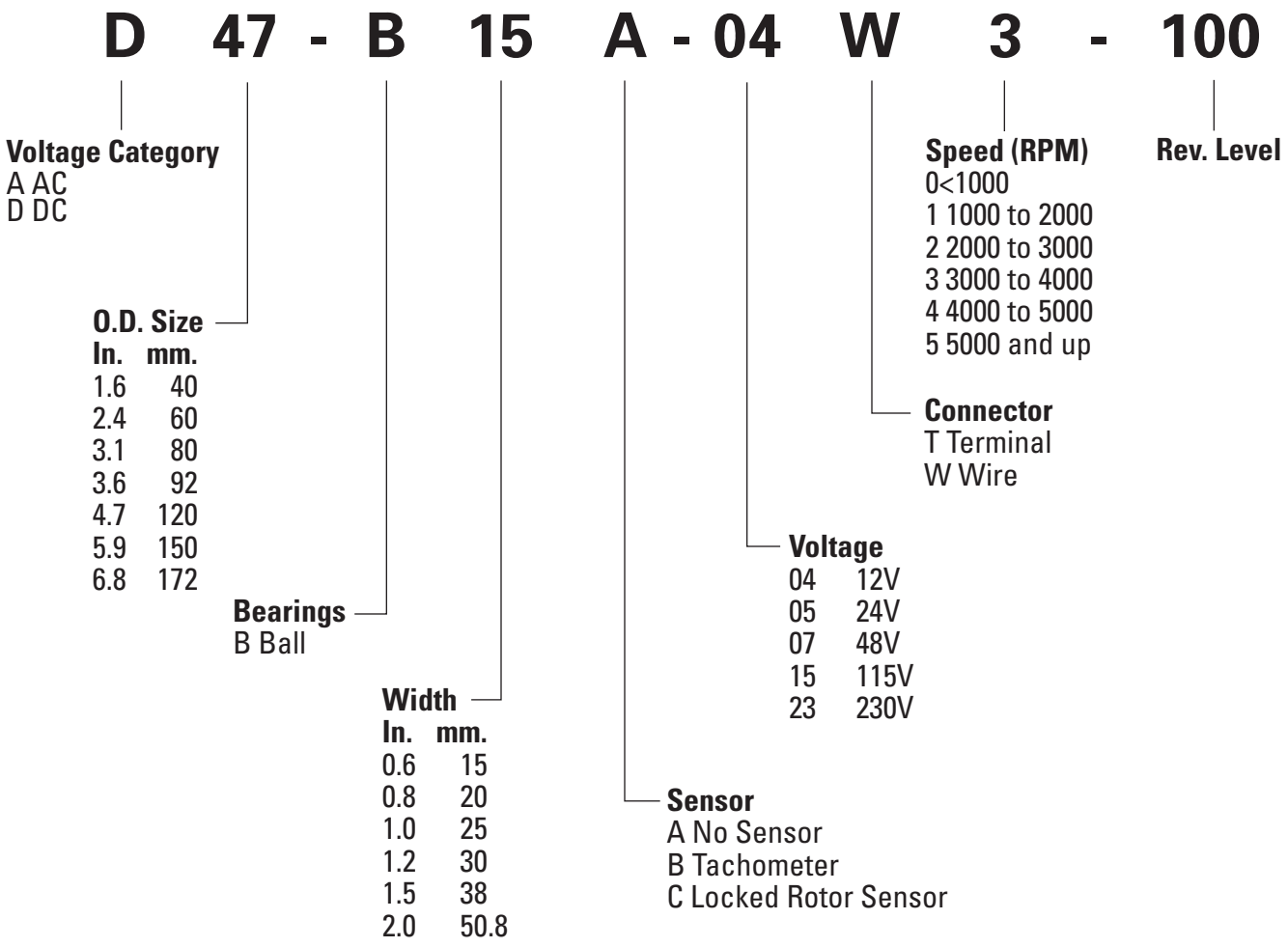
All fans are designed and manufactured to meet UL, CSA, and VDE standards. As of the catalog printing date, active file numbers are:

UL	E105397
CSA	72877
VDE	15073-2611
CE	

Please consult with the factory for latest agency approvals and updates.

Globe Motors Cooling Fan Part Numbering System

SAMPLE PART NUMBER: D47-B15A-04W3-100



Note: Our part numbering system is designed to offer additional product information as a convenience to our customers. Part numbers are listed on all product bulletin sheets.

Globe Motors offers a wide range of tubeaxial brushless DC and AC fans to meet your electronic requirements. Our models range from 6 CFM to 230 CFM and model sizes range from 1.6" (40 mm) square to 6.8" (172 mm) diameter.

The solid-state brushless DC motor design provides low input power, lower operating voltages, polarity protection, and features auto-restart.

The entire line utilizes precision ball bearings, which are capable of withstanding maximum shock and vibration. We combine this with highly-sophisticated dynamic balancing techniques on the rotor and impeller to ensure long life and lower acoustical degradation over time. All units have a minimum life expectancy of 75,000 hours at 77°F (25°C).

We offer a complete line of finger guards and filters to match our fans and your applications. Globe Motors also maintains a staff of field application engineers to assist you in fan selection and to provide fast resolution to technical issues.

Globe Motors™ AC Series Tubeaxial Cooling Fans Model No. A24T12

2.36" Sq. x 1.18"
(60 mm Sq. x 30 mm)
7-9 CFM
(3.3-4.2 L/Sec.)

Features

- Reliable shaded-pole motor construction
- Precision ball bearing system provides:
  - Longer life
  - Higher temperature extremes
  - Lower noise over time
  - Maximum shock and vibration resistance
- Rugged die-cast aluminum housing for maximum heat dissipation

Accessories:
Finger guards

General Specifications

Frame: Die-cast aluminum painted black for moisture and corrosion resistance

Impeller: Reinforced polybutylene plastic (UL94V-0 rating)

Bearings: Precision, life-lubricated ball bearings

Insulation: Class A integral ground system rated @ 248°F (120°C)

Weight: 5.0 ozs. (140 grams)

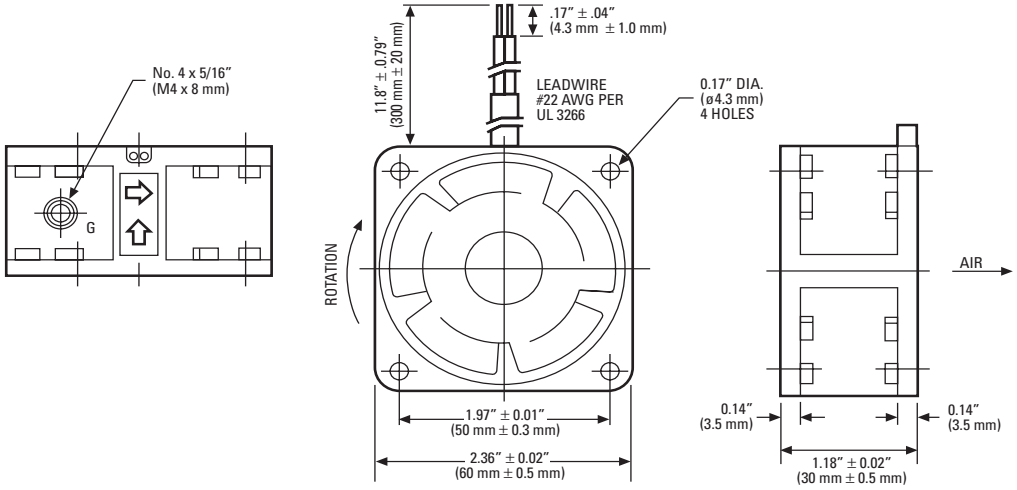
Operating Temperature Range: 14° to 158°F (-10° to 70°C)

Insulation Resistance: 100 megohms minimum @ 500 VDC

Dielectric Strength: 1500 VAC for 3 seconds

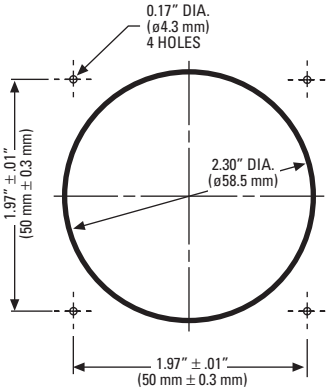
Safety Protection: Impedance protected

Life Expectancy: 50,000 hours minimum @ 77°F (25°C)

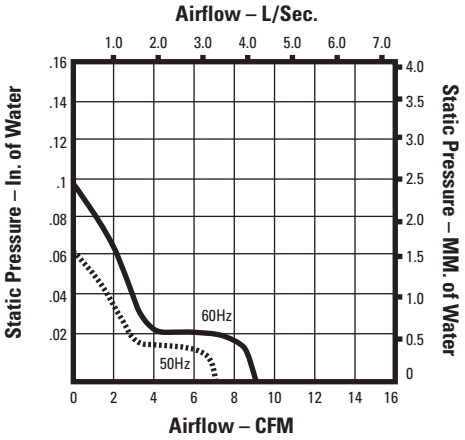


							Airflow (Min.)	
Globe Motors Part Number	Nominal Voltage VAC	Frequency Hz	Watts	Line Amps	RPM	Acoustic Noise dBA	CFM	Liters per Second
A24-B12A-15W3-000	115	50 / 60	4.0 / 4.5	0.070 / 0.060	2000 / 2600	28 / 29	7 / 9	3.3 / 4.2

Installation Guide



Performance at Sea Level



A24-B12A-15W3-000

Approvals

UL File No.
E105397

CSA File No.
72877

All operating specifications measured at nominal operating voltage, free air at sea level

NOTES:

Globe Motors™ AC Series Tubeaxial Cooling Fans Model No. A31T10

3.15" Sq. x 1.00" (80 mm Sq. x 25 mm) 16-20 CFM (7.6-9.4 L/Sec.)

Features

- Reliable shaded-pole motor construction
- Precision ball bearing system provides:
  - Longer life
  - Higher temperature extremes
  - Lower noise over time
  - Maximum shock and vibration resistance
- Rugged die-cast aluminum housing for maximum heat dissipation

Accessories:
Finger guards
Filters
Screen guard

General Specifications

Frame: Die-cast aluminum painted black for moisture and corrosion resistance

Impeller: Reinforced polybutylene plastic (UL94V-0 rating)

Bearings: Precision, life-lubricated ball bearings

Insulation: Class A integral ground system rated @ 248°F (120°C)

Weight: 7.7 ozs. (220 grams)

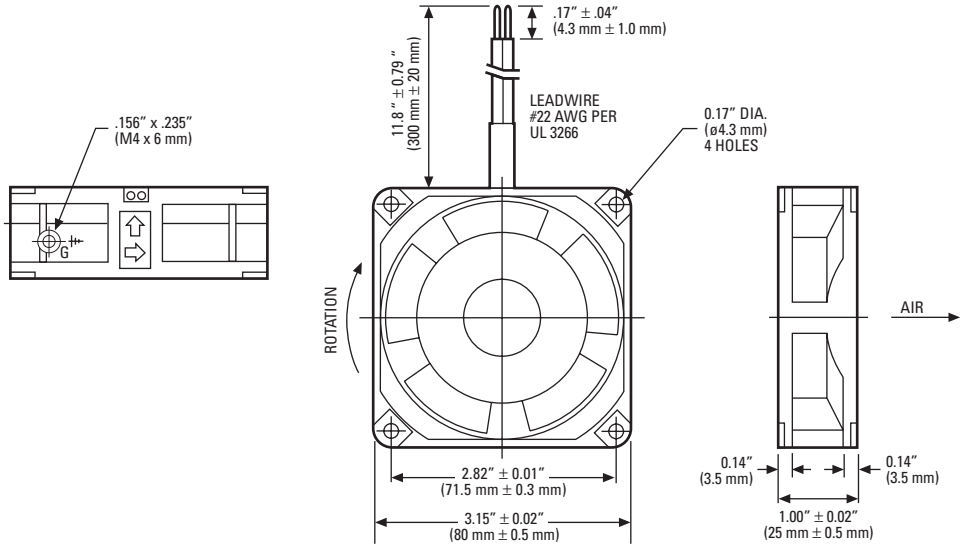
Operating Temperature Range: 14° to 158°F (-10° to 70°C)

Insulation Resistance: 100 megohms minimum @ 500 VDC

Dielectric Strength: 1500 VAC for 3 seconds

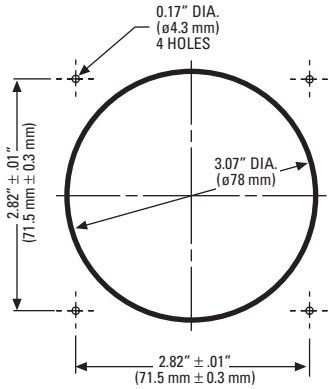
Safety Protection: Impedance protected

Life Expectancy: 50,000 hours minimum @ 77°F (25°C)

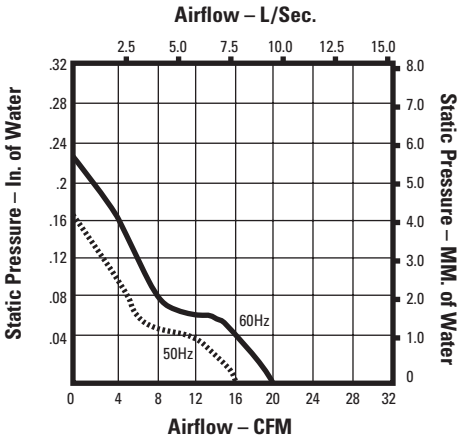


Globe Motors Part Number	Nominal Voltage VAC	Frequency Hz	Watts	Line Amps	RPM	Acoustic Noise dBA	Airflow (Min.) CFM	Airflow (Min.) Liters per Second
A31-B10A-15W3-000	115	50 / 60	6.0 / 5.0	0.085 / 0.075	2600 / 3100	28 / 33	16 / 20	7.6 / 9.4

Installation Guide



Performance at Sea Level



A31-B10A-15W3-000

Approvals

UL File No.
E105397

CSA File No.
72877

All operating specifications measured at nominal operating voltage, free air at sea level

NOTES:

Globe Motors™ AC Series Tubeaxial Cooling Fans Model No. A31T15

3.15" Sq. x 1.50" (80 mm Sq. x 38 mm) 18-32 CFM (8.4-15.1 L/Sec.)

Features

- Reliable shaded-pole motor construction
- Precision ball bearing system provides:
  - Longer life
  - Higher temperature extremes
  - Lower noise over time
  - Maximum shock and vibration resistance
- Rugged die-cast aluminum housing for maximum heat dissipation

Accessories:
Finger guards
Power cords
Filters
Screen guards

General Specifications

Frame: Die-cast aluminum painted black for moisture and corrosion resistance

Impeller: Reinforced polybutylene plastic (UL94V-0 rating)

Bearings: Precision, life-lubricated ball bearings

Insulation: Class A integral ground system rated @ 248°F (120°C)

Weight: 10.6 ozs. (300 grams)

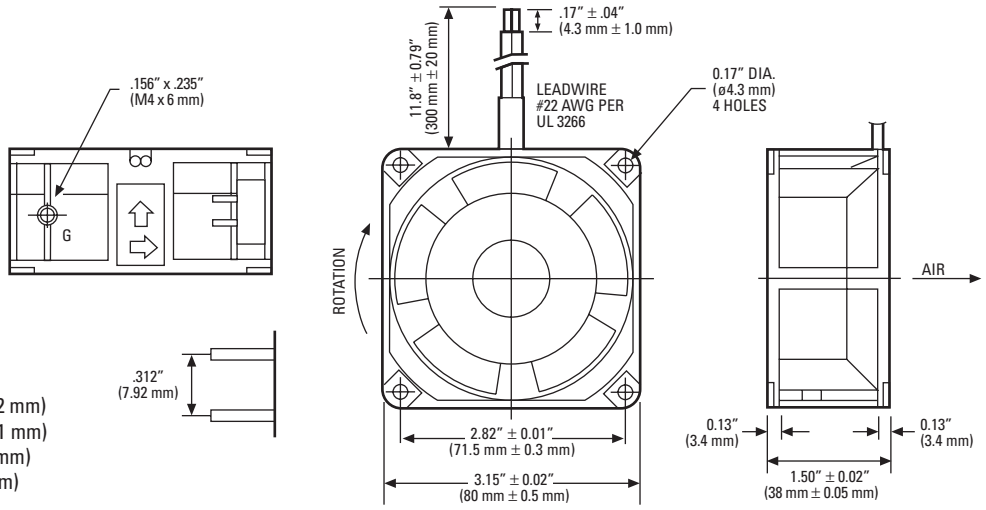
Operating Temperature Range: 14° to 158°F (-10° to 70°C)

Insulation Resistance: 100 megohms minimum @ 500 VDC

Dielectric Strength: 1500 VAC for 3 seconds

Safety Protection: Impedance protected

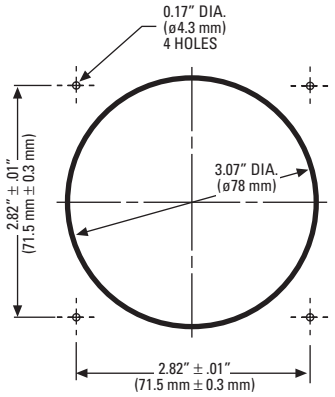
Life Expectancy: 50,000 hours minimum @ 77°F (25°C)



Terminals
2 Solder Terminals
Centers: .312" (7.92 mm)
Thickness: .02" (.51 mm)
Width: .120" (3.05 mm)
Length: .31" (7.8 mm)

							Airflow (Min.)	
Globe Motors Part Number	Nominal Voltage VAC	Frequency Hz	Watts	Line Amps	RPM	Acoustic Noise dBA	CFM	Liters per Second
A31-B15A-15T1-000	115	50 / 60	4.5 / 4.0	0.060 / 0.055	1700 / 1900	23 / 25	18 / 19	8.4 / 8.9
A31-B15A-15T2-000	115	50 / 60	5.0 / 4.5	0.080 / 0.070	2100 / 2300	29 / 32	21 / 24	9.9 / 11.3
A31-B15A-15T3-000	115	50 / 60	9.0 / 7.0	0.140 / 0.110	2700 / 3200	33 / 38	27 / 32	12.7 / 15.1
A31-B15A-15W1-000	115	50 / 60	4.5 / 4.0	0.060 / 0.055	1700 / 1900	23 / 25	18 / 19	8.4 / 8.9
A31-B15A-15W2-000	115	50 / 60	5.0 / 4.5	0.080 / 0.070	2100 / 2300	29 / 32	21 / 24	9.9 / 11.3
A31-B15A-15W3-000	115	50 / 60	9.0 / 7.0	0.140 / 0.110	2700 / 3200	33 / 38	27 / 32	12.7 / 15.1
A31-B15A-23W1-000	230	50 / 60	6.0 / 5.0	0.055 / 0.050	1800 / 2100	23 / 26	18 / 22	8.4 / 10.4
A31-B15A-23W2-000	230	50 / 60	7.0 / 6.0	0.050 / 0.045	2200 / 2500	30 / 34	22 / 26	10.4 / 12.3
A31-B15A-23W3-000	230	50 / 60	10.0 / 8.0	0.070 / 0.055	2700 / 3200	33 / 38	27 / 32	12.7 / 15.1

Installation Guide



Approvals

UL File No.
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CSA File No.
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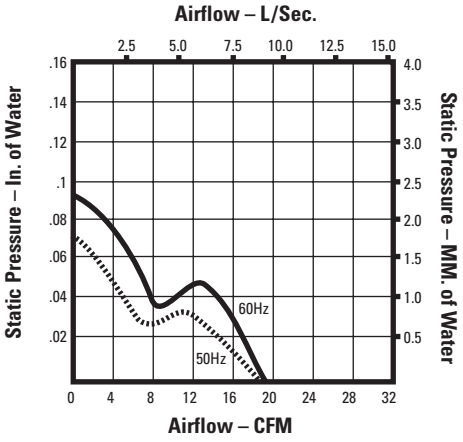
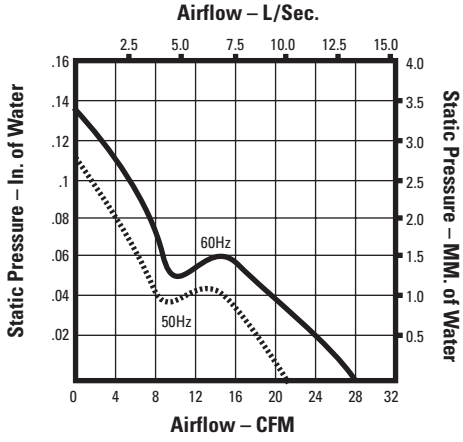
NOTES:

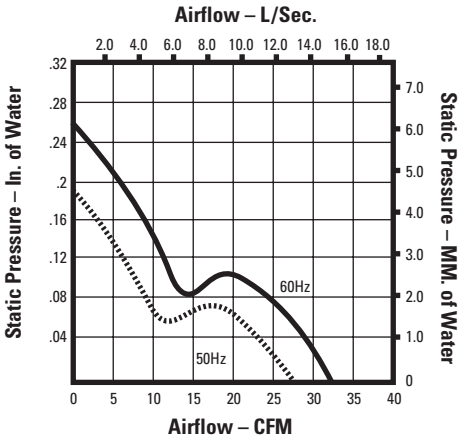
Performance at Sea Level



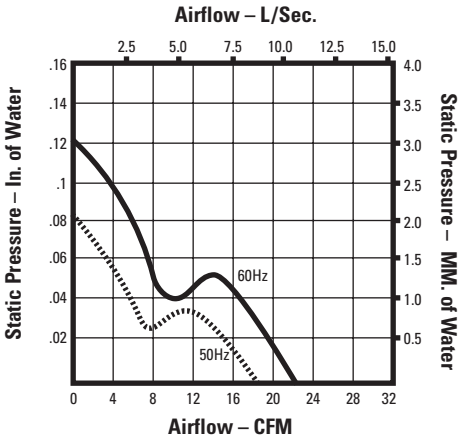
A31-B15A-15T1-000
A31-B15A-15W1-000



A31-B15A-15T2-000
A31-B15A-15W2-000



A31-B15A-15T3-000
A31-B15A-15W3-000



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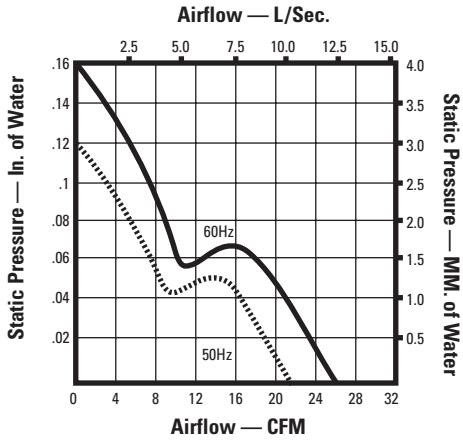

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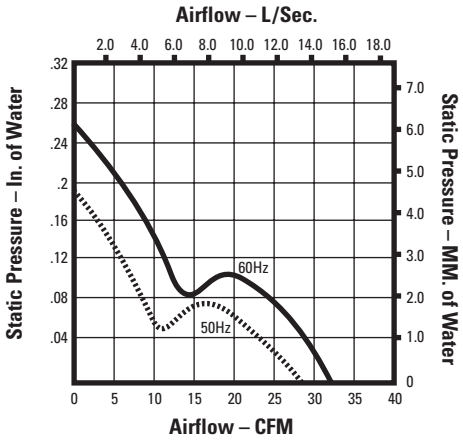


A31-B15A-23W3-000

All operating specifications measured at nominal operating voltage, free air at sea level

Globe Motors™ AC Series Tubeaxial Cooling Fans Model No. A36T10

3.62" Sq. x 1.00" (92 mm Sq. x 25 mm) 16-35 CFM (7.6-16.5 L/Sec.)

Features

- Reliable shaded-pole motor construction
- Precision ball bearing system provides:
  - Longer life
  - Higher temperature extremes
  - Lower noise over time
  - Maximum shock and vibration resistance
- Rugged die-cast aluminum housing for maximum heat dissipation

Accessories:
Finger guards
Power cords

General Specifications

Frame: Die-cast aluminum painted black for moisture and corrosion resistance

Impeller: Reinforced polybutylene plastic (UL94V-0 rating)

Bearings: Precision, life-lubricated ball bearings

Insulation: Class A integral ground system rated @ 248°F (120°C)

Weight: 10.5 ozs. (300 grams)

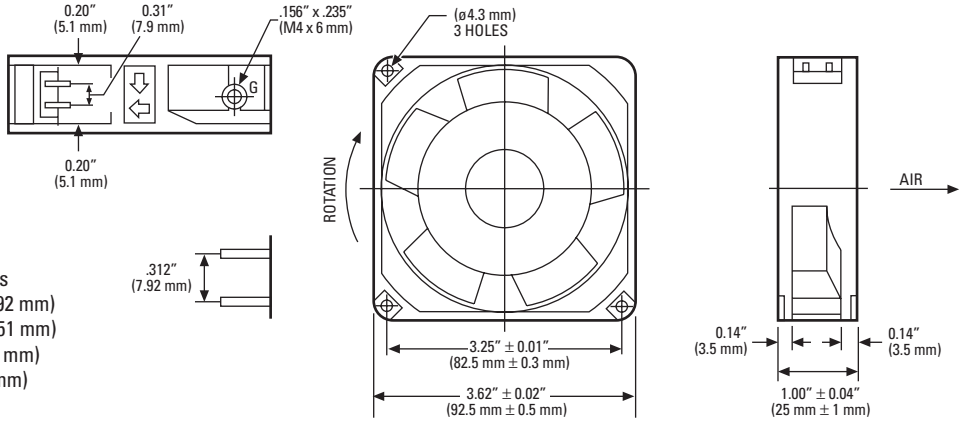
Operating Temperature Range: 14° to 158°F (-10° to 70°C)

Insulation Resistance: 100 megohms minimum @ 500 VDC

Dielectric Strength: 1500 VAC for 3 seconds

Safety Protection: Impedance protected

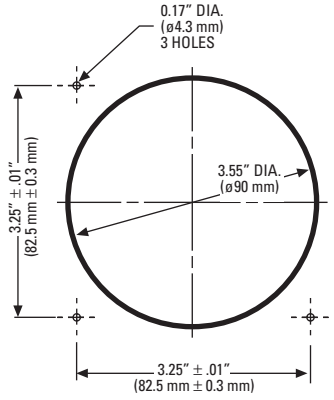
Life Expectancy: 50,000 hours minimum @ 77°F (25°C)



Terminals
2 Solder Terminals
Centers: .312" (7.92 mm)
Thickness: .02" (.51 mm)
Width: .120" (3.05 mm)
Length: .31" (7.8 mm)

Globe Motors Part Number	Nominal Voltage VAC	Frequency Hz	Watts	Line Amps	RPM	Acoustic Noise dBA	Airflow (Min.) CFM	Airflow (Min.) Liters per Second
A36-B10A-15T1-000	115	50 / 60	7.0 / 6.0	0.090 / 0.080	1450 / 1800	22 / 25	16 / 20	7.6 / 9.4
A36-B10A-15T2-000	115	50 / 60	7.0 / 6.0	0.095 / 0.090	2100 / 2500	30 / 35	21 / 28	9.9 / 13.2
A36-B10A-15T3-000	115	50 / 60	12.0 / 9.0	0.170 / 0.130	2600 / 3100	34 / 38	28 / 35	13.2 / 16.5
A36-B10A-23T1-000	230	50 / 60	7.0 / 6.0	0.050 / 0.040	1450 / 1800	22 / 26	16 / 20	7.6 / 9.4
A36-B10A-23T2-000	230	50 / 60	7.0 / 6.0	0.050 / 0.050	2100 / 2500	30 / 35	21 / 28	9.9 / 13.2
A36-B10A-23T3-000	230	50 / 60	13.0 / 10.0	0.090 / 0.070	2600 / 3100	34 / 39	28 / 35	13.2 / 16.5

Installation Guide



Approvals

UL File No.
E105397

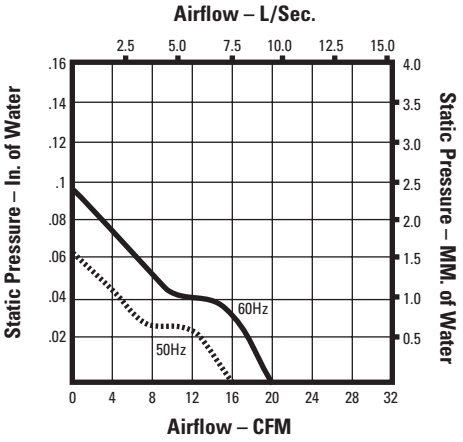
CSA File No.
72877

VDE File No.
17074-2611-0705

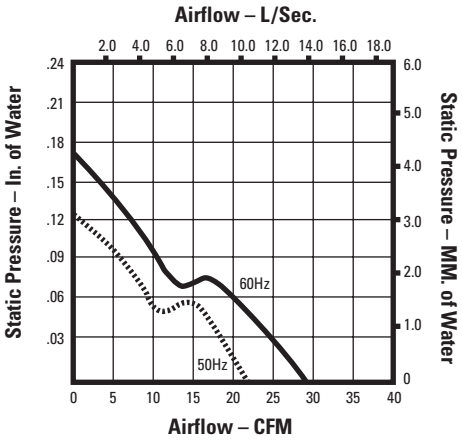
3047

NOTES:

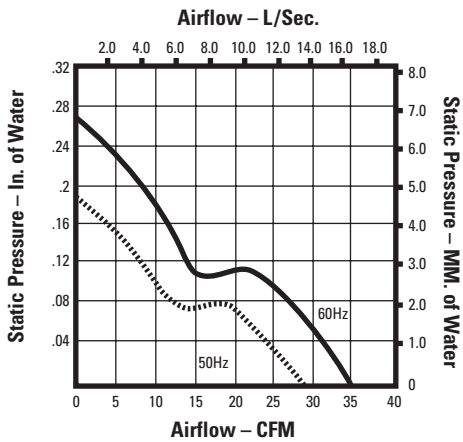
Performance at Sea Level



A36-B10A-15T1-000



A36-B10A-15T2-000



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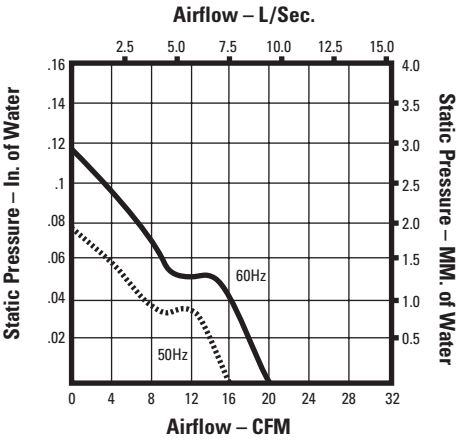

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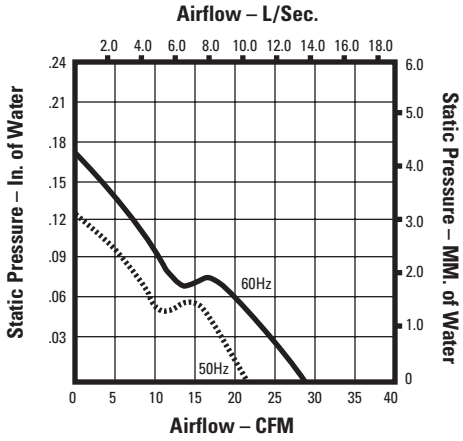

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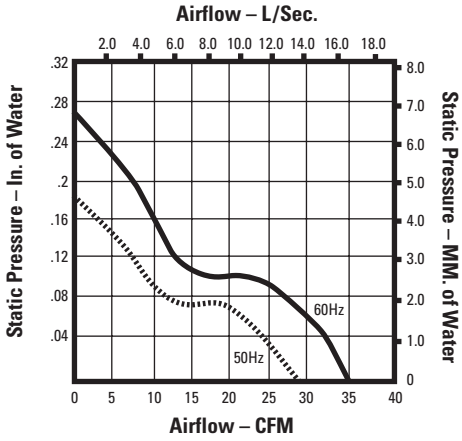


A36-B10A-23T3-000

All operating specifications measured at nominal operating voltage, free air at sea level

Globe Motors™ AC Series Tubeaxial Cooling Fans Model No. A47T10

4.69" Sq. x 1.00" (119 mm Sq. x 25 mm) 49-71 CFM (23.1-33.5 L/Sec.)

Features

- Reliable shaded-pole motor construction
- Precision ball bearing system provides:
  - Longer life
  - Higher temperature extremes
  - Lower noise over time
  - Maximum shock and vibration resistance
- Rugged die-cast aluminum housing for maximum heat dissipation

Accessories:
Finger guards
Power cords
Filters

General Specifications

Frame: Die-cast aluminum painted black for moisture and corrosion resistance

Impeller: Reinforced polybutylene plastic (UL94V-0 rating)

Bearings: Precision, life-lubricated ball bearings

Insulation: Class A integral ground system rated @ 248°F (120°C)

Weight: 13 ozs. (360 grams)

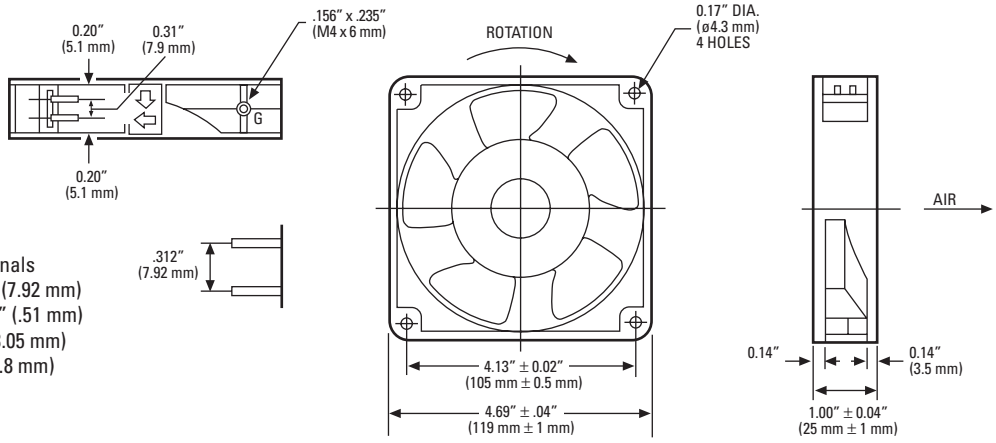
Operating Temperature Range: 14° to 158°F (-10° to 70°C)

Insulation Resistance: 100 megohms minimum @ 500 VDC

Dielectric Strength: 1500 VAC for 3 seconds

Safety Protection: Impedance protected

Life Expectancy: 50,000 hours minimum @ 77°F (25°C)

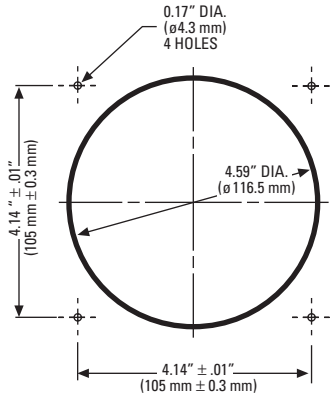


Terminals
2 Solder Terminals
Centers: .312" (7.92 mm)
Thickness: .02" (.51 mm)
Width: .120" (3.05 mm)
Length: .31" (7.8 mm)

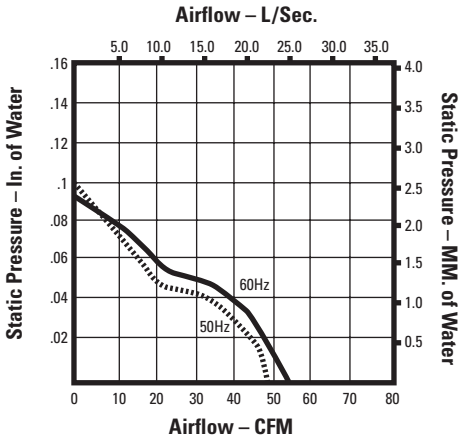
							Airflow (Min.)	
Globe Motors Part Number	Nominal Voltage VAC	Frequency Hz	Watts	Line Amps	RPM	Acoustic Noise dBA	CFM	Liters per Second
A47-B10A-15T2-000	115	50 / 60	8.0 / 7.0	0.100 / 0.090	1900 / 2000	29 / 30	49 / 53	23.1 / 25.0
A47-B10A-15T3-000	115	50 / 60	14.0 / 11.0	0.190 / 0.160	2300 / 2700	34 / 38	64 / 71	30.2 / 33.5
A47-B10A-23T2-000	230	50 / 60	9.0 / 8.0	0.060 / 0.050	1900 / 2100	29 / 30	49 / 53	23.1 / 25.0
A47-B10A-23T3-000*	230	50 / 60	14.0 / 11.0	0.100 / 0.090	2300 / 2700	34 / 38	64 / 71	30.2 / 33.5

*Not CE Approved

Installation Guide



Performance at Sea Level



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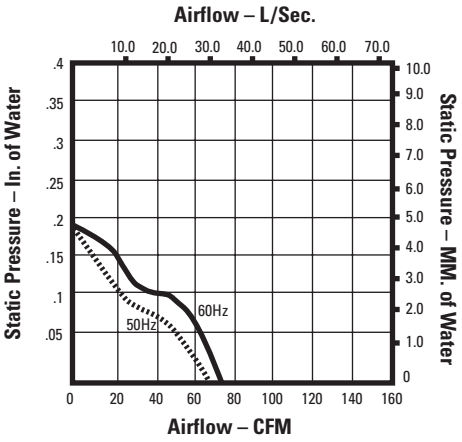


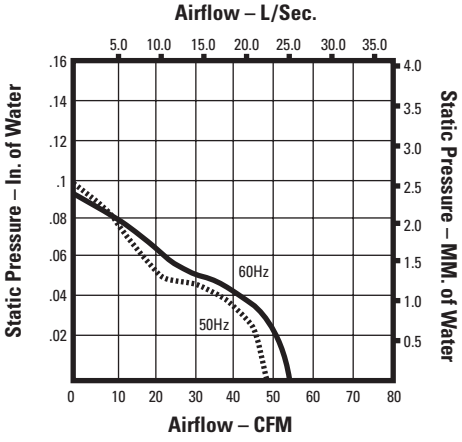
A47-B10A-15T3-000

Approvals

UL File No.
E105397

CSA File No.
72877

VDE File No.
17074-2611-0702



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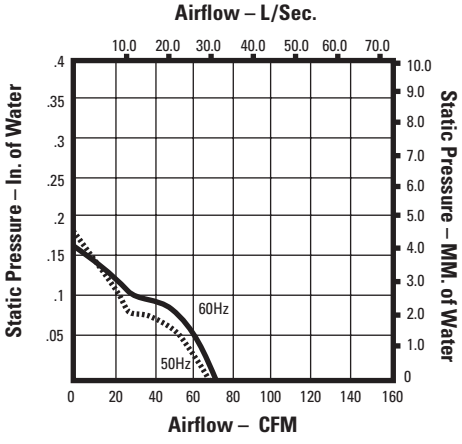


A47-B10A-23T3-000

All operating specifications measured at nominal operating voltage, free air at sea level

NOTES:

Globe Motors™ AC Series Tubeaxial Cooling Fans Model No. A47T15

4.69" Sq. x 1.50" (119 mm Sq. x 38 mm) 46-102 CFM (21.7-48.1 L/Sec.)

Features

- Reliable shaded-pole motor construction
- Precision ball bearing system provides:
  - Longer life
  - Higher temperature extremes
  - Lower noise over time
  - Maximum shock and vibration resistance
- Rugged die-cast aluminum housing for maximum heat dissipation

Accessories:
Finger guards
Power cords
Filters

General Specifications

Frame: Die-cast aluminum painted black for moisture and corrosion resistance

Impeller: Reinforced polybutylene plastic (UL94V-0 rating)

Bearings: Precision, life-lubricated ball bearings

Insulation: Class A integral ground system rated @ 248°F (120°C)

Weight: 19.4 ozs. (550 grams)

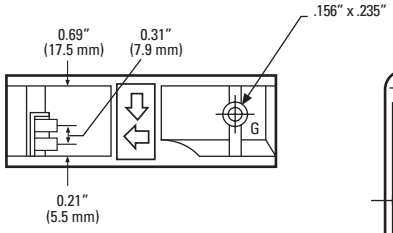
Operating Temperature Range: 14° to 158°F (-10° to 70°C)

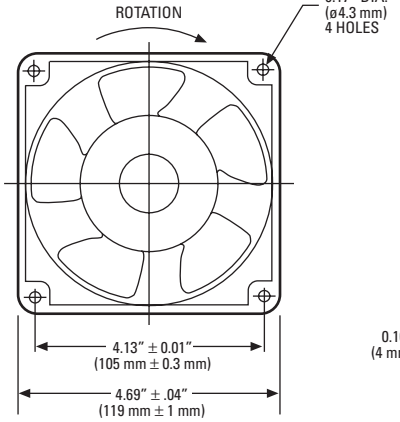
Insulation Resistance: 100 megohms minimum @ 500 VDC

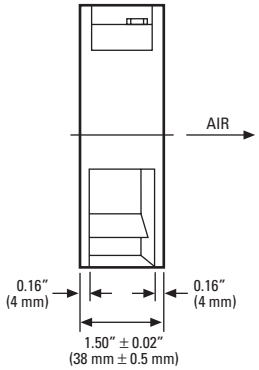
Dielectric Strength: 1500 VAC for 3 seconds

Safety Protection: Impedance protected

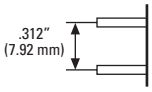
Life Expectancy: 50,000 hours minimum @ 77°F (25°C)







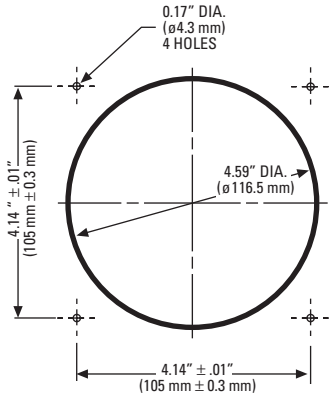
Terminals
2 Solder Terminals
Centers: .312" (7.92 mm)
Thickness: .02" (.51 mm)
Width: .120" (3.05 mm)
Length: .31" (7.8 mm)



							Airflow (Min.)	
Globe Motors Part Number	Nominal Voltage VAC	Frequency Hz	Watts	Line Amps	RPM	Acoustic Noise dBA	CFM	Liters per Second
A47-B15A-15T1-100*	115	50 / 60	6.0 / 5.5	0.090 / 0.080	1350 / 1450	27 / 28	46 / 49	21.7 / 23.1
A47-B15A-15T2-100	115	50 / 60	11.0 / 10.0	0.160 / 0.140	2400 / 2600	34 / 37	81 / 88	38.2 / 41.5
A47-B15A-15T3-100	115	50 / 60	15.5 / 14.5	0.250 / 0.210	2600 / 2900	37 / 41	88 / 102	41.5 / 48.1
A47-B15A-23T1-100*	230	50 / 60	6.5 / 6.0	0.050 / 0.045	1350 / 1450	27 / 28	46 / 49	21.7 / 23.1
A47-B15A-23T2-100	230	50 / 60	12.0 / 11.0	0.100 / 0.080	2400 / 2600	34 / 37	81 / 88	38.2 / 41.5
A47-B15A-23T3-100	230	50 / 60	15.0 / 14.0	0.120 / 0.100	2600 / 2900	37 / 41	88 / 102	41.5 / 48.1

* Not CSA Approved

Installation Guide



Approvals

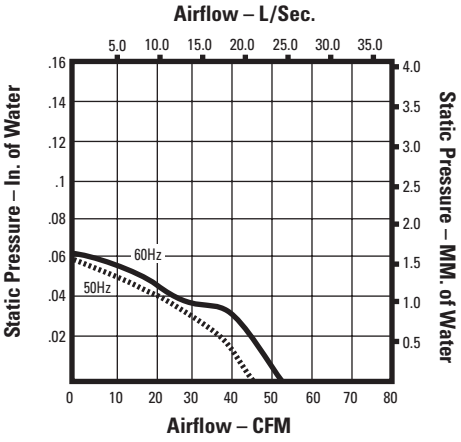
UL File No.
E105397

CSA File No.
72877

VDE File No.
17074-2611-0703

NOTES:

Performance at Sea Level



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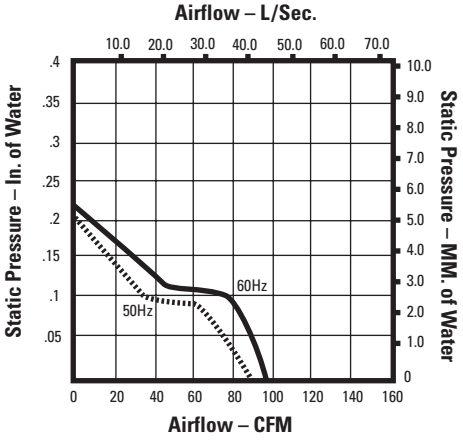

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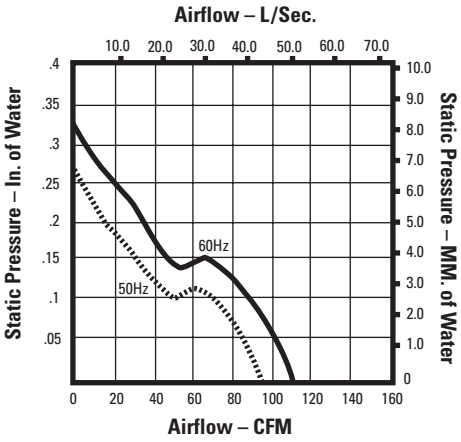

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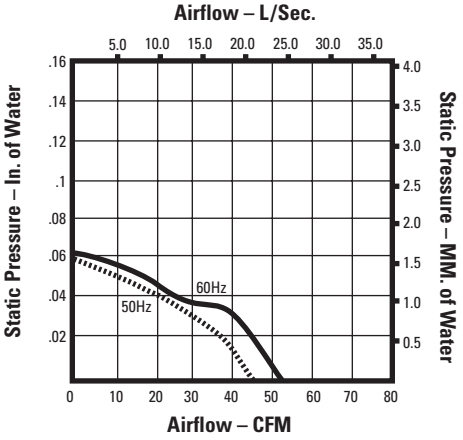

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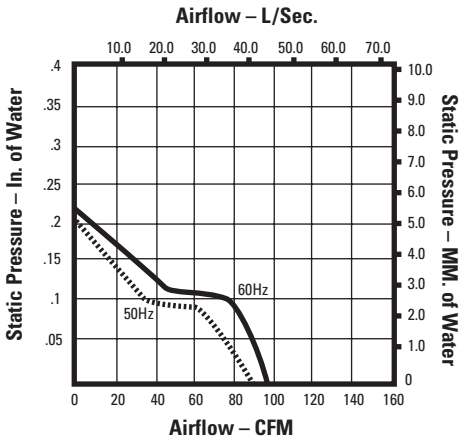

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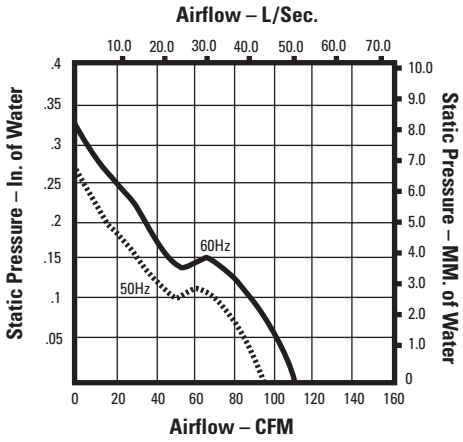


A47-B15A-23T3-100

All operating specifications measured at nominal operating voltage, free air at sea level

Globe Motors™ AC Series Tubeaxial Cooling Fans Model No. A59T15

5.91" x 6.78" x 1.50"
(150 mm x 172 mm x 38 mm)
85-212 CFM
(40.1-100 L/Sec.)

Features

- Reliable split-phase capacitor motor construction
- Precision ball bearing system provides:
  - Longer life
  - Higher temperature extremes
  - Lower noise over time
  - Maximum shock and vibration resistance
- Rugged die-cast aluminum housing for maximum heat dissipation

Accessories:
Finger guards
Power cords

General Specifications

Frame: Die-cast aluminum painted black for moisture and corrosion resistance

Impeller: Reinforced polybutylene plastic (UL94V-0 rating)

Bearings: Precision, life-lubricated ball bearings

Insulation: Class A integral ground system rated @ 248°F (120°C)

Weight: 26 ozs. (750 grams)

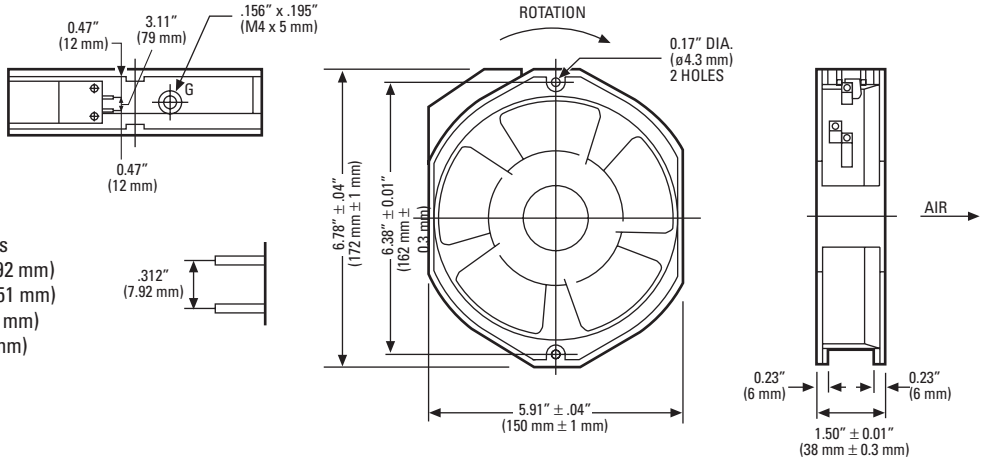
Operating Temperature Range: 14° to 158°F (-10° to 70°C)

Insulation Resistance: 100 megohms minimum @ 500 VDC

Dielectric Strength: 1500 VAC for 3 seconds

Safety Protection: Impedance protected; thermally protected

Life Expectancy: 50,000 hours minimum @ 77°F (25°C)



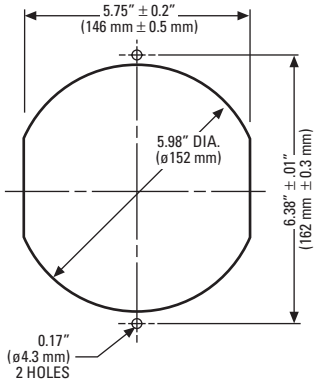
Terminals
2 Solder Terminals
Centers: .312" (7.92 mm)
Thickness: .02" (.51 mm)
Width: .120" (3.05 mm)
Length: .31" (7.8 mm)

Note: 230 volt fans have tapped holes

Globe Motors Part Number	Nominal Voltage VAC	Frequency Hz	Watts	Line Amps	RPM	Acoustic Noise dBA	Airflow (Min.) CFM	Airflow (Min.) Liters per Second
A59-B15A-15T1-000	115	50 / 60	16.0 / 18.0	0.160 / 0.190	1400 / 1650	35 / 38	85 / 102	40.1 / 48.1
A59-B15A-15T2-000	115	50 / 60	21.0 / 22.0	0.200 / 0.210	2200 / 2600	46 / 50	141 / 166	66.5 / 78.4
A59-B15A-15T3-000	115	50 / 60	35.0 / 32.0	0.380 / 0.360	2700 / 3200	52 / 56	177 / 212	83.5 / 100.0
A59-B15A-23T1-000	230	50 / 60	16.0 / 18.0	0.090 / 0.110	1400 / 1650	35 / 38	85 / 102	40.1 / 48.1
A59-B15A-23T2-000	230	50 / 60	23.0 / 26.0	0.120 / 0.140	2200 / 2600	46 / 50	141 / 166	66.5 / 78.4
A59-B15A-23T3-000	230	50 / 60	35.0 / 35.0	0.180 / 0.190	2700 / 3200	52 / 56	177 / 212	83.5 / 100.0

Note capacitor values: 115 VAC Series — 3.0µF @ 250 VAC; 230 VAC Series — 1.0µ.F @ 350 VAC
Capacitor is built in

Installation Guide



Approvals

UL File No.
E105397

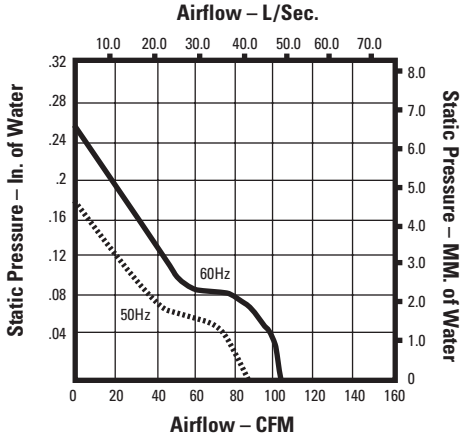
CSA File No.
72877

VDE File No.
17074-2611-0703

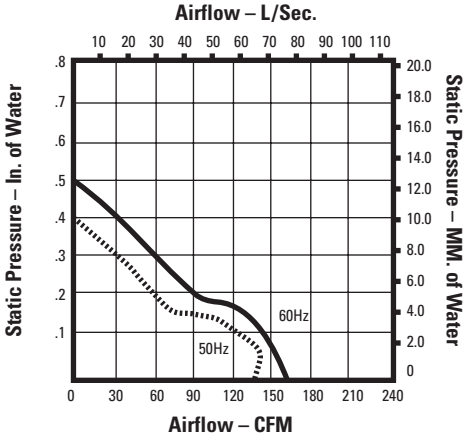
4313

NOTES:

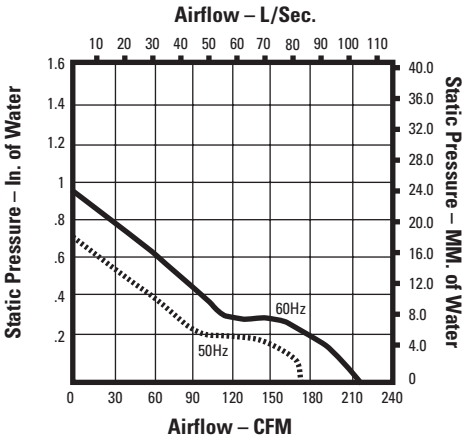
Performance at Sea Level



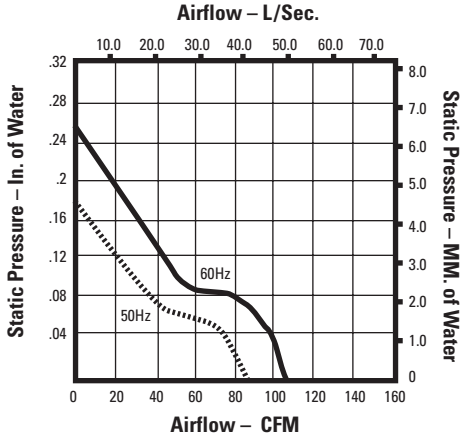
A59-B15A-15T1-000



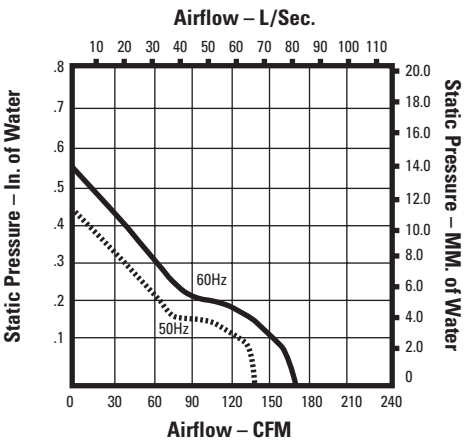
A59-B15A-15T2-000



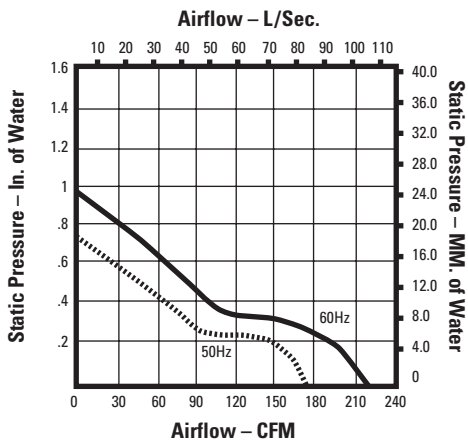
A59-B15A-15T3-000



A59-B15A-23T1-000



A59-B15A-23T2-000



A59-B15A-23T3-000

All operating specifications measured at nominal operating voltage, free air at sea level

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For over 50 years, Globe Motors has supplied quality DC motors, brushless DC motors, gearmotors, and AC and DC commercial cooling fans for industrial, medical, automotive, business machines, and mil-aero applications. Whether your need is standard or unique, call

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Globe Motors™ DC Series Tubeaxial Cooling Fans Model No. D16T06

1.60" Sq. x .60"
(41 mm Sq. x 15 mm)
6-8 CFM
(2.8-3.8 L/Sec.)

Features

- Solid-state brushless motor design provides:
  - Improved performance
  - High efficiency
  - Auto restart
  - Low input power
  - Lower operating voltages
- Precision ball bearing system provides:
  - Longer life
  - Higher temperature extremes
  - Lower noise over time
  - Maximum shock and vibration resistance
- Designed to meet the rigid standards of UL, CSA, VDE, and CE.

Accessories:
Finger guards

General Specifications

Frame: Reinforced polybutylene plastic (UL94V-0 rating)

Impeller: Reinforced polybutylene plastic (UL94V-0 rating)

Bearings: Precision, life-lubricated ball bearings

Insulation: UL-Class A

Weight: .71 ozs. (20 grams)

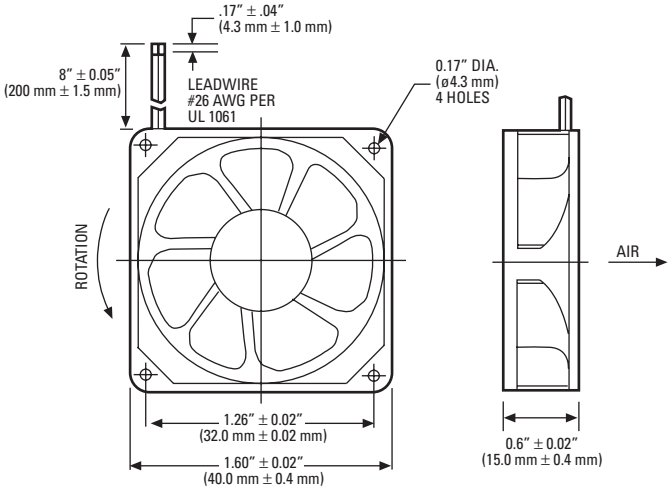
Operating Temperature Range: 14° to 158°F (-10° to 70°C)

Insulation Resistance: 10 megohms minimum @ 500 VDC

Dielectric Strength: 700 VAC for 3 seconds

Safety Protection: Electronic locked rotor protected; polarity protected

Life Expectancy: 50,000 hours minimum @ 77°F (25°C)

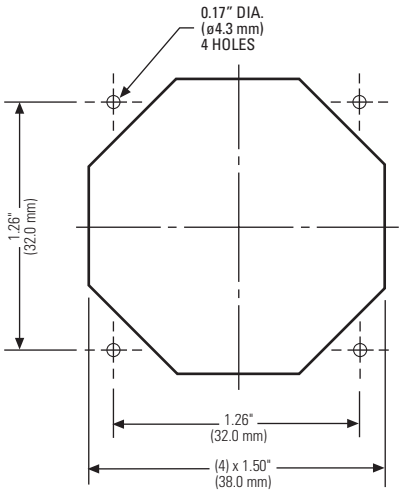


RED LEAD IS POSITIVE (+)
BLACK LEAD IS NEGATIVE (-)

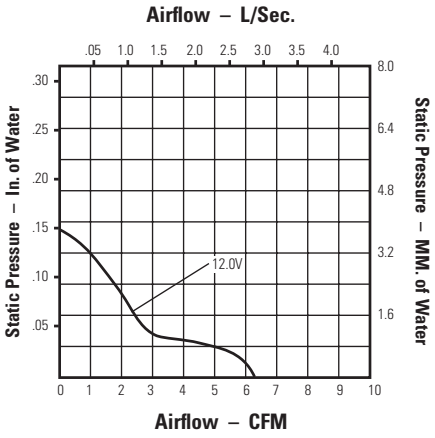
Globe Motors Part Number	Nominal Voltage VAC	Voltage Operating Range VDC	Watts	Line Amps	RPM	Acoustic Noise dBA	Airflow (Min.) CFM	Airflow (Min.) Liters per Second
D16-B06A-04W3-000	12	10.2 / 13.8	0.804	0.067	6000	28	6	2.8
D16-B06A-04W5-000	12	10.2 / 13.8	1.02	0.085	8000	34	8	3.8

*Note: For tachometer output models, substitute "B" in part number. Part Number D16-B06"A"-04W3-000 would change to D16-B06"B"-04W3-000. Minimum order quantity may apply.
For locked rotor sensor output models, substitute "C" in part number. Part Number D16-B06"A"-04W3-000 would change to D16-B06"C"-04W3-000. Minimum order quantity may apply.

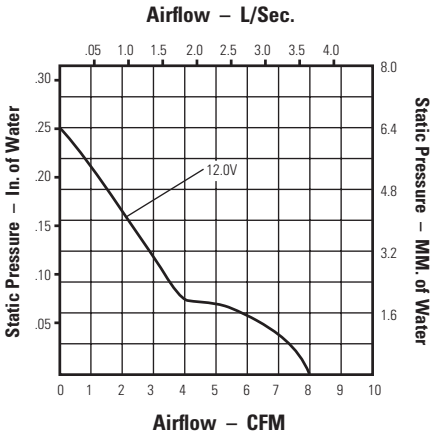
Installation Guide



Performance at Sea Level



D16-B06A-04W3-000



D16-B06A-04W5-000

Approvals

UL File No.
E105397

CSA File No.
72877

VDE File No.
17074-2611-0707

All operating specifications measured at nominal operating voltage, free air at sea level

NOTES:

Globe Motors™ DC Series Tubeaxial Cooling Fans Model No. D24T08

2.36" Sq. x 0.79" (60 mm Sq. x 20 mm) 13-16 CFM (6.1-7.6 L/Sec.)

Features

- 7-blade impeller design provides:
  - Reduced noise
  - Improved performance
  - High efficiency
- Solid-state brushless motor design provides:
  - Auto restart
  - Low input power
  - Lower operating voltages
- Precision ball bearing system provides:
  - Longer life
  - Higher temperature extremes
  - Lower noise over time
  - Maximum shock and vibration resistance
- Designed to meet the rigid standards of UL, CSA, VDE, and CE.

Accessories:
Finger guards

General Specifications

Frame: Reinforced polybutylene plastic (UL94V-0 flame retardant)

Impeller: Reinforced polybutylene plastic (UL94V-0 rating)

Bearings: Precision, life-lubricated ball bearings

Insulation: Class A integral ground system rated @ 248°F (120°C)

Weight: 3.0 ozs. (85 grams)

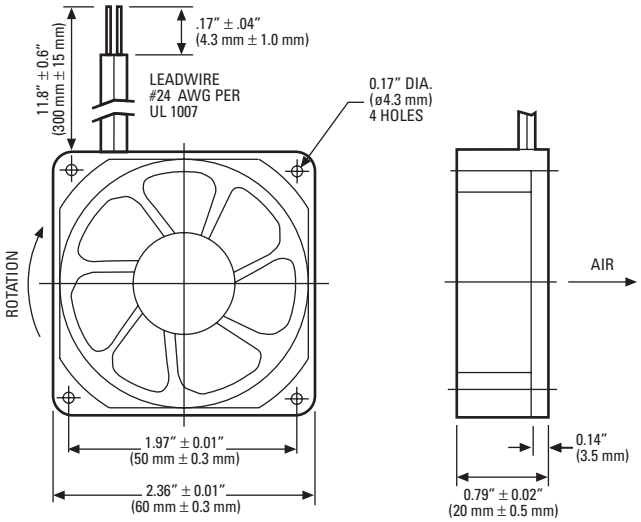
Operating Temperature Range: 14° to 158°F (-10° to 70°C)

Insulation Resistance: 10 megohms minimum @ 500 VDC

Dielectric Strength: 500 VAC for 60 seconds

Safety Protection: Electronic locked rotor protected; polarity protected

Life Expectancy: 75,000 hours minimum @ 77°F (25°C)

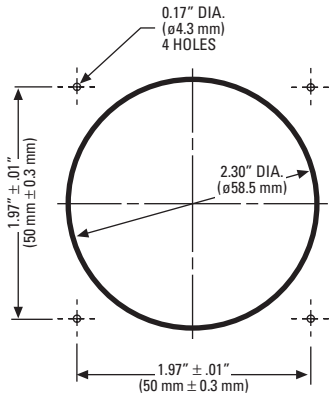


RED LEAD IS POSITIVE (+)
BLACK LEAD IS NEGATIVE (-)

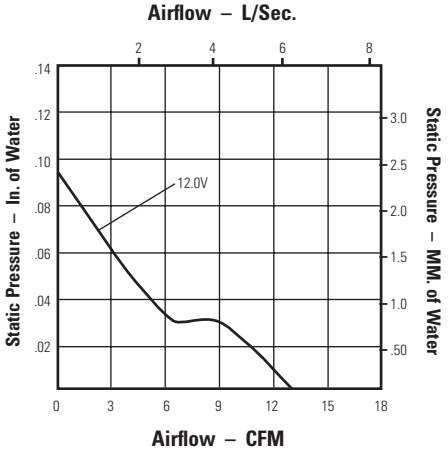
Globe Motors Part Number	Nominal Voltage VAC	Voltage Operating Range VDC	Watts	Line Amps	RPM	Acoustic Noise dBA	Airflow (Min.) CFM	Airflow (Min.) Liters per Second
D24-B08A-04W3-000	12	6.0 / 13.8	0.84	0.07	3200	25	13	6.1
D24-B08A-04W4-000	12	6.0 / 13.8	1.08	0.09	4000	29	16	7.6
D24-B08A-05W3-000	24	15.0 / 27.6	0.96	0.04	3200	25	13	6.1
D24-B08A-05W4-000	24	15.0 / 27.6	1.20	0.05	4000	29	16	7.6

*Note: For tachometer output models, substitute "B" in part number. Part Number D24-B08"A"-04W3-000 would change to D24-B08"B"-04W3-000. Minimum order quantity may apply.
For locked rotor sensor output models, substitute "C" in part number. Part Number D24-B08"A"-04W3-000 would change to D24-B08"C"-04W3-000. Minimum order quantity may apply.

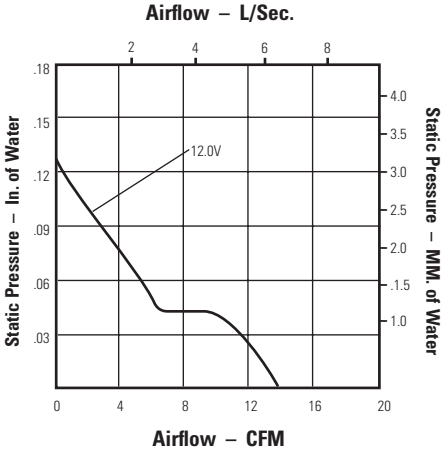
Installation Guide



Performance at Sea Level



D24-B08A-04W3-000



D24-B08A-04W4-000

All operating specifications measured at nominal operating voltage, free air at sea level

24 volt performance is identical to 12 volt fan performance

Approvals

UL File No.
E105397

CSA File No.
72877

VDE File No.
17074-2611-0708

NOTES:

Globe Motors™ DC Series Tubeaxial Cooling Fans Model No. D24T10

2.36" Sq. x 1.00" (60 mm Sq. x 25 mm) 17-23 CFM (8.0-10.9 L/Sec.)

Features

- 7-blade impeller design provides:
  - Reduced noise
  - Improved performance
  - High efficiency
- Solid-state brushless motor design provides:
  - Auto restart
  - Low input power
  - Lower operating voltages
- Precision ball bearing system provides:
  - Longer life
  - Higher temperature extremes
  - Lower noise over time
  - Maximum shock and vibration resistance
- Designed to meet the rigid standards of UL, CSA, VDE, and CE.

Accessories:
Finger guards

General Specifications

Frame: Reinforced polybutylene plastic (UL94V-0 flame retardant)

Impeller: Reinforced polybutylene plastic (UL94V-0 rating)

Bearings: Precision, life-lubricated ball bearings

Insulation: Class A integral ground system rated @ 248°F (120°C)

Weight: 2.3 ozs. (65 grams)

Operating Temperature Range: 14° to 158°F (-10° to 70°C)

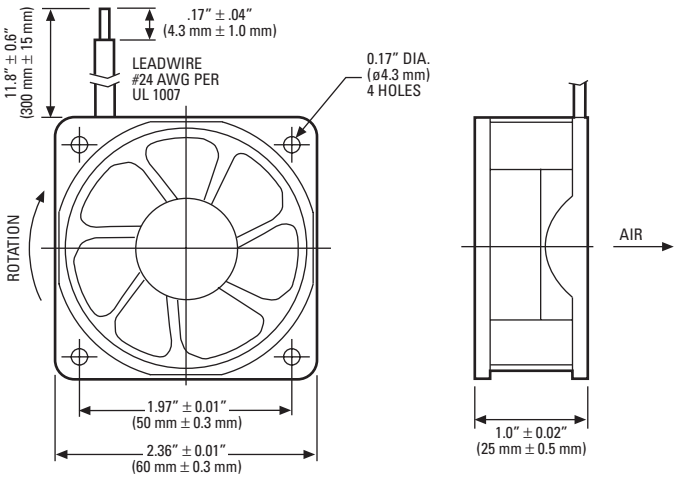
Insulation Resistance: 10 megohms minimum @ 250 VDC

Dielectric Strength: 500 VAC for 60 seconds

Safety Protection: Electronic locked rotor protected; polarity protected

Life Expectancy: 75,000 hours minimum @ 77°F (25°C)

Options: (Consult Factory)
Tachometer output
Locked rotor output sensor

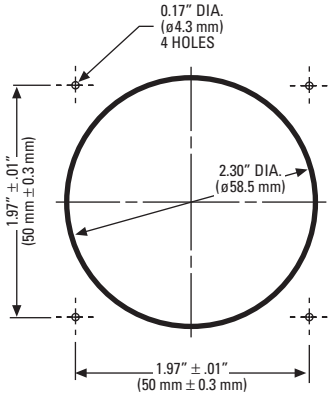


RED LEAD IS POSITIVE (+)
BLACK LEAD IS NEGATIVE (-)
WHITE LEAD IS SENSOR

Globe Motors Part Number	Nominal Voltage VAC	Voltage Operating Range VDC	Watts	Line Amps	RPM	Acoustic Noise dBA	Airflow (Min.) CFM	Airflow (Min.) Liters per Second
D24-B10A-04W3-100	12	6.0 / 13.8	1.44	0.12	3600	28	17	8.0
D24-B10A-04W4-100	12	6.0 / 13.8	2.04	0.17	4550	34	22	10.3
D24-B10A-04W5-100	12	6.0 / 13.8	2.40	0.20	4900	35	23	10.9
D24-B10A-05W3-100	24	10.2 / 27.6	1.68	0.07	3600	28	17	8.0
D24-B10A-05W4-100	24	10.0 / 27.6	2.16	0.09	4550	34	22	10.3
D24-B10A-05W5-100	24	10.0 / 27.6	2.40	0.10	4900	35	23	10.9

*Note: For tachometer output models, substitute "B" in part number. Part Number D24-B10"A"-04W3-100 would change to D24-B10"B"-04W3-100. Minimum order quantity may apply.
For locked rotor sensor output models, substitute "C" in part number. Part Number D24-B10"A"-04W3-100 would change to D24-B10"C"-04W3-100. Minimum order quantity may apply.

Installation Guide



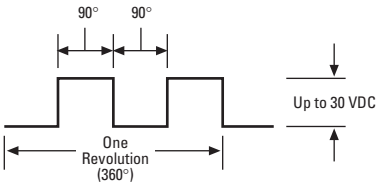
Approvals

UL File No.
E105397

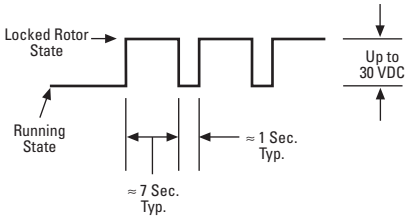
CSA File No.
72877

VDE File No.
17074-2611-0706

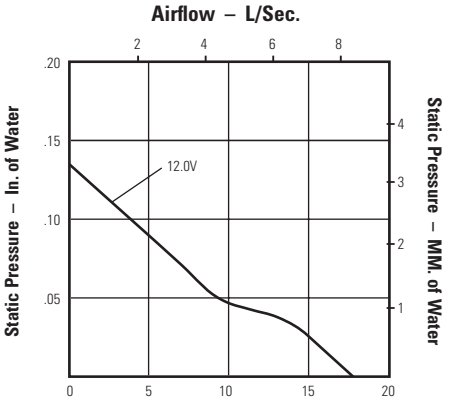
Tachometer Output (Open Collector Circuit)



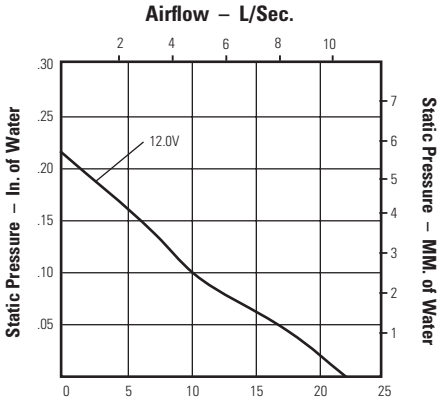
Locked Rotor Output (Open Collector Circuit)



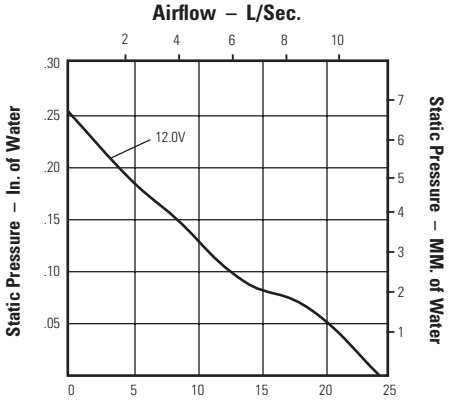
Performance at Sea Level



D24-B10A-04W3-100



D24-B10A-04W4-100



D24-B10A-04W5-100

All operating specifications measured at nominal operating voltage, free air at sea level

24 volt performance is identical to 12 volt fan performance

NOTES:

Globe Motors™ DC Series Tubeaxial Cooling Fans Model No. D31T10

3.15" Sq. x 1.00" (80 mm Sq. x 25 mm) 28-39 CFM (13.2-18.4 L/Sec.)

Features

- 7-blade impeller design provides:
  - Reduced noise
  - Improved performance
  - High efficiency
- Solid-state brushless motor design provides:
  - Auto restart
  - Low input power
  - Lower operating voltages
- Precision ball bearing system provides:
  - Longer life
  - Higher temperature extremes
  - Lower noise over time
  - Maximum shock and vibration resistance
- Designed to meet the rigid standards of UL, CSA, VDE, and CE.

Accessories:
Finger guards
Filters
Screen guard

General Specifications

Frame: Reinforced polybutylene plastic ((UL94V-0 flame retardant)

Impeller: Reinforced polybutylene plastic (UL94V-0 rating)

Bearings: Precision, life-lubricated ball bearings

Insulation: Class A integral ground system rated @ 248°F (120°C)

Weight: 3.3 ozs. (95 grams)

Operating Temperature Range: 14° to 158°F (-10° to 70°C)

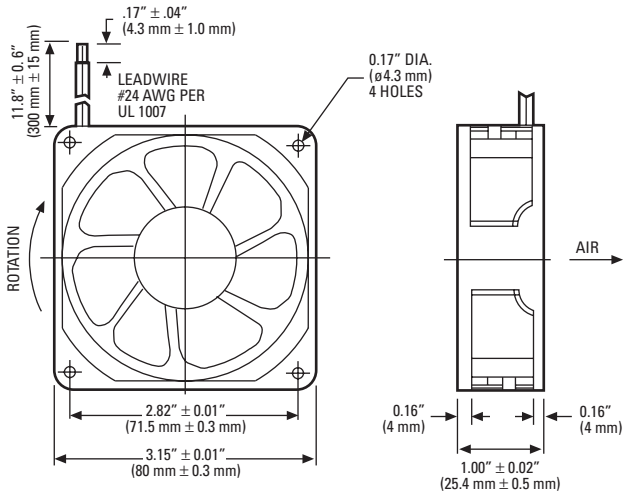
Insulation Resistance: 10 megohms minimum @ 500 VDC

Dielectric Strength: 500 VAC for 60 seconds

Safety Protection: Electronic locked rotor protected; polarity protected

Life Expectancy: 75,000 hours minimum @ 77°F (25°C)

Options: (Consult Factory)
Tachometer output
Locked rotor sensor output

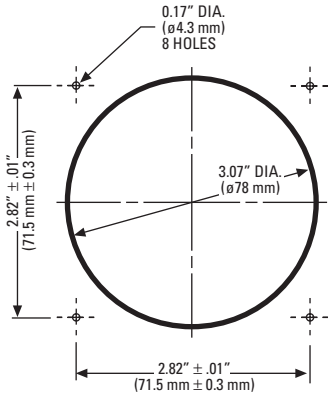


RED LEAD IS POSITIVE (+)
BLACK LEAD IS NEGATIVE (-)
WHITE LEAD IS TACHOMETER/SENSOR

Globe Motors Part Number	Nominal Voltage VAC	Voltage Operating Range VDC	Watts	Line Amps	RPM	Acoustic Noise dBA	Airflow (Min.) CFM	Airflow (Min.) Liters per Second
D31-B10A-04W2-100	12	6.0 / 13.8	1.32	0.11	2400	25	28	13.2
D31-B10A-04W3-100	12	6.0 / 13.8	2.04	0.17	2700	28	32	15.0
D31-B10A-04W5-100	12	6.0 / 13.8	2.76	0.23	3250	34	39	18.4
D31-B10A-05W2-100	24	10.0 / 27.6	1.68	0.07	2400	25	28	13.2
D31-B10A-05W3-100	24	10.0 / 27.6	1.92	0.08	2700	28	32	15.0
D31-B10A-05W5-100	24	10.0 / 27.6	2.88	0.12	3250	34	39	18.4

*Note: For tachometer output models, substitute "B" in part number. Part Number D31-B10"A"-04W2-100 would change to D31-B10"B"-04W2-100. Minimum order quantity may apply.
For locked rotor sensor output models, substitute "C" in part number. Part Number D31-B10"A"-04W2-100 would change to D31-B10"C"-04W2-100. Minimum order quantity may apply.

Installation Guide



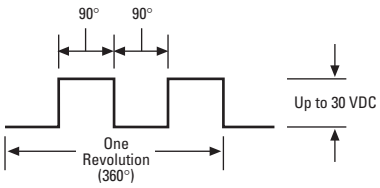
Approvals

UL File No.
E105397

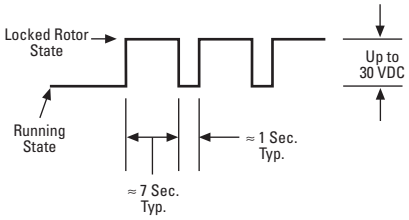
CSA File No.
72877

VDE File No.
17074-2611-0701

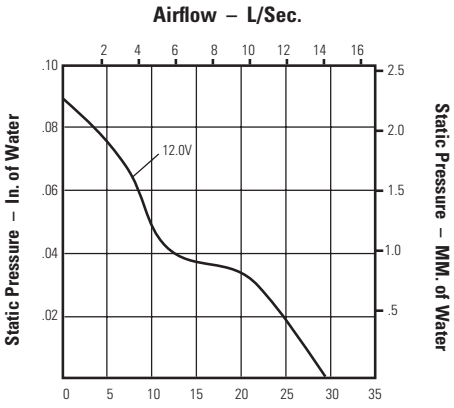
Tachometer Output
(Open Collector Circuit)



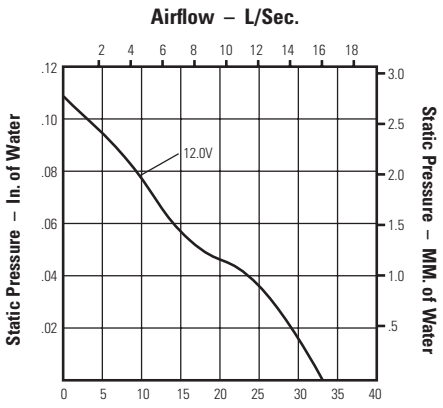
Locked Rotor Output
(Open Collector Circuit)



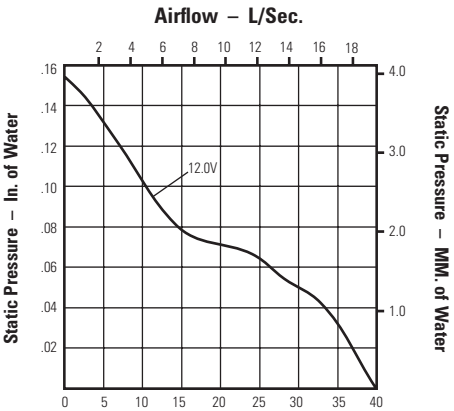
Performance at Sea Level



D31-B10A-04W2-100



D31-B10A-04W3-100



D31-B10A-04W5-100

All operating specifications measured at nominal operating voltage, free air at sea level

24 volt performance is identical to 12 volt fan performance

NOTES:

Globe Motors™ DC Series Tubeaxial Cooling Fans Model No. D36T10

3.62" Sq. x 1.00" (92 mm Sq. x 25 mm) 34-55 CFM (16.0-25.9 L/Sec.)

Features

- 7-blade impeller design provides:
  - Reduced noise
  - Improved performance
  - High efficiency
- Solid-state brushless motor design provides:
  - Auto restart
  - Low input power
  - Lower operating voltages
- Precision ball bearing system provides:
  - Longer life
  - Higher temperature extremes
  - Lower noise over time
  - Maximum shock and vibration resistance
- Designed to meet the rigid standards of UL, CSA, VDE, and CE.

Accessories:
Finger guards

General Specifications

Frame: Reinforced polybutylene plastic (UL94V-0 flame retardant)

Impeller: Reinforced polybutylene plastic (UL94V-0 rating)

Bearings: Precision, life-lubricated ball bearings

Insulation: Class A integral ground system rated @ 248°F (120°C)

Weight: 3.5 ozs. (100 grams)

Operating Temperature Range: 14° to 158°F (-10° to 70°C)

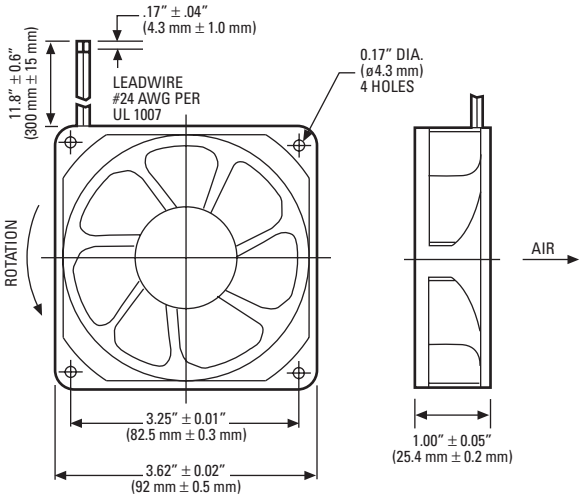
Insulation Resistance: 10 megohms minimum @ 250 VDC

Dielectric Strength: 500 VAC for 60 seconds

Safety Protection: Electronic locked rotor protected; polarity protected

Life Expectancy: 75,000 hours minimum @ 77°F (25°C)

Options: (Consult Factory)
Tachometer output
Locked rotor output sensor

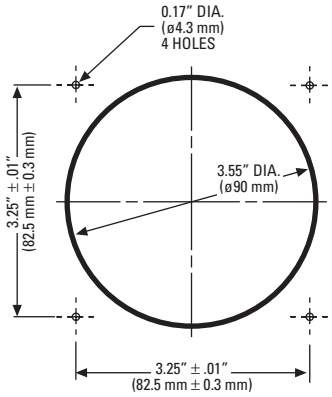


RED LEAD IS POSITIVE (+)
BLACK LEAD IS NEGATIVE (-)
WHITE LEAD IS TACHOMETER/SENSOR

Globe Motors Part Number	Nominal Voltage VAC	Voltage Operating Range VDC	Watts	Line Amps	RPM	Acoustic Noise dBA	Airflow (Min.) CFM	Airflow (Min.) Liters per Second
D36-B10A-04W2-100	12	6.0 / 13.8	1.32	0.110	2100	30	34	16.0
D36-B10A-04W3-100	12	6.0 / 13.8	2.64	0.220	2850	38	48	22.6
D36-B10A-04W5-100	12	6.0 / 13.8	3.78	0.315	3200	41	55	25.9
D36-B10A-05W2-100	24	10.0 / 27.6	1.44	0.060	2100	30	34	16.0
D36-B10A-05W3-100	24	10.0 / 27.6	2.88	0.120	2850	38	48	22.6
D36-B10A-05W5-100	24	10.0 / 25.0	3.84	0.160	3200	41	55	25.9

*Note: For tachometer output models, substitute "B" in part number. Part Number D36-B10"A"-04W2-100 would change to D36-B10"B"-04W2-100. Minimum order quantity may apply.
For locked rotor sensor output models, substitute "C" in part number. Part Number D36-B10"A"-04W2-100 would change to D36-B10"C"-04W2-100. Minimum order quantity may apply.

Installation Guide



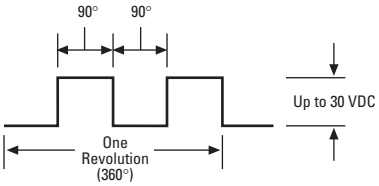
Approvals

UL File No.
E105397

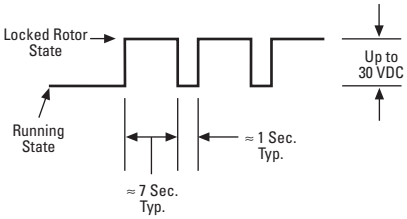
CSA File No.
72877

VDE File No.
17074-2611-0701

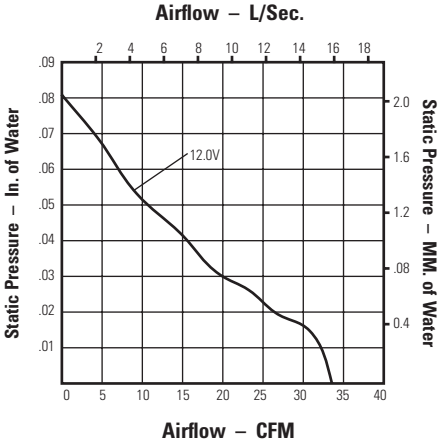
Tachometer Output (Open Collector Circuit)



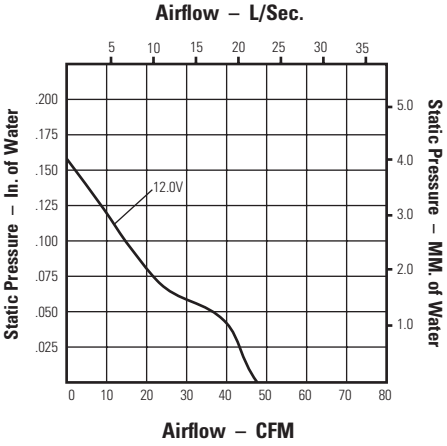
Locked Rotor Output (Open Collector Circuit)



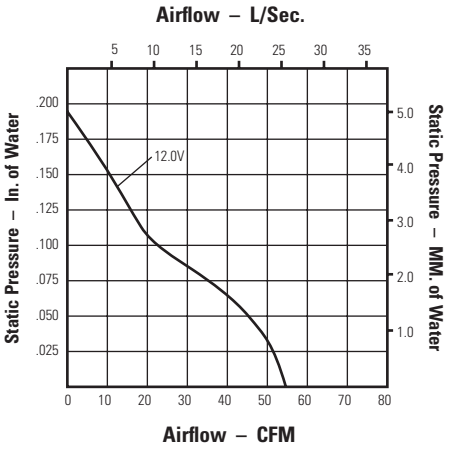
Performance at Sea Level



D36-B10A-04W2-100



D36-B10A-04W3-100



D36-B10A-04W5-100

All operating specifications measured at nominal operating voltage, free air at sea level

24 volt performance is identical to 12 volt fan performance

NOTES:

Globe Motors™ DC Series Tubeaxial Cooling Fans Model No. D47T10

4.69" Sq. x 1.00" (119 mm Sq. x 25 mm) 88-115 CFM (41.5-54.2 L/Sec.)

Features

- 7-blade impeller design provides:
  - Reduced noise
  - Improved performance
  - High efficiency
- Solid-state brushless motor design provides:
  - Auto restart
  - Low input power
  - Lower operating voltages
- Precision ball bearing system provides:
  - Longer life
  - Higher temperature extremes
  - Lower noise over time
  - Maximum shock and vibration resistance
- Designed to meet the rigid standards of UL, CSA, VDE, and CE.

Accessories:
Finger guards
Filters

General Specifications

Frame: Reinforced polybutylene plastic (UL94V-0 flame retardant)

Impeller: Reinforced polybutylene plastic (UL94V-0 rating)

Bearings: Precision, life-lubricated ball bearings

Insulation: Class A integral ground system rated @ 248°F (120°C)

Weight: 7.7 ozs. (220 grams)

Operating Temperature Range: 14° to 158°F (-10° to 70°C)

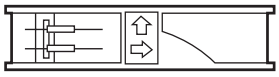
Insulation Resistance: 10 megohms minimum @ 250 VDC

Dielectric Strength: 500 VAC for 60 seconds

Safety Protection: Electronic locked rotor protected; polarity protected

Life Expectancy: 75,000 hours minimum @ 77°F (25°C)

Options: (Consult Factory)
Tachometer output
Terminal versions
Locked rotor sensor output



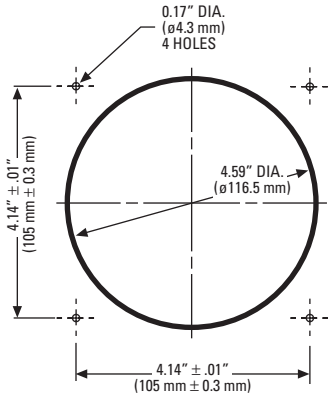
Terminals
2 Solder Terminals
Centers: .312" (7.92 mm)
Thickness: .02" (.51 mm)
Width: .120" (3.05 mm)
Length: .31" (7.8 mm)

RED LEAD IS POSITIVE (+)
BLACK LEAD IS NEGATIVE (-)
WHITE LEAD IS TACHOMETER/SENSOR

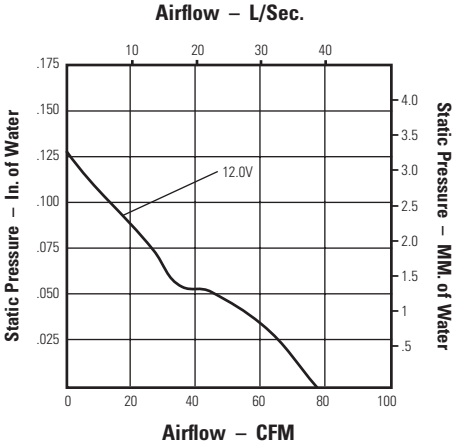
Globe Motors Part Number	Nominal Voltage VAC	Voltage Operating Range VDC	Watts	Line Amps	RPM	Acoustic Noise dBA	Airflow (Min.) CFM	Airflow (Min.) Liters per Second
D47-B10A-04W2-100	12	6.0 / 13.8	3.36	0.28	2200	35	88	41.5
D47-B10A-04W3-100	12	6.0 / 13.0	6.60	0.55	2800	42	115	54.2
D47-B10A-05W2-100	24	10.0 / 27.6	3.60	0.15	2200	35	88	41.5
D47-B10A-05W3-100	24	10.0 / 26.0	6.96	0.29	2800	42	115	54.2

*Note: For tachometer output models, substitute "B" in part number. Part Number D47-B10"A"-04W2-000 would change to D47-B10"B"-04W2-000. Minimum order quantity may apply.
For locked rotor sensor output models, substitute "C" in part number. Part Number D47-B10"A"-04W2-000 would change to D47-B10"C"-04W2-000. Minimum order quantity may apply.

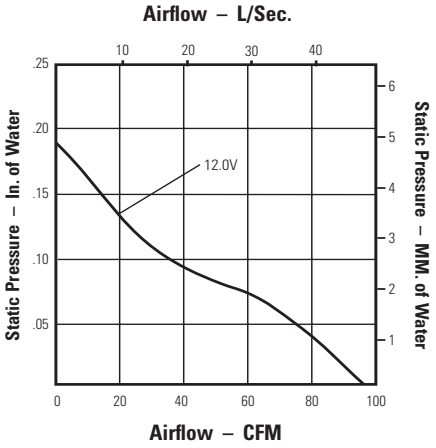
Installation Guide



Performance at Sea Level



D47-B10A-04W2-100



D47-B10A-04W3-100

Approvals

UL File No.
E105397

CSA File No.
72877

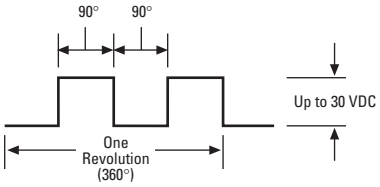
VDE File No.
17074-2611-0701

All operating specifications measured at nominal operating voltage, free air at sea level

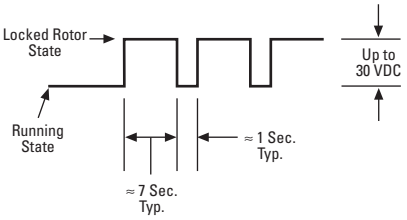
24 volt performance is identical to 12 volt fan performance

NOTES:

Tachometer Output (Open Collector Circuit)



Locked Rotor Output (Open Collector Circuit)



Globe Motors™ DC Series Tubeaxial Cooling Fans Model No. D47T15

4.69" Sq. x 1.50" (119 mm Sq. x 38 mm) 97-108 CFM (45.8-51.0 L/Sec.)

Features

- Solid-state brushless motor design provides:
  - Auto restart
  - Low input power
  - Lower operating voltages
- Precision ball bearing system provides:
  - Longer life
  - Higher temperature extremes
  - Lower noise over time
  - Maximum shock and vibration resistance
- Designed to meet the rigid standards of UL, CSA, VDE, and CE.

Accessories:
Finger guards
Filters

General Specifications

Frame: Reinforced polybutylene plastic (UL94V-0 flame retardant)

Impeller: Reinforced polybutylene plastic (UL94V-0 rating)

Bearings: Precision, life-lubricated ball bearings

Insulation: Class A integral ground system rated @ 248°F (120°C)

Weight: 9.2 ozs. (260 grams)

Operating Temperature Range: 14° to 158°F (-10° to 70°C)

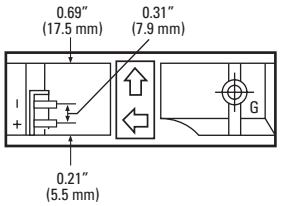
Insulation Resistance: 10 megohms minimum @ 500 VDC

Dielectric Strength: 500 VAC for 60 seconds

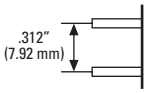
Safety Protection: Electronic locked rotor protected; polarity protected

Life Expectancy: 75,000 hours minimum @ 77°F (25°C)

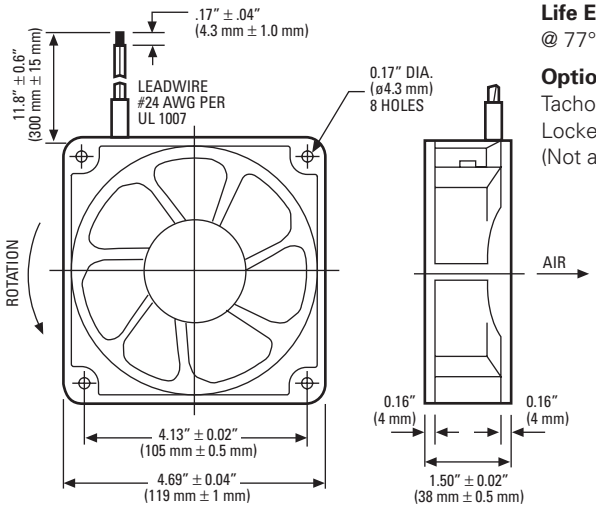
Options: (Consult Factory)
Tachometer output
Locked rotor sensor output
(Not available on 48 VDC)



Terminals
2 Solder Terminals
Centers: .312" (7.92 mm)
Thickness: .02" (.51 mm)
Width: .120" (3.05 mm)
Length: .31" (7.8 mm)



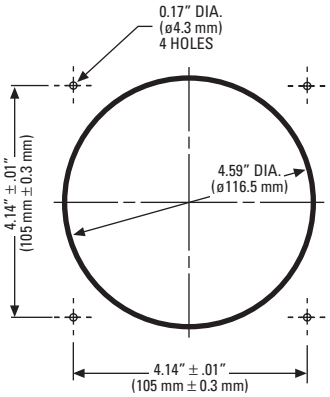
RED LEAD IS POSITIVE (+)
BLACK LEAD IS NEGATIVE (-)
WHITE LEAD IS TACHOMETER/SENSOR



Globe Motors Part Number	Nominal Voltage VAC	Voltage Operating Range VDC	Watts	Line Amps	RPM	Acoustic Noise dBA	Airflow (Min.) CFM	Airflow (Min.) Liters per Second
D47-B15A-04T2-100	12	6.0 / 13.8	4.80	0.40	2650	41	97	45.8
D47-B15A-04W2-100	12	6.0 / 13.8	4.80	0.40	2650	41	97	45.8
D47-B15A-04T3-100	12	6.0 / 13.8	6.60	0.55	2950	43	108	51.0
D47-B15A-04W3-100	12	6.0 / 13.8	6.60	0.55	2950	43	108	51.0
D47-B15A-04T4-100	12	6.0 / 13.8	8.40	0.70	3200	46	118	55.7
D47-B15A-04W4-100	12	6.0 / 13.8	8.40	0.70	3200	46	118	55.7
D47-B15A-05T2-100	24	10.0 / 27.6	5.04	0.21	2650	41	97	45.8
D47-B15A-05W2-100	24	10.0 / 27.6	5.04	0.21	2650	41	97	45.8
D47-B15A-05T3-100	24	10.0 / 27.6	7.44	0.31	2950	43	108	51.0
D47-B15A-05W3-100	24	10.0 / 27.6	7.44	0.31	2950	43	108	51.0
D47-B15A-05T4-100	24	10.0 / 27.6	8.40	0.35	3200	46	118	55.7
D47-B15A-05W4-100	24	10.0 / 27.6	8.40	0.35	3200	46	118	55.7
D47-B15A-07T3-100	48	25.0 / 55.2	7.68	0.16	2950	43	108	51.0
D47-B15A-07W3-100	48	25.0 / 55.2	7.68	0.16	2950	43	108	51.0

*Note: For tachometer output models, substitute "B" in part number. Part Number D47-B15"A"-04W2-100 would change to D47-B15"B"-04W2-100. Minimum order quantity may apply.
For locked rotor sensor output models, substitute "C" in part number. Part Number D47-B15"A"-04W2-100 would change to D47-B15"C"-04W2-100. Minimum order quantity may apply.

Installation Guide



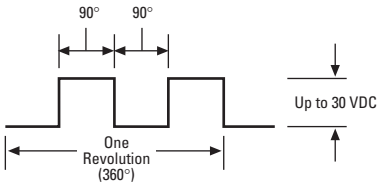
Approvals

UL File No.
E105397

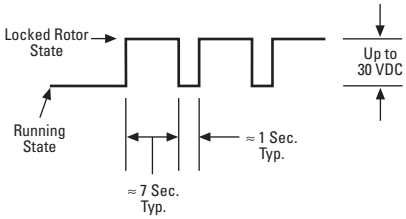
CSA File No.
72877

VDE File No.
17074-2611-0701

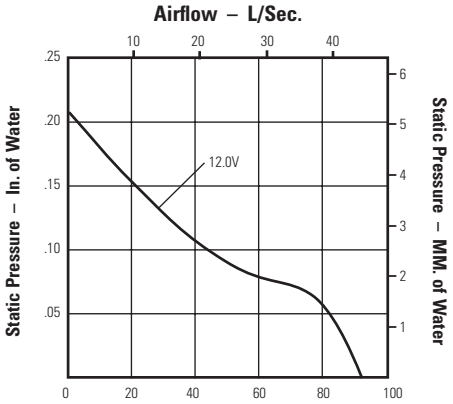
Tachometer Output (Open Collector Circuit)



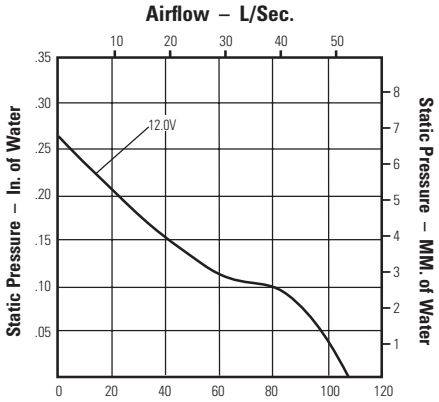
Locked Rotor Output (Open Collector Circuit)



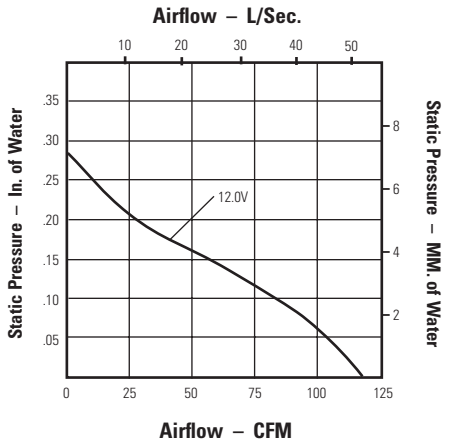
Performance at Sea Level



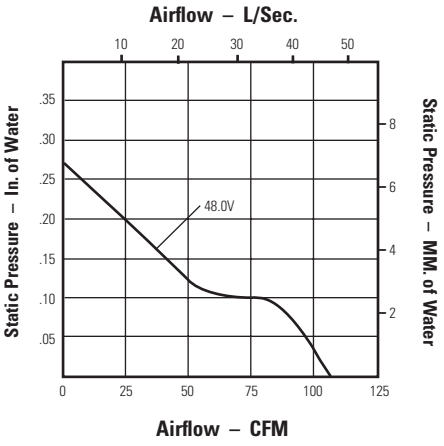
D47-B15A-04W2-100



D47-B15A-04W3-100



D47-B15A-04W4-100



D47-B15A-07W3-100

All operating specifications measured at nominal operating voltage, free air at sea level

24 volt performance is identical to 12 volt fan performance

NOTES:

Globe Motors™ DC Series Tubeaxial Cooling Fans Model No. D59T20

5.91" x 6.8" x 2"
(150 mm x 173 mm x 51 mm)
240 CFM
(113.3 L/Sec.)

Features

- Solid-state brushless motor design provides:
  - Improved performance
  - High efficiency
  - Auto restart
  - Low input power
  - Lower operating voltages
- Precision ball bearing system provides:
  - Longer life
  - Higher temperature extremes
  - Lower noise over time
  - Maximum shock and vibration resistance
- Designed to meet the rigid standards of UL, CSA, and CE.

Accessories:
Finger guards

General Specifications

Frame: Die-cast aluminum painted black for moisture and corrosion resistance

Impeller: Reinforced polybutylene plastic (UL94V-0 rating)

Bearings: Precision, life-lubricated ball bearings

Insulation: Class A integral ground system rated @ 248°F (120°C)

Weight: 20.5 ozs. (580 grams)

Operating Temperature Range: 14° to 158°F (-10° to 70°C)

Insulation Resistance: 10 megohms minimum @ 500 VDC

Dielectric Strength: 700 VAC for 3 seconds

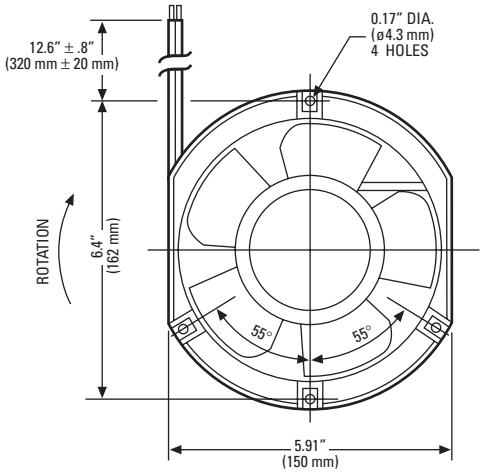
Safety Protection: Electronic locked rotor protected; polarity protected

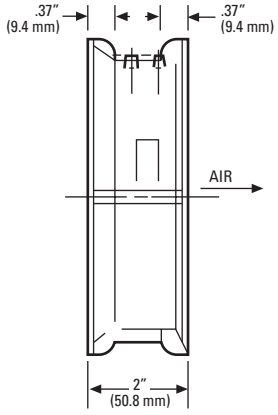
Life Expectancy: 75,000 hours minimum @ 77°F (25°C)

Approvals

UL File No.
E105397

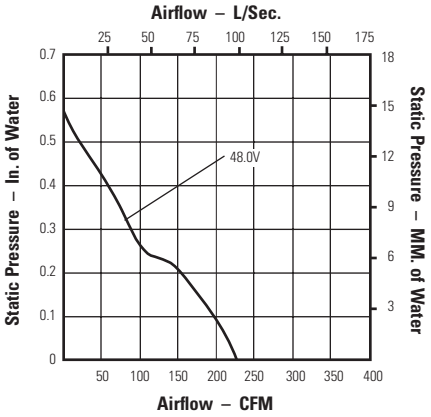
CSA File No.
72877





RED LEAD IS POSITIVE (+)
BLACK LEAD IS NEGATIVE (-)

Performance at Sea Level



All operating specifications measured at nominal operating voltage, free air at sea level

12, 24, and 48 volt performance is identical

Globe Motors Part Number	Nominal Voltage VAC	Voltage Operating Range VDC	Watts	Line Amps	RPM	Acoustic Noise dBA	Airflow (Min.) CFM	Airflow (Min.) Liters per Second
D59-B20A-04W4-000	12	6.0 / 18.0	17.28	1.44	3350	58	240	113.3
D59-B20A-05W4-000	24	12.0 / 30.0	15.84	0.66	3350	58	240	113.3
D59-B20A-07W4-000	48	25.0 / 60.0	15.84	0.33	3350	58	240	113.3

Globe Motors™ DC Series Tubeaxial Cooling Fans Model No. D68T20

6.8" x 2" (173 mm x 51 mm) 240 CFM (113.3 L/Sec.)

Features

- Solid-state brushless motor design provides:
  - Improved performance
  - High efficiency
  - Auto restart
  - Low input power
  - Lower operating voltages
- Precision ball bearing system provides:
  - Longer life
  - Higher temperature extremes
  - Lower noise over time
  - Maximum shock and vibration resistance
- Designed to meet the rigid standards of UL, CSA, and CE.

Accessories
Finger guards

General Specifications

Frame: Die-cast aluminum painted black for moisture and corrosion resistance

Impeller: Reinforced polybutylene plastic (UL94V-0 rating)

Bearings: Precision, life-lubricated ball bearings

Insulation: Class A integral ground system rated @ 248°F (120°C)

Weight: 20.5 ozs. (580 grams)

Operating Temperature Range: 14° to 158°F (-10° to 70°C)

Insulation Resistance: 10 megohms minimum @ 500 VDC

Dielectric Strength: 700 VAC for 3 Seconds

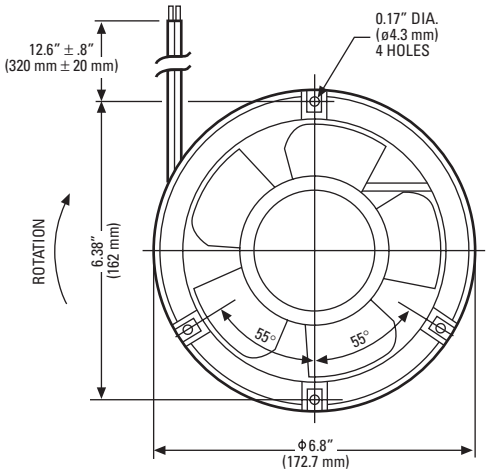
Safety Protection: Electronic locked rotor protected; polarity protected

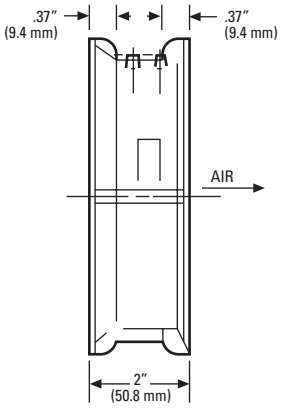
Life Expectancy: 75,000 hours minimum @ 77°F (25°C)

Approvals

UL File No.
E105397

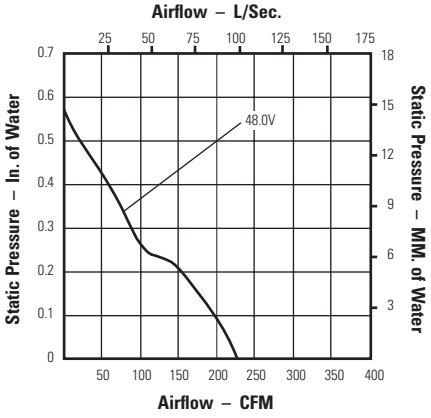
CSA File No.
72877





RED LEAD IS POSITIVE (+)
BLACK LEAD IS NEGATIVE (-)

Performance at Sea Level

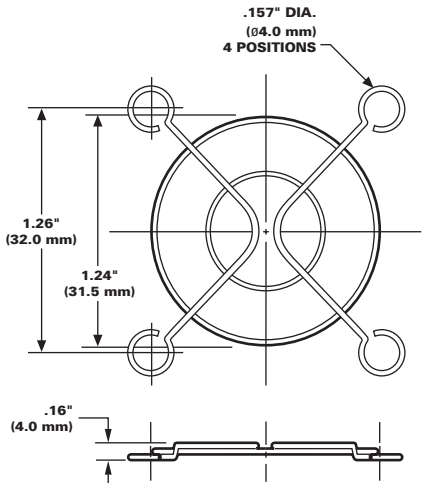


All operating specifications measured at nominal operating voltage, free air at sea level

12, 24, and 48 volt performance is identical

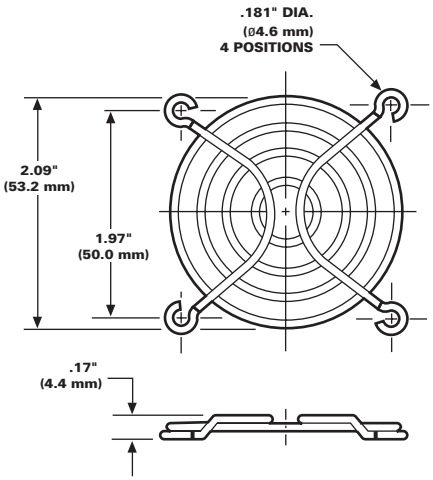
Globe Motors Part Number	Nominal Voltage VAC	Voltage Operating Range VDC	Watts	Line Amps	RPM	Acoustic Noise dBA	Airflow (Min.) CFM	Airflow (Min.) Liters per Second
D68-B20A-04W4-000	12	6.0 / 18.0	17.28	1.44	3350	58	240	113.3
D68-B20A-05W4-000	24	12.0 / 30.0	15.84	0.66	3350	58	240	113.3
D68-B20A-07W4-000	48	25.0 / 60.0	15.84	0.33	3350	58	240	113.3

WFG 16



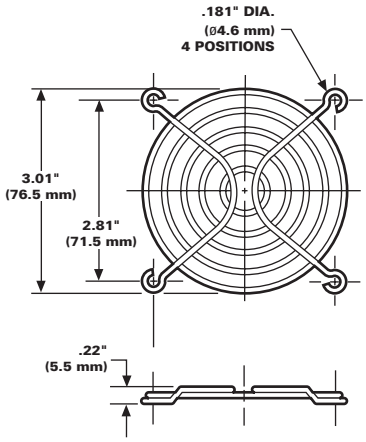
Finger Guard for 1.60" Square Fan
Meets UL .25 Dia. Plug Gage Test
Material: C1010
Finish: Bright Nickel Chrome
Ribs: .06" (1.6 mm) Dia.
Rings: .06" (1.6 mm) Dia.

WFG 24



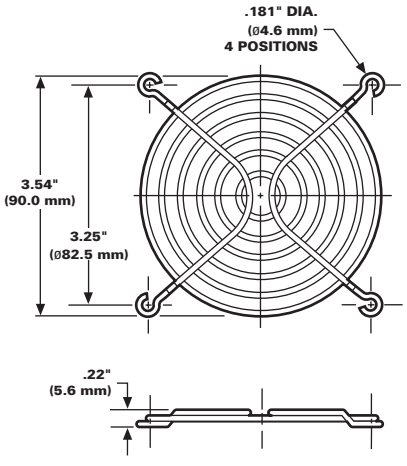
Finger Guard for 2.36" Square Fan
Meets UL .25 Dia. Plug Gage Test
Material: C1010
Finish: Bright Nickel Chrome
Ribs: .06" (1.6 mm) Dia.
Rings: .06" (1.6 mm) Dia.

WFG 31



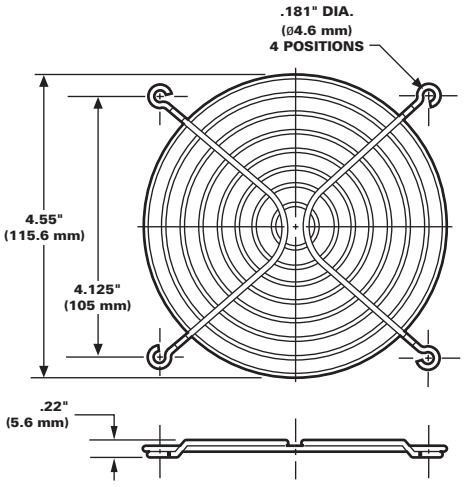
Finger Guard for 3.15" Square Fan
Meets UL .25 Dia. Plug Gage Test
Material: C1010
Finish: Bright Nickel Chrome
Ribs: .07" (1.8 mm) Dia.
Rings: .07" (1.8 mm) Dia.

WFG 36



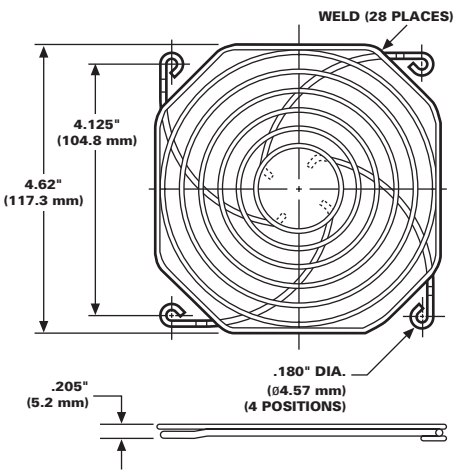
Finger Guard for 3.63" Square Fan
Meets UL .25 Dia. Plug Gage Test
Material: C1010
Finish: Bright Nickel Chrome
Ribs: .07" (1.8 mm) Dia.
Rings: .06" (1.6 mm) Dia.

WFG 47



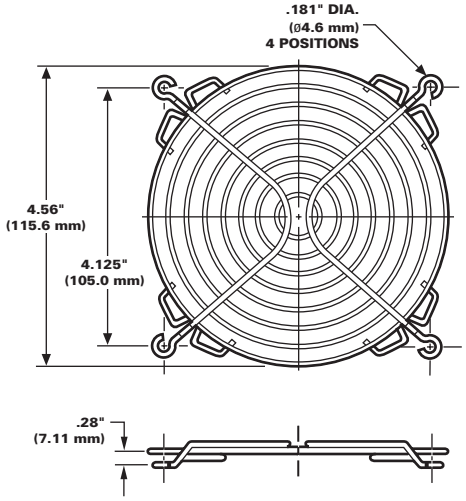
Finger Guard for 4.69" Square Fan
Meets UL .25 Dia. Plug Gage Test
Material: C1010
Finish: Bright Nickel Chrome
Ribs: .07" (1.8 mm) Dia.
Rings: .07" (1.8 mm) Dia.

WFG 47S



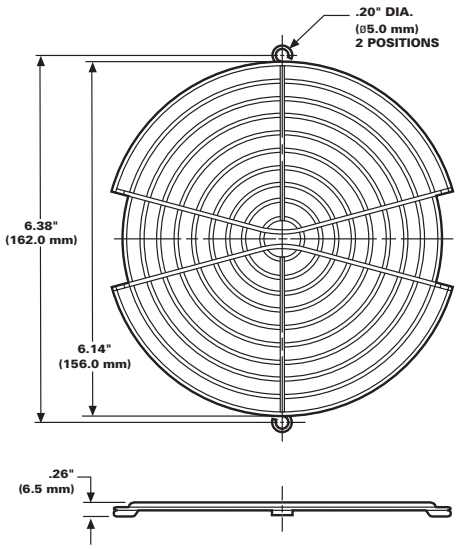
Finger Guard for 4.69" Square Fan
Meets UL .25 Dia. Plug Gage Test
Material: C1010 Wire Basic Steel
Finish: Bright Nickel Chrome
Ribs: .08" (2.0 mm) Dia.
Rings: .06" (1.6 mm) Dia.

WFG 47W



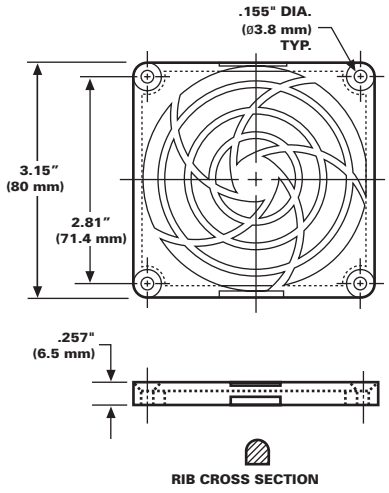
Finger Guard for 4.69" Square Fan
Meets UL .25 Dia. Plug Gage Test
Material: C1010
Finish: Bright Nickel Chrome
Ribs: .08" (2.0 mm) Dia.
Rings: .07" (1.8 mm Dia.

WFG 59



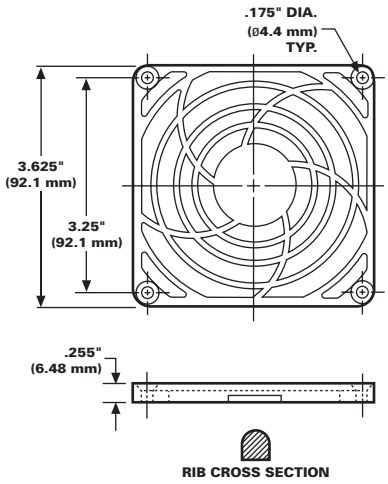
Finger Guard for 5.91" x 6.78" Fan
Meets UL .25 Dia. Plug Gage Test
Material: C1010
Finish: Bright Nickel Chrome
Ribs: .09" (2.3 mm) Dia.
Rings: .07" (1.8 mm) Dia.

PFG 31



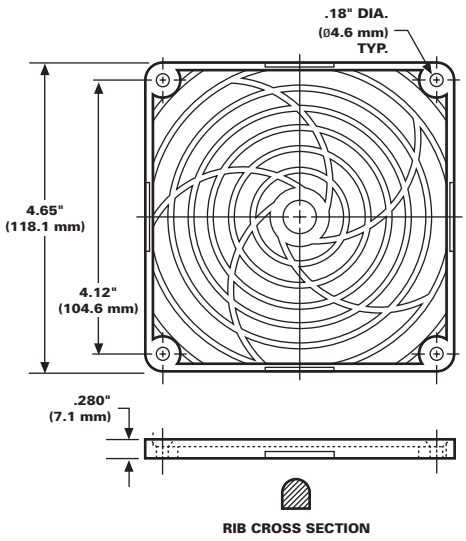
Finger Guard for 3.15" Square Fan
Material: Black Plastic
UL Listed 94V-0

PFG 36



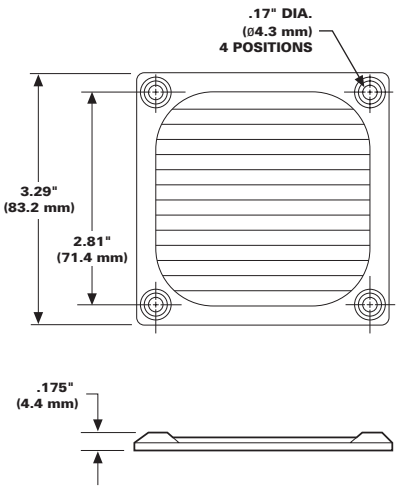
Finger Guard for 3.6" Square Fan
Material: Black Plastic
UL Listed 94V-0

PFG 47



Finger Guard for 4.69" Square Fan
Material: Black Plastic
UL Listed 94V-0

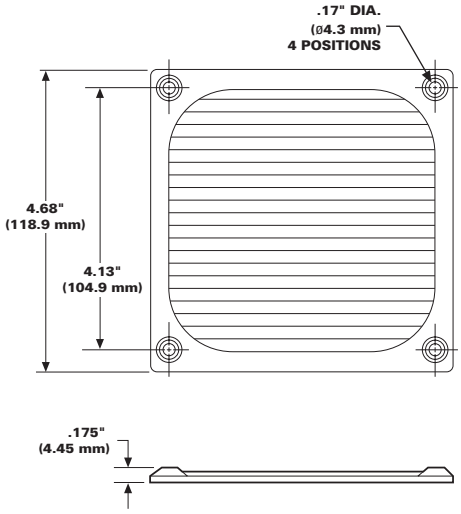
WFS 31M



Screen Guard for 3.15" Square Fan
Material: Aluminum

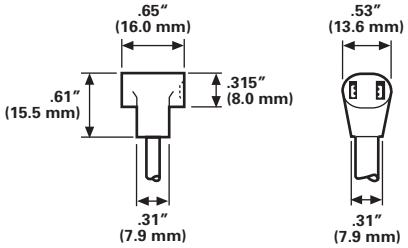
Note: Also available — WFS 36M and WFS 24M

WFS 47M



Screen Guard for 4.69" Square Fan
Material: Aluminum

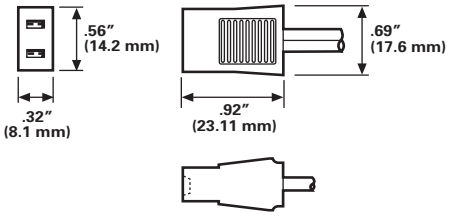
TPC 12/24/36



Power Cord with T-Head Connector in 12", 24", or 36" Length.*

UL E-156798
CSA LR 76679

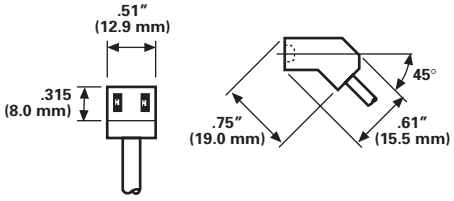
SPC 12/24/36



Power Cord with Straight Connector in 12", 24", or 36" Length.*

UL E-156798
CSA LR 76679

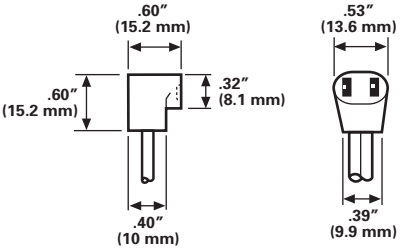
FPC 12/24/36



Power Cord with 45° Connector in 12", 24", or 36" Length.*

UL E-156798
CSA LR 76679

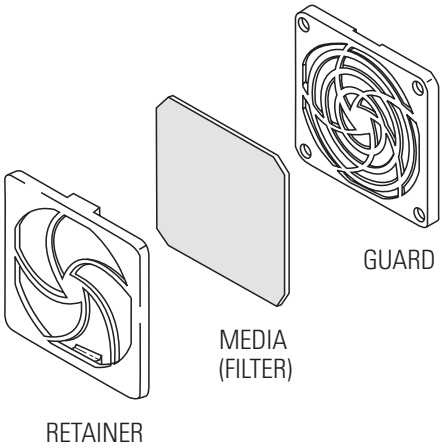
RPC 12/24/36



Power Cord with Right-Angle Connector in 12", 24", or 36" Length.*

UL E-156798
CSA LR 76679

* Other lengths available. Please consult factory.



Filter/Guards for 1.6", 2.36", 3.15", 3.62", and 4.69" Square Fans
Meets UL .25 Dia. Plug Gage Test
Material: Guard and Retainer –
Black Plastic. UL Listed 94V-0
Media – Polyurethane Foam. UL Listed 94HF-1

Filter/Guard Part Numbers	Description	For Globe Fan Series
PFA 1630	30 PPI Filter	D16
PFA 1645	45 PPI Filter	D16
PFA 2430	30 PPI Filter	A24 D24
PFA 2445	45 PPI Filter	A24 D24
PFA 3130	30 PPI Filter	A31 D31
PFA 3145	45 PPI Filter	A31 D31
PFA 3630	30 PPI Filter	A36 D36
PFA 3645	45 PPI Filter	A36 D36
PFA 4730	30 PPI Filter	A47 D47
PFA 4745	45 PPI Filter	A47 D47

Replacement Media Part Numbers	Description	For Filter/Guard Part Numbers
FFM1630	30 PPI Filter Media	PFA1630
FFM1645	45 PPI Filter Media	PFA1645
FFM2430	30 PPI Filter Media	PFA2430
FFM2445	45 PPI Filter Media	PFA2445
FFM3130	30 PPI Filter Media	PFA3130
FFM3145	45 PPI Filter Media	PFA3145
FFM3630	30 PPI Filter Media	PFA3630
FFM3645	45 PPI Filter Media	PFA3645
FFM4730	30 PPI Filter Media	PFA4730
FFM4745	45 PPI Filter Media	PFA4745

Note: PPI = Pores Per Inch

Globe Motors designs and manufactures a broad range of quality military and industrial products to meet your application needs, including:

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- Limited Rotation Torquers
- Linear and Rotary Actuators
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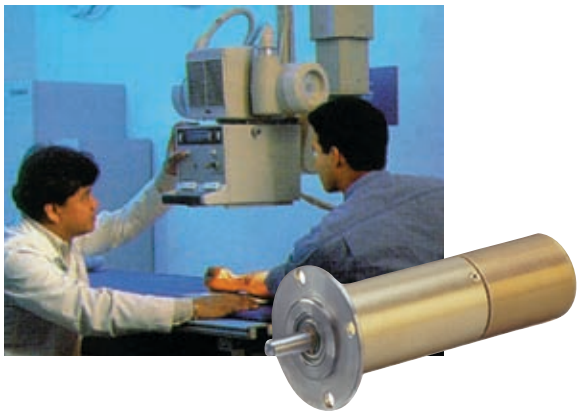

"Sea Sparrow" Systems Missile photo, courtesy of U.S. Navy

Long history of service and support

Whether in telecommunications, business equipment, food service, or electronics, Globe Motors cooling fans meet the most demanding specifications with reliable performance.

For over fifty years, we've provided customers with motors and motorized devices, along with our application assistance, engineering support, and volume production. In addition to our commercial cooling fans, Globe Motors has production facilities in Dothan, Alabama in the United States; Reynosa, Mexico; and Porto, Portugal. They service worldwide automotive, aerospace, and commercial accounts. Experts in Motion Control, Globe Motors' quality process is a never-ending pursuit of excellence.

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- **Delivery from stocking distributors**
- **AC and DC design**
- **Precision ball bearings**
- **Low noise, long life**

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