Alternator Output Curves

Alternator output is dependent on a number of factors: battery condition and capacity, wire size, engine horsepower and engine RPM, battery temperature and alternator temperature. Of these factors, alternator speed and temperatures are the most important. The following chart describes alternator output based on two operating conditions, sweep and saturated dwell (both at 25° C). Test voltages are set at 13.5V (for 12V units) and 27.0V (for 24V units). Engine-to-alternator drive ratios vary by engine, but a conversion factor of 2 is shown here for simplicity.

Engine RPM		500	750	1000	1250	1500	1750	2000	2250	2500	2750	3000
Typical Drive Ratio		2	2	2	2	2	2	2	2	2	2	2
Alternator RPM		1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000
Alternator Model	**Temp**	**Alternator Power Curves by Balmar Model**										
6-Series, 12V 70 Amp Models	Cold	0	20	68	73	77	78	77	77	76	77	77
	Hot	0	15	56	63	65	66	65	65	66	66	65
6-Series, 12V 100 Amp Models	Cold	0	21	83	100	106	110	104	106	108	109	108
	Hot	0	20	70	80	93	93	93	93	94	93	93
6-Series, 12V 120 Amp Models	Cold	0	21	80	116	121	122	125	125	124	124	125
	Hot	0	20	60	98	105	108	109	110	110	108	109
6-Series, 24V 70 Amp Models	Cold	0	6	36	55	68	71	73	76	76	75	76
	Hot	0	3	25	40	50	53	53	56	54	56	55
XT-Series, 12V 170 Amp Models	Cold	0	90	128	159	174	182	189	194	196	197	198
	Hot	0	90	118	134	144	154	157	159	162	164	166
XT-Series, 12V 250 Amp Models	Cold	0	130	203	239	256	271	278	283	288	289	290
	Hot	0	101	142	174	190	197	203	209	212	214	215
XT-Series, 24V 90 Amp Models	Cold	0	18	53	66	78	83	86	89	91	93	94
	Hot	0	18	46	60	70	74	77	80	82	84	85
94/94LY-Series, 12V 210 Amp Models	Cold	0	21	78	103	128	147	162	178	191	208	210
	Hot	0	15	68	82	103	120	131	142	161	170	175
94/94LY-Series, 24V 140 Amp Models	Cold	0	8	15	38	50	70	77	96	124	131	135
	Hot	0	0	10	30	40	58	65	75	92	105	110
95-Series, 12V 210 Amp Model	Cold	0	40	45	100	125	143	155	170	183	190	195
	Hot	0	35	40	80	115	120	135	142	150	158	161
95-Series, 24V 140 Amp Model	Cold	0	7	14	38	55	65	85	100	113	120	133
	Hot	0	5	12	35	50	60	78	95	100	105	110
96-Series, 48V 60 Amp Model	Cold	0	18	43	50	56	59	62	62	62	64	64
	Hot	0	8	23	47	52	54	56	57	58	58	57
96-Series, 48V 100 Amp Model	Cold	0	0	0	23	61	81	93	98	99	107	112
	Hot	0	0	0	22	57	74	84	90	93	97	100
97XD-Series, 12V 240 Amp Model	Cold	0	92	186	227	254	269	276	280	284	287	289
	Hot	0	52	150	181	201	216	223	229	234	238	240
97XD-Series, 24V 120 Amp Model	Cold	0	35	87	113	128	137	141	144	146	146	147
	Hot	0	20	70	90	101	110	114	118	120	121	122
97XD-Series, 24V 190 Amp Model	Cold	0	28	96	142	168	181	187	192	196	199	201
	Hot	0	20	86	126	152	165	172	177	181	184	186
97EHD-Series, 24V 190 Amp Model	Cold	0	40	100	148	168	180	188	193	198	199	198
	Hot	0	22	92	125	145	157	166	170	171	178	178
98-Series, 24V 220 Amp Model	Cold	0	26	96	175	216	239	259	276	288	295	303
	Hot	0	14	54	125	152	170	183	194	203	211	217

Alternator Dimensions

Alternator Model	Case Diameter	Bolt-to-Bolt Tension to Mounting Foot	Overall Height	Case Length Front-to-Back	Overall Length (Standard Pulley)	Dual Foot Saddle Width (Inside)	Rear Foot Width (including Bushing)	Front Foot Width	Front Foot to Center of Inside Sheave	Standard Pulley Diameter	Mounting Foot Bore	Tension Arm Bolt Dia. / Thread Count	Rotor Poles
60 Series	5.35" 136 mm	6.6" 167 mm	7.5" 190 mm	5.08" 129 mm	SV: 6.63" 168 mm	3.28" 83 mm	0.94" 24 mm	0.61" 16 mm	0.5" 13 mm	SV: 2.7" 69 mm	0.39" 10 mm	M8 x 1.25	12
621 Series	5.35" 136 mm	6.6" 167 mm	7.5" 190 mm	5.08" 129 mm	SV: 6.63" 168 mm	N/A	N/A	1.0 / 2.0" 25 / 51 mm	0.5" 13 mm	SV: 2.7" 69 mm	.39" / 0.5" 10 / 13 mm	M8 x 1.25	12
604 Series	5.35" 136 mm	6.6" 167 mm	7.5" 190 mm	5.08" 129 mm	SV: 6.63" 168 mm	4.15" 105 mm	0.94" 24 mm	0.61" 16 mm	0.5" 13 mm	SV: 2.7" 69 mm	0.39" 10 mm	M8 x 1.25	12
XT-170 Series	5.26" 134 mm	6.53" 165 mm	7.43" 188 mm	4.89" 124 mm	DV: 8.00" 203 mm	3.28" 83 mm	.75" 19 mm	0.55" 14 mm	0.62" 16 mm	DV: 2.7" 69 mm	.39" / 0.5" 10 / 13 mm	M8 x 1.25	16
XT-250 Xeries	5.59" 1452mm	6.88" 175 mm	7.81" 198 mm	5.30" 134 mm	DV: 7.15" 181 mm	3.28" 83 mm	.92" 23 mm	0.60" 15 mm	1.58" 40 mm	DV: 2.7" 69 mm	.38" 10 mm	M8 x 1.25	16
XT-DF4-250 Series	5.59" 142 mm	8.07" 205 mm	9.61" 244 mm	5.70" 144 mm	DV: 7.17" 182 mm	4.10" 104 mm	1.00" 25 mm	0.60" 15 mm	1.58" 40 mm	DV: 2.7" 69 mm	0.50" 13 mm	3/8" x 16NC	16
94 Series	6.0" 152 mm	8.0" 203 mm	9.0" 229 mm	5.0" 127 mm	DV: 7.0" 178 mm	N/A	N/A	2.0" 51 mm	1.0" 25 mm	DV: 2.9" 74 mm	0.5" 13 mm	3/8" x 16NC	12
94LY Series	6.0" 152 mm	8.0" 203 mm	9.0" 229 mm	5.0" 127 mm	DV: 7.0" 178 mm	3.28" 83 mm	0.55" 14 mm	0.88" 23 mm	1.0" 25 mm	DV: 2.9" 74 mm	0.5" 13 mm	3/8" x 16NC	12
95 Series	6.0" 152 mm	7.7" 196 mm	9.0" 229 mm	6.5" 165 mm	DV: 8.7" 221 mm	4.1" 104 mm	.75" 19 mm	0.56" 14 mm	1.1" 28 mm	DV: 2.9" 74 mm	0.5" 13 mm	3/8" x 16NC	12
96 Series (48V)	6.0" 152 mm	7.7" 196 mm	9.0" 229 mm	6.5" 165 mm	DV: 8.7" 221 mm	4.1" 104 mm	.75" 19 mm	0.56" 14 mm	1.1" 28 mm	DV: 2.9" 74 mm	0.5" 13 mm	3/8" x 16NC	12
97XD Series (24V)	6.30" 160 mm	8.5" 216 mm	9.17" 233 mm	6.7" 170 mm	K6:8.71" 221 mm	3.98" 101 mm	0.93" 24 mm	0.56" 14 mm	1.77" 44 mm	K6:2.6" 65 mm	0.5" 13 mm	1/2" x 13NC	16
97EHD (190A) Series (24V)	6.5" 165 mm	8.4" 213 mm	9.75" 248 mm	8.125" 207 mm	DV: 10.9" 277 mm	4.1" 104 mm	.75" 19 mm	0.65" 17 mm	1.2" 30 mm	DV: 2.9" 74 mm	0.5" 13 mm	1/2" x 13NC	12
98 Series	8.25" 210 mm	8.25" 210 mm	9.6" 244 mm	8.0" 204 mm	DV: 11.0" 279 mm	4.1" 104 mm	0.75" 19 mm	0.58" 15 mm	1.1" 28 mm	DV: 2.9" 74 mm	0.5" 13 mm	1/2" x 13NC	14

Notes:

In order to ensure quality, Balmar reserves the right to make changes which may affect alternator dimensions or specification. Visit ***www.balmar.net*** for any product updates. Balmar is not liable for any damages or injuries resulting from faulty product installation. See the Balmar Warranty and ordering instructions at the bottom of page 34 of this catalog for more information.

Small case 60-Series Alternators are equipped standard with 10mm bore spacers and bushings. 8mm bore spacers and bushings are available for those units. Call Balmar Customer Service at +1 (360) 435-6100.

621-Series and XT-Series alternators are equipped with a removable bushed 1" spacer for use in 2" installations. 1" mounts feature a .50" bore. 2" mounts feature a .38" bore. Always compare existing alternator & replacement alternator dimensions. Balmar cannot guarantee direct OEM replacement.

Multi-Lite™ Utility Lighting Fixture

Balmar's Multi-Lite™ Fixture can be used in 12VDC, 24VDC, 110VAC or 220VAC applications without the need for difficult rewiring. Housed in a protective UV-resistant cage, the Multi-Lite™ uses a glass fresnel lens for optimal light dispersion.
See page 38 for ordering details.