

Nidec

Power



LSAM Marine Rating Table

Low Voltage Alternators - 4 poles

General features and ratings

LERROY-SOMER[™]

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Technical definitions

1 - CLASSIFICATION SOCIETIES SPECIFICATIONS OVERVIEW

Alternators for marine use have to comply with the specifications on the table below in order to meet customer's request.

		Temperature rise Ambient temperature Class H	Temperature rise Ambient temperature Class F	Short-circuit current	Transient voltage drop	% Overload P.F. = 0.8	Temperature detector	Space heaters	Regulation	Shaft conformity certificate	Factory setting	Spare parts
	LR Lloyd's Register	110°/45°	95°/45°	300% 2 sec.	15% at Pn P.F. = 0.8	50% 30 sec.	Electrical propulsion	R*	± 2.5%	P ≥ 100 kW	P ≥ 100 kW	NS*
	ABS American Bureau of Shipping	120°/45°	100°/45°	300% 2 sec.	15% at 0.6 Pn P.F. = 0.4	50% 30 sec.	P ≥ 500 kVA Electrical propulsion	If weight ≥ 455 kg	± 2.5%	Electrical propulsion	P ≥ 100 kW	Bearings
	ClassNK Nippon Kaiji Kyokai	120°/45°	100°/45°	300% 2 sec.	15% at PN P.F. = 0.8	50% 2 mn	P ≥ 500 kVA Electrical propulsion	P ≥ 500 kW	± 2.5%	P ≥ 100 kW	P > 0 kW	1 bearing for each 4 or less
	BV Bureau Veritas	120°/45°	100°/45°	300% 2 sec.	15% at 0.6 Pn P.F. 0.4	50% 30 sec.	Electrical propulsion	R* Electrical propulsion	± 2.5%	Shaft driven + Propulsion application	P ≥ 100 kW	NS*
	DNV Det Norske Veritas	120°/45°	100°/45°	300% 2 sec.	15% at 0.6 Pn P.F. 0.4	50% 30 sec.	P > 5000 kW	S*	± 2.5%	Shaft driven + Propulsion application	P ≥ 100 kW	1/3 of the diodes + A.V.R.
	PRS Polish Register of Shipping	120°/45°	95°/45°	300% 2 sec.	15% at 0.6 Pn P.F. = 0.4	50% 2 mn	P ≥ 500 kVA Electrical propulsion	Electrical propulsion	± 2.5%	NS*	P ≥ 50 kVA	Bearings (R*)
	KRS Korea Register of Shipping	120°/45°	100°/45°	300% 2 sec.	15% at Pn P.F. = 0.8	50% 2 mn	P ≥ 500 kVA Electrical propulsion	R*	± 2.5%	P ≥ 100 kW	P ≥ 100 kW	Bearings
	RINA Registro Italiano Navale	120°/45°	100°/45°	300% 2 sec.	15% at 0.6 Pn P.F. = 0.4	50% 30 sec.	Electrical propulsion	Electrical propulsion	± 2.5%	Shaft driven + Propulsion application	P ≥ 100 kVA	NS*
	RS Russian Maritime Register of Shipping	120°/45°	95°/45°	300% 2 sec.	15% at 0.6 Pn P.F. = 0.4	50% 2 mn	Electrical propulsion	R*	± 2.5%	NS*	P > 0 kW	NS*
	CCS China Classification Society	120°/45°	100°/45°	300% 2 sec.	15% at 0.6 Pn P.F. = 0.4	50% 2 mn.	-	-	± 2.5%	-	-	-
	TL Turkish Lloyd's	120°/45°	100°/45°	300% 2 sec.	15% at 0.6 Pn P.F. = 0.4	50% 2 mn	P ≥ 500 kVA Electrical propulsion	P ≥ 500 kW	± 2.5%	Shaft driven + Propulsion application	P ≥ 100 kW	NS*

*: NS: not specified - R: recommended - S: specified

Notes:

Alternators are proposed for secondary use. All demands for propulsion must be submitted for consultation. Generators intended for propulsion are subjected to case by case approval and shaft certification type 3.2 by classification societies requested. This list is not exhaustive and may be revised to include other classification societies. Whatever Class H or F, all the other specifications remain the same.

Table is applicable to standard low voltage alternators up to 5000 kW electrical power.

Consult the societies rules for all other products (e.g. heat exchangers, medium voltage, electrical propulsion, ...).

Technical definitions

2 - GENERAL FEATURES

2.1 - Standards

The Leroy-Somer™ LSAM Marine alternators meet all key international standards and regulations such as IEC 60034, NEMA MG 1.32-33, ISO 8528-3, CSA C22.2 n°100-14, UL 1446, UL 1004-1 and UL 1004-4.

EC, UKCA, CMIM, CSA, UL 1446, UL recognized and UL listed declarations and certifications are available for the LSAM Marine. The standards IEC 61000-6-2, IEC 61000-6-3, IEC 61000-6-4, VDE 0875G, VDE 0875N and EN 55011 allow compliance with group 1 class A for the European zone.

The Leroy-Somer™ LSAM Marine alternators are designed, manufactured and marketed in an ISO 9001 and ISO 14001 quality assurance environment.

2.2 - Electrical features

- **Excitation systems:** Nidec Power propose a large choice of excitation systems, depending on the customer needs: **AREP** or **PMG** system, with a short-circuit capacity of 3 times the nominal current for 10 seconds
- **Voltage regulators:** The 4-pole LSAM alternators are fitted with reliable and performant digital AVRs, designed and manufactured by Nidec Power. Available excitation systems depending on selected alternator and are indicated in nominal rating tables.
- **Frequency:** LSAM alternators may operate either 50 or 60 Hz. The standard winding (code 6) is suitable both for 50 and 60 Hz. For dedicated windings, see specific table or consult factory.
- **Power factor P.F.:** LSAM alternators are designed to operate between 0.8 and 1 power factor. A derating is necessary below 0.8 power factor (see derating chart). Consult us for other PF needs.
- **Waveform:** Total harmonic distortion (THD), at no load or linear load is less than 5% according to IEC. TIF/Telephone influence factor according to NEMA is less than 50.
- **Transient features:** Transient voltage dip for rated step load at 0.8 power factor is less than 18 %. Recovery time for a 20 % transient voltage dip is less than 0.5 s.
- **Parallel operation:** All LSAM alternators can operate in parallel with other alternators (2/3 pitch winding) with AREP/PMG (except LSAM 40 with AREP only), or with the mains, when they are equipped with the appropriate devices (AVR, current transformer...).
- **Overload acceptance:** LSAM alternators can be overloaded according to NEMA.

2.3 - Mechanical features

- **Mechanical arrangement:** LSAM alternators can be provided in single bearing or two bearing configurations. A large range of engine adaptors and coupling discs are available to fit the major engines.
- **Enclosure:** Standard enclosure is IP 23. Other enclosures such as IP 44, IP 55 can be offered on request (possible derating).
- **Bearings:** Sealed for life bearings up to LSAM 50.2 (regreasable bearing option from LSAM 46.3), regreasable bearings from LSAM 52.3.
- **Balancing:** All rotors are dynamically balanced according to ISO 1940 and IEC 60034-14. Two bearing rotors are balanced with a half key.
- **Direction of rotation:** LSAM alternators can operate in both directions (5% derating for anticlockwise running for LSAM 47.3, LSAM 49.3 and LSAM 50.2). LSAM 52.3 alternators are designed to have only one direction of rotation, which has to be defined upon ordering.
- **Overspeed:** The maximum overspeed is 2250 R.P.M. (1.25 times the 60 Hz rated speed).
- **Insulation and protection:** LSAM alternators are class H insulated. The standard winding protection can accept up to 95 % relative humidity and is suitable for indoors marine applications. Specific added coatings can be proposed for harsh environments. Refer to technical note TN12 (ref. 5338).
- **Terminal box and connectors:** LSAM alternators are fitted with a large terminal box which facilitates access to the AVR and allows easy access to the connections. Current transformers and other optional modules can be fitted within the terminal box.
- **Mechanical structure:** Steel frame. Aluminum, cast iron or steel housings and flanges depending on models.
- **Painting:** LSAM generators are supplied painted. The color can be chosen by the customer. For more details on the paint specification LSAM 52, refer to technical note TN18 (ref. 5727).

Technical definitions

3 - ACCESSORIES AND OPTIONS

- Digital AVR D550 (includes three phase sensing and paralleling with the grid)
- EMI suppression module R791 for other areas than EC
- PMG (from LSAM 42.3)
- Engine adaptors for two bearing alternators
- Air inlet filters (5% derating)
- Air inlet or outlet filters with IP44 (10% derating) (8% derating for LSAM 52.3)
- Specific stator protections for harsh environments
- Specific painting
- Greasable bearings for LSAM 46.3, LSAM 47.3, LSAM 49.3 and LSAM 50.2
- Thermal sensors for bearings
- Thermal sensors for stator windings
- Anti condensation heaters (retrofitable)
- Remote voltage potentiometers
- Current transformers for paralleling with other alternators
- First emergency kits (AVR + diodes)

4 - PRODUCT DESCRIPTION

The machine name is defined according to various criteria (see below).

Example of description for:

LSAM 49.3 M6 C6S/4

- LSAM: Range
- 49.3: Frame size
- M6: Core length
- C: Excitation system (C: AREP / J: SHUNT or SHUNT + PMG)
- 6S/4: Winding number / number of poles

5 - RATING BY MARINE SPECIFICATION FAMILY

TEMPERATURE RISE: Class H - 110°/45°

AREP*			1500 R.P.M. - 50 Hz - P.F. = 0.8				1800 R.P.M. - 60 Hz - P.F. = 0.8			
			380V ... 415V		380 V		440V ... 480V		450 V	
4 P - 3 Ph + Neutral			kVA	kWe	Effic.**	kWm**	kVA	kWe	Effic.**	kWm**
LSAM	40 VS1	C6/4	7	5.6	84.3	6.6	8	6.4	84.8	7.5
	40 VS2	C6/4	10	8	85.6	9.3	11.5	9.2	86.2	10.7
	40 S3	C6/4	13	10.4	85.8	12.1	15	12	86.6	13.9
	40 S4	C6/4	17	13.6	86.1	15.8	19	15.2	87.2	17.4
	40 M5	C6/4	20	16	87	18.4	23	18.4	87.9	20.9
LSAM	42.3 VS2	C6/4	22.4	17.9	88.5	20.2	25.7	20.6	89.4	23
	42.3 VS3	C6/4	27	21.6	89	24.3	31	24.8	89.9	27.6
	42.3 S4	C6/4	35	28	90	31.1	40.5	32.4	90.8	35.7
	42.3 S5	C6/4	37	29.6	89.7	33	42	33.6	90.7	37
	42.3 M7	C6/4	41	32.8	90.1	36.4	47	37.6	90.9	41.4
	42.3 M8	C6/4	46	36.8	90.3	40.8	54	43.2	91	47.5
	42.3 L9	C6/4	53	42.4	90.8	46.7	60	48	91.6	52
	42.3 L10	C6/4	60	48	91.6	52	70	56	92.2	61
LSAM	44.3 S2	C6/4	70	56	92.2	61	88	70	92.4	76
	44.3 S3	C6/4	80	64	91.9	70	100	80	92.3	87
	44.3 S4	C6/4	90	72	92.6	78	113	90	92.9	97
	44.3 S5	C6/4	100	80	92.3	87	125	100	92.7	108
	44.3 M6	C6S/4	118	94	92.7	101	141	113	93.2	121
	44.3 M8	C6/4	132	106	93	114	157	126	93.5	135
	44.3 L10	C6S/4	147	118	93.3	126	177	142	93.8	151
	44.3 VL13	C6/4	175	140	93.3	150	210	168	93.6	179
	44.3 VL14	C6/4	186	149	93.1	160	223	178	93.5	190
	44.3 VL14	C6/4	212	170	93	183	252	202	93.2	216
LSAM	46.3 S4	C6/4	223	178	92.8	192	267	214	93.1	229
	46.3 M7	C6S/4	250	200	93.5	214	300	240	93.6	256
	46.3 M8	C6S/4	275	220	93.2	236	325	260	93.5	278
	46.3 L10	C6/4	300	240	94.1	255	365	292	94.2	309
	46.3 L11	C6/4	330	264	93.9	281	380	304	94.2	323
	46.3 L11	C6/4	355	284	93.6	303	450	360	93.7	384
	46.3 L11	C6/4	400	320	94.2	340	490	392	94.3	416
LSAM	47.3 VS3	C6/4	425	340	94.7	359	530	424	94.8	447
	47.3 S4	C6S/4	476	381	94.8	402	602	482	94.8	508
	47.3 M7	C6/4	500	400	94.6	423	620	496	94.7	524
	47.3 M8	C6/4	550	440	95.2	462	685	548	95.3	575
	47.3 L9	C6S/4	610	488	95.2	513	723	578	95.4	606
	47.3 L10	C6S/4	705	564	94.6	596	840	672	94.7	710
	47.3 L10	C6S/4	800	640	94.7	676	940	752	94.8	793
	47.3 L10	C6S/4	910	728	95.3	764	1045	836	95.4	876
LSAM	49.3 M6	C6S/4	935	748	95.4	784	1126	901	95.4	944
	49.3 L10	C6S/4	1140	912	95	960	1380	1104	95	1162
	50.2 M6	C6S/4	1255	1004	95.2	1055	1480	1184	95.1	1245
	50.2 L7	C6S/4	1355	1084	95.4	1136	1600	1280	95.4	1342
LSAM	50.2 L8	C6S/4	1495	1196	95.7	1250	1760	1408	95.5	1474
	50.2 VL10	C6S/4	1650	1320	96.2	1372	-	-	-	-
	52.3 S6	C6S/4	1950	1560	96.2	1622	1950	1560	96.5	1617
	52.3 S7	C6S/4	2165	1732	96.3	1799	2325	1860	96.5	1928
LSAM	52.3 L9	C6S/4	2350	1880	96.3	1952	2615	2092	96.5	2168
	52.3 L12	C6S/4								

kWe: electrical rating available from the alternator. kWm: necessary mechanical rating from the engine.

* Optional: SHUNT + PMG available.

** Efficiency and mechanical power (kWm) are calculated for 380V - 50Hz and 450V - 60Hz.

TEMPERATURE RISE: Class F - 95°/45°

AREP*			1500 R.P.M. - 50 Hz - P.F. = 0.8				1800 R.P.M. - 60 Hz - P.F. = 0.8			
			380V ... 415V		380 V		440V ... 480V		450 V	
4 P - 3 Ph + Neutral			kVA	kWe	Effic.**	kWm**	kVA	kWe	Effic.**	kWm**
LSAM	40 VS1	C6/4	7	5.6	84.3	6.6	8	6.4	84.8	7.5
	40 VS2	C6/4	10	8	85.6	9.3	11.5	9.2	86.2	10.7
	40 S3	C6/4	13	10.4	85.8	12.1	15	12	86.6	13.9
	40 S4	C6/4	16	12.8	86.3	14.8	19	15.2	87.2	17.4
	40 M5	C6/4	18.5	14.8	87.3	17	21.5	17.2	88.1	19.5
LSAM	42.3 VS1	C6/4	20	16	88.3	18.1	23	18.4	89.1	20.7
	42.3 VS2	C6/4	22.5	18	88.5	20.3	26	20.8	89.3	23.3
	42.3 VS3	C6/4	27	21.6	89	24.3	31	24.8	89.9	27.6
	42.3 S4	C6/4	32	25.6	90.3	28.3	39	31.2	90.9	34.3
	42.3 S5	C6/4	35	28	90	31.1	41.5	33.2	90.7	36.6
	42.3 M7	C6/4	38	30.4	90.4	33.6	45	36	91.1	39.5
	42.3 M8	C6/4	42	33.6	90.6	37.1	50	40	91.3	43.8
	42.3 L9	C6/4	47.5	38	91.2	41.7	54.5	43.6	91.8	47.5
LSAM	44.3 S2	C6/4	64	51	92.3	55	80	64	92.5	69
	44.3 S3	C6/4	73	58	92.1	63	91	73	92.4	79
	44.3 S4	C6/4	82	66	92.7	71	102	82	93	88
	44.3 S5	C6/4	91	73	92.5	79	114	91	92.9	98
	44.3 M6	C6S/4	108	86	92.9	93	128	102	93.3	109
	44.3 M8	C6/4	120	96	93.3	103	142	114	93.7	122
	44.3 L10	C6S/4	135	108	93.5	116	161	129	93.9	137
	44.3 VL13	C6/4	156	125	93.6	134	190	152	93.9	162
	44.3 VL14	C6/4	170	136	93.4	146	200	160	93.8	171
	LSAM	46.3 S4	C6/4	185	148	93.3	159	225	180	93.4
46.3 S5		C6/4	200	160	93.1	172	240	192	93.3	206
46.3 M7		C6S/4	225	180	93.7	192	275	220	93.8	235
46.3 M8		C6S/4	250	200	93.5	214	300	240	93.6	256
46.3 L10		C6/4	275	220	94.3	233	325	260	94.4	275
46.3 L11		C6/4	299	239	94.1	254	347	278	94.3	295
LSAM	47.3 VS3	C6/4	325	260	93.9	277	410	328	94	349
	47.3 S4	C6S/4	375	300	94.4	318	455	364	94.5	385
	47.3 S5	C6/4	415	332	94.7	351	480	384	94.9	405
	47.3 M7	C6/4	455	364	94.9	384	545	436	95	459
	47.3 M8	C6/4	480	384	94.7	405	560	448	95	472
	47.3 L9	C6S/4	525	420	95.3	441	610	488	95.4	512
	47.3 L10	C6S/4	565	452	95.4	474	681	545	95.5	571
LSAM	49.3 M6	C6S/4	635	508	94.8	536	760	608	94.8	641
	49.3 M8	C6S/4	730	584	94.9	615	850	680	94.9	717
	49.3 L9	C6S/4	820	656	95.5	687	940	752	95.5	787
	49.3 L10	C6S/4	851	681	95.5	713	1020	816	95.5	854
LSAM	50.2 M6	C6S/4	1055	844	95.2	887	1200	960	95.1	1009
	50.2 L7	C6S/4	1145	916	95.4	960	1285	1028	95.3	1079
	50.2 L8	C6S/4	1230	984	95.6	1029	1400	1120	95.5	1173
	50.2 VL10	C6S/4	1365	1092	95.8	1140	1545	1236	95.7	1292
LSAM	52.3 S6	C6S/4	1630	1304	96.2	1356	1650	1320	96.5	1368
	52.3 S7	C6S/4	1860	1488	96.3	1550	2050	1640	96.5	1700
	52.3 L9	C6S/4	1924	1539	96.4	1597	2116	1693	96.5	1754
	52.3 L12	C6S/4	2087	1669	96.4	1732	2323	1858	96.6	1924

kWe: electrical rating available from the alternator. kWm: necessary mechanical rating from the engine.

* Optional: SHUNT + PMG available.

** Efficiency and mechanical power (kWm) are calculated for 380V - 50Hz and 450V - 60Hz.

TEMPERATURE RISE: Class H - 120°/45°

AREP*			1500 R.P.M. - 50 Hz - P.F. = 0.8				1800 R.P.M. - 60 Hz - P.F. = 0.8			
			380V ... 415V		380 V		440V ... 480V		450 V	
4 P - 3 Ph + Neutral			kVA	kWe	Effic.**	kWm**	kVA	kWe	Effic.**	kWm**
LSAM	40 VS1	C6/4	7	5.6	84.3	6.6	8	6.4	84.8	7.5
	40 VS2	C6/4	10	8	85.6	9.3	11.5	9.2	86.2	10.7
	40 S3	C6/4	13	10.4	85.8	12.1	15	12	86.6	13.9
	40 S4	C6/4	17	13.6	86.1	15.8	19	15.2	87.2	17.4
	40 M5	C6/4	20	16	87	18.4	23	18.4	87.9	20.9
LSAM	42.3 VS2	C6/4	22.4	17.9	88.5	20.2	25	20	89.4	22.4
	42.3 VS3	C6/4	27	21.6	89	24.3	31	24.8	89.9	27.6
	42.3 S4	C6/4	35	28	90	31.1	40.5	32.4	90.8	35.7
	42.3 S5	C6/4	37	29.6	89.7	33	42.5	34	90.6	37.5
	42.3 M7	C6/4	41	32.8	90.1	36.4	47.5	38	90.9	41.8
	42.3 M8	C6/4	48	38.4	90.1	42.6	55.5	44.4	90.9	48.8
	42.3 L9	C6/4	55	44	90.6	48.6	60	48	91.6	52
	LSAM	44.3 S2	C6/4	70	56	92.2	61	88	70	92.4
	44.3 S3	C6/4	80	64	91.9	70	100	80	92.3	87
	44.3 S4	C6/4	90	72	92.6	78	113	90	92.9	97
	44.3 S5	C6/4	100	80	92.3	87	125	100	92.7	108
	44.3 M6	C6S/4	123	98	92.5	106	147	118	93.1	127
	44.3 M8	C6/4	135	108	92.9	116	164	131	93.4	140
	44.3 L10	C6S/4	150	120	93.3	129	184	147	93.7	157
	44.3 VL13	C6/4	180	144	93.2	155	210	168	93.6	179
	44.3 VL14	C6/4	195	156	92.9	168	230	184	93.4	197
LSAM	46.3 S4	C6/4	220	176	92.9	189	261	209	93.1	224
	46.3 S5	C6/4	231	185	92.7	200	275	220	93	237
	46.3 M7	C6S/4	261	209	93.4	224	307	246	93.6	263
	46.3 M8	C6S/4	275	220	93.2	236	324	259	93.5	277
	46.3 L10	C6/4	300	240	94.1	255	345	276	94.3	293
	46.3 L11	C6/4	332	266	93.9	283	388	310	94.1	329
LSAM	47.3 VS3	C6/4	365	292	93.5	312	450	360	93.7	384
	47.3 S4	C6S/4	400	320	94.2	340	500	400	94.3	424
	47.3 S5	C6/4	450	360	94.6	381	531	425	94.8	448
	47.3 M7	C6/4	500	400	94.7	422	625	500	94.7	528
	47.3 M8	C6/4	530	424	94.4	449	630	504	94.7	532
	47.3 L9	C6S/4	590	472	95.1	496	675	540	95.3	567
	47.3 L10	C6S/4	610	488	95.2	513	720	576	95.4	604
	LSAM	49.3 M6	C6S/4	730	584	94.6	617	840	672	94.7
	49.3 M8	C6S/4	810	648	94.6	685	940	752	94.8	793
	49.3 L9	C6S/4	910	728	95.3	764	1045	836	95.4	876
	49.3 L10	C6S/4	970	776	95.3	814	1146	917	95.4	961
LSAM	50.2 M6	C6S/4	1195	956	94.9	1007	1420	1136	94.9	1197
	50.2 L7	C6S/4	1290	1032	95.2	1084	1550	1240	95.1	1304
	50.2 L8	C6S/4	1400	1120	95.4	1174	1685	1348	95.3	1414
	50.2 VL10	C6S/4	1540	1232	95.6	1289	1840	1472	95.5	1541
LSAM	52.3 S6	C6S/4	1650	1320	96.2	1372	-	-	-	-
	52.3 S7	C6S/4	1950	1560	96.2	1622	1950	1560	96.5	1617
	52.3 L9	C6S/4	2165	1732	96.3	1799	2325	1860	96.5	1928
	52.3 L12	C6S/4	2350	1880	96.3	1952	2615	2092	96.5	2168

kWe: electrical rating available from the alternator. kWm: necessary mechanical rating from the engine.

* Optional: SHUNT + PMG available.

** Efficiency and mechanical power (kWm) are calculated for 380V - 50Hz and 450V - 60Hz.

TEMPERATURE RISE: Class F - 100°/45°

AREP*			1500 R.P.M. - 50 Hz - P.F. = 0.8				1800 R.P.M. - 60 Hz - P.F. = 0.8			
			380V ... 415V		380 V		440V ... 480V		450 V	
4 P - 3 Ph + Neutral			kVA	kWe	Effic.**	kWm**	kVA	kWe	Effic.**	kWm**
LSAM	40 VS1	C6/4	7	5.6	84.3	6.6	8	6.4	84.8	7.5
	40 VS2	C6/4	10	8	85.6	9.3	11.5	9.2	86.2	10.7
	40 S3	C6/4	13	10.4	85.8	12.1	15	12	86.6	13.9
	40 S4	C6/4	16	12.8	86.3	14.8	19	15.2	87.2	17.4
	40 M5	C6/4	18.5	14.8	87.3	17	21.5	17.2	88.1	19.5
LSAM	42.3 VS1	C6/4	20	16	88.3	18.1	24	19.2	89	21.6
	42.3 VS2	C6/4	22.5	18	88.5	20.3	25.5	20.4	89.4	22.8
	42.3 VS3	C6/4	27	21.6	89	24.3	31	24.8	89.9	27.6
	42.3 S4	C6/4	32	25.6	90.3	28.3	39	31.2	90.9	34.3
	42.3 S5	C6/4	36.5	29.2	89.8	32.5	42	33.6	90.7	37
	42.3 M7	C6/4	40	32	90.2	35.5	47	37.6	90.9	41.4
	42.3 M8	C6/4	44	35.2	90.5	38.9	52	41.6	91.1	45.7
	42.3 L9	C6/4	50.5	40.4	91	44.4	54.5	43.6	91.8	47.5
	LSAM	44.3 S2	C6/4	64	51	92.3	55	80	64	92.5
44.3 S3		C6/4	73	58	92.1	63	91	73	92.4	79
44.3 S4		C6/4	82	66	92.7	71	102	82	93	88
44.3 S5		C6/4	91	73	92.5	79	114	91	92.9	98
44.3 M6		C6S/4	113	90	92.8	97	135	108	93.3	116
44.3 M8		C6/4	123	98	93.2	105	150	120	93.6	128
44.3 L10		C6S/4	137	110	93.5	118	169	135	93.8	144
44.3 VL13		C6/4	164	131	93.5	140	191	153	93.9	163
44.3 VL14		C6/4	180	144	93.2	155	210	168	93.6	179
LSAM		46.3 S4	C6/4	202	162	93.1	174	237	190	93.3
	46.3 S5	C6/4	215	172	92.9	185	250	200	93.2	215
	46.3 M7	C6S/4	240	192	93.6	205	280	224	93.7	239
	46.3 M8	C6S/4	253	202	93.5	216	295	236	93.7	252
	46.3 L10	C6/4	276	221	94.2	235	314	251	94.4	266
	46.3 L11	C6/4	303	242	94.1	257	353	282	94.3	299
LSAM	47.3 VS3	C6/4	330	264	93.9	281	410	328	94	349
	47.3 S4	C6S/4	375	300	94.4	318	455	364	94.5	385
	47.3 S5	C6/4	400	320	94.8	338	480	384	94.9	405
	47.3 M7	C6/4	450	360	94.9	379	561	449	95	473
	47.3 M8	C6/4	475	380	94.7	401	587	470	94.8	496
	47.3 L9	C6S/4	525	420	95.3	441	600	480	95.4	503
	47.3 L10	C6S/4	595	476	95.3	499	681	545	95.5	571
LSAM	49.3 M6	C6S/4	660	528	94.8	557	760	608	94.8	641
	49.3 M8	C6S/4	760	608	94.8	641	850	680	94.9	717
	49.3 L9	C6S/4	820	656	95.5	687	940	752	95.5	787
	49.3 L10	C6S/4	895	716	95.4	751	1031	825	95.5	864
LSAM	50.2 M6	C6S/4	1070	856	95.2	899	1275	1020	95.1	1073
	50.2 L7	C6S/4	1165	932	95.4	977	1360	1088	95.3	1142
	50.2 L8	C6S/4	1255	1004	95.6	1050	1485	1188	95.4	1245
LSAM	50.2 VL10	C6S/4	1380	1104	95.8	1152	1650	1320	95.7	1379
	52.3 S6	C6S/4	1650	1320	96.2	1372	-	-	-	-
	52.3 S7	C6S/4	1937	1550	96.2	1611	1950	1560	96.5	1617
	52.3 L9	C6S/4	2085	1668	96.4	1730	2286	1828	96.5	1895
	52.3 L12	C6S/4	2255	1804	96.4	1871	2510	2008	96.6	2079

kWe: electrical rating available from the alternator. kWm: necessary mechanical rating from the engine.

* Optional: SHUNT + PMG available.

** Efficiency and mechanical power (kWm) are calculated for 380V - 50Hz and 450V - 60Hz.

BV – DNV – RINA – ABS – CCS – TL – PRS – RS

Class H

10 to 2350 kVA - 50 Hz / 11.5 to 2615 kVA - 60 Hz



TEMPERATURE RISE: Class H - 120°/45°

AREP*	1500 R.P.M. - 50 Hz - P.F. = 0.8				1800 R.P.M. - 60 Hz - P.F. = 0.8			
	380V ... 415V		380 V		440V ... 480V		450 V	
	kVA	kWe	Effic.**	kWm**	kVA	kWe	Effic.**	kWm**
4 P - 3 Ph + Neutral								
LSAM 40 VS1 C6/4	10	8	83.4	9.6	11.5	9.2	84.5	10.9
40 VS2 C6/4	12.5	10	84.8	11.8	14.5	11.6	85.8	13.5
40 S3 C6/4	15	12	85.2	14.1	17.5	14	86.2	16.2
40 S4 C6/4	17.5	14	86	16.3	20	16	87	18.4
40 M5 C6/4	20	16	87	18.4	23	18.4	87.9	20.9
LSAM 42.3 VS1 C6/4	25	20	87.2	22.9	30	24	88.2	27.2
42.3 VS2 C6/4	27	21.6	87.5	24.7	32.5	26	88.5	29.4
42.3 VS3 C6/4	31	24.8	88.2	28.1	37	29.6	89.2	33.2
42.3 S4 C6/4	35	28	90	31.1	43	34.4	90.6	38
42.3 S5 C6/4	39.5	31.6	89.4	35.3	47	37.6	90.2	41.7
42.3 M7 C6/4	43	34.4	89.8	38.3	51.5	41.2	90.6	45.5
42.3 M8 C6/4	48	38.4	90.1	42.6	56.5	45.2	90.9	49.7
42.3 L9 C6/4	55	44	90.6	48.6	60	48	91.6	52
LSAM 44.3 S2 C6/4	70	56	92.2	61	88	70	92.4	76
44.3 S3 C6/4	80	64	91.9	70	100	80	92.3	87
44.3 S4 C6/4	90	72	92.6	78	113	90	92.9	97
44.3 S5 C6/4	100	80	92.3	87	125	100	92.7	108
44.3 M6 C6S/4	123	98	92.5	106	147	118	93.1	127
44.3 M8 C6/4	135	108	92.9	116	164	131	93.4	140
44.3 L10 C6S/4	150	120	93.3	129	184	147	93.7	157
44.3 VL13 C6/4	180	144	93.2	155	210	168	93.6	179
44.3 VL14 C6/4	195	156	92.9	168	230	184	93.4	197
LSAM 46.3 S4 C6/4	220	176	92.9	189	261	209	93.1	224
46.3 S5 C6/4	231	185	92.7	200	275	220	93	237
46.3 M7 C6S/4	261	209	93.4	224	307	246	93.6	263
46.3 M8 C6S/4	275	220	93.2	236	324	259	93.5	277
46.3 L10 C6/4	300	240	94.1	255	345	276	94.3	293
46.3 L11 C6/4	332	266	93.9	283	388	310	94.1	329
LSAM 47.3 VS3 C6/4	365	292	93.5	312	450	360	93.7	384
47.3 S4 C6S/4	400	320	94.2	340	500	400	94.3	424
47.3 S5 C6/4	450	360	94.6	381	530	424	94.8	447
47.3 M7 C6/4	500	400	94.7	422	625	500	94.7	528
47.3 M8 C6/4	530	424	94.4	449	630	504	94.7	532
47.3 L9 C6S/4	590	472	95.1	496	675	540	95.3	567
47.3 L10 C6S/4	610	488	95.2	513	755	604	95.3	634
LSAM 49.3 M6 C6S/4	730	584	94.6	617	840	672	94.7	710
49.3 M8 C6S/4	820	656	94.6	693	940	752	94.8	793
49.3 L9 C6S/4	910	728	95.3	764	1045	836	95.4	876
49.3 L10 C6S/4	971	777	95.3	815	1146	917	95.4	961
LSAM 50.2 M6 C6S/4	1195	956	94.9	1007	1420	1136	94.9	1197
50.2 L7 C6S/4	1290	1032	95.2	1084	1550	1240	95.1	1304
50.2 L8 C6S/4	1400	1120	95.4	1174	1685	1348	95.3	1414
50.2 VL10 C6S/4	1540	1232	95.6	1289	1840	1472	95.5	1541
LSAM 52.3 S6 C6S/4	1650	1320	96.2	1372	-	-	-	-
52.3 S7 C6S/4	1950	1560	96.2	1622	1950	1560	96.5	1617
52.3 L9 C6S/4	2165	1732	96.3	1799	2325	1860	96.5	1928
52.3 L12 C6S/4	2350	1880	96.3	1952	2615	2092	96.5	2168

kWe: electrical rating available from the alternator. kWm: necessary mechanical rating from the engine.

* Optional: SHUNT + PMG available.

** Efficiency and mechanical power (kWm) are calculated for 380V - 50Hz and 450V - 60Hz.

BV – DNV – RINA – ABS – CCS – TL

Class F

9 to 2255 kVA - 50 Hz / 10.5 to 2510 kVA - 60 Hz



TEMPERATURE RISE: Class F - 100°/45°

AREP*			1500 R.P.M. - 50 Hz - P.F. = 0.8				1800 R.P.M. - 60 Hz - P.F. = 0.8			
			380V ... 415V		380 V		440V ... 480V		450 V	
4 P - 3 Ph + Neutral			kVA	kWe	Effic.**	kWm**	kVA	kWe	Effic.**	kWm**
LSAM	40 VS1	C6/4	9	7.2	83.9	8.6	10.5	8.4	84.8	9.9
	40 VS2	C6/4	11.5	9.2	85.2	10.8	13.5	10.8	86	12.6
	40 S3	C6/4	14	11.2	85.5	13.1	16.5	13.2	86.4	15.3
	40 S4	C6/4	16	12.8	86.3	14.8	19	15.2	87.2	17.4
	40 M5	C6/4	18.5	14.8	87.3	17	21.5	17.2	88.1	19.5
LSAM	42.3 VS1	C6/4	23	18.4	87.7	21	28.5	22.8	88.5	25.8
	42.3 VS2	C6/4	25	20	88	22.8	30	24	88.8	27
	42.3 VS3	C6/4	28.5	22.8	88.7	25.7	34	27.2	89.5	30.4
	42.3 S4	C6/4	32	25.6	90.3	28.3	39	31.2	90.9	34.3
	42.3 S5	C6/4	36.5	29.2	89.8	32.5	43.5	34.8	90.5	38.5
	42.3 M7	C6/4	40	32	90.2	35.5	47.5	38	90.9	41.8
	42.3 M8	C6/4	44	35.2	90.5	38.9	52	41.6	91.1	45.7
	42.3 L9	C6/4	50.5	40.4	91	44.4	54.5	43.6	91.8	47.5
LSAM	44.3 S2	C6/4	64	51	92.3	55	80	64	92.5	69
	44.3 S3	C6/4	73	58	92.1	63	91	73	92.4	79
	44.3 S4	C6/4	82	66	92.7	71	102	82	93	88
	44.3 S5	C6/4	91	73	92.5	79	114	91	92.9	98
	44.3 M6	C6S/4	113	90	92.8	97	135	108	93.3	116
	44.3 M8	C6/4	123	98	93.2	105	150	120	93.6	128
	44.3 L10	C6S/4	137	110	93.5	118	169	135	93.8	144
	44.3 VL13	C6/4	164	131	93.5	140	191	153	93.9	163
	44.3 VL14	C6/4	180	144	93.2	155	210	168	93.6	179
	LSAM	46.3 S4	C6/4	202	162	93.1	174	237	190	93.3
46.3 S5		C6/4	215	172	92.9	185	250	200	93.2	215
46.3 M7		C6S/4	240	192	93.6	205	280	224	93.7	239
46.3 M8		C6S/4	253	202	93.5	216	295	236	93.7	252
46.3 L10		C6/4	276	221	94.3	234	314	251	94.4	266
46.3 L11		C6/4	303	242	94.1	257	353	282	94.3	299
LSAM	47.3 VS3	C6/4	330	264	93.9	281	410	328	94	349
	47.3 S4	C6S/4	375	300	94.4	318	455	364	94.5	385
	47.3 S5	C6/4	400	320	94.8	338	480	384	94.9	405
	47.3 M7	C6/4	450	360	94.9	379	561	449	95	473
	47.3 M8	C6/4	475	380	94.7	401	575	460	94.9	485
	47.3 L9	C6S/4	525	420	95.3	441	610	488	95.4	512
	47.3 L10	C6S/4	590	472	95.3	495	681	545	95.5	571
LSAM	49.3 M6	C6S/4	660	528	94.8	557	760	608	94.8	641
	49.3 M8	C6S/4	760	608	94.8	641	850	680	94.9	717
	49.3 L9	C6S/4	820	656	95.5	687	940	752	95.5	787
	49.3 L10	C6S/4	892	714	95.5	748	1031	825	95.5	864
LSAM	50.2 M6	C6S/4	1080	864	95.1	909	1300	1040	95	1095
	50.2 L7	C6S/4	1175	940	95.4	985	1390	1112	95.3	1167
	50.2 L8	C6S/4	1270	1016	95.5	1064	1520	1216	95.4	1275
	50.2 VL10	C6S/4	1390	1112	95.8	1161	1670	1336	95.6	1397
LSAM	52.3 S6	C6S/4	1650	1320	96.2	1372	-	-	-	-
	52.3 S7	C6S/4	1937	1550	96.2	1611	1950	1560	96.5	1617
	52.3 L9	C6S/4	2085	1668	96.4	1730	2286	1828	96.5	1895
	52.3 L12	C6S/4	2255	1804	96.4	1871	2510	2008	96.6	2079

kWe: electrical rating available from the alternator. kWm: necessary mechanical rating from the engine.

* Optional: SHUNT + PMG available.

** Efficiency and mechanical power (kWm) are calculated for 380V - 50Hz and 450V - 60Hz.



TEMPERATURE RISE: Class F - 95°/45°

AREP*			1500 R.P.M. - 50 Hz - P.F. = 0.8				1800 R.P.M. - 60 Hz - P.F. = 0.8			
			380V ... 415V		380 V		440V ... 480V		450 V	
4 P - 3 Ph + Neutral			kVA	kWe	Effic.**	kWm**	kVA	kWe	Effic.**	kWm**
LSAM	40 VS1	C6/4	9	7.2	83.9	8.5	10.5	8.4	84.8	9.9
	40 VS2	C6/4	11.5	9.2	85.2	10.8	13.5	10.8	86	12.6
	40 S3	C6/4	14	11.2	85.5	13.1	16.5	13.2	86.4	15.3
	40 S4	C6/4	16	12.8	86.3	14.8	19	15.2	87.2	17.4
	40 M5	C6/4	18.5	14.8	87.3	17	21.5	17.2	88.1	19.5
LSAM	42.3 VS1	C6/4	20	16	88.3	18.1	25	20	88.9	22.5
	42.3 VS2	C6/4	24	19.2	88.2	21.8	29	23.2	88.9	26.1
	42.3 VS3	C6/4	28	22.4	88.8	25.2	33.5	26.8	89.6	29.9
	42.3 S4	C6/4	32	25.6	90.3	28.3	39	31.2	90.9	34.3
	42.3 S5	C6/4	35.5	28.4	89.9	31.6	42	33.6	90.7	37
	42.3 M7	C6/4	39	31.2	90.3	34.6	46.5	37.2	91	40.9
	42.3 M8	C6/4	43	34.4	90.6	38	50.5	40.4	91.2	44.3
	42.3 L9	C6/4	49	39.2	91.1	43	54.5	43.6	91.8	47.5
	LSAM	44.3 S2	C6/4	64	51	92.3	55	80	64	92.5
44.3 S3		C6/4	73	58	92.1	63	91	73	92.4	79
44.3 S4		C6/4	82	66	92.7	71	102	82	93	88
44.3 S5		C6/4	91	73	92.5	79	114	91	92.9	98
44.3 M6		C6S/4	111	89	92.8	96	131	105	93.3	113
44.3 M8		C6/4	123	98	93.2	105	146	117	93.6	125
44.3 L10		C6S/4	137	110	93.5	118	165	132	93.9	141
44.3 VL13		C6/4	160	128	93.6	137	190	152	93.9	162
44.3 VL14		C6/4	176	141	93.3	151	205	164	93.7	175
LSAM		46.3 S4	C6/4	197	158	93.2	170	230	184	93.3
	46.3 S5	C6/4	215	172	92.9	185	243	194	93.2	208
	46.3 M7	C6S/4	233	186	93.6	199	271	217	93.8	231
	46.3 M8	C6S/4	246	197	93.5	211	286	229	93.7	244
	46.3 L10	C6/4	265	212	94.3	225	304	243	94.4	257
	46.3 L11	C6/4	300	240	94.1	255	341	273	94.3	290
LSAM	47.3 VS3	C6/4	330	264	93.9	281	410	328	94	349
	47.3 S4	C6S/4	375	300	94.4	318	455	364	94.5	385
	47.3 S5	C6/4	400	320	94.8	338	480	384	94.9	405
	47.3 M7	C6/4	450	360	94.9	379	561	449	95	473
	47.3 M8	C6/4	475	380	94.7	401	575	460	94.9	485
	47.3 L9	C6S/4	525	420	95.3	441	610	488	95.4	512
	47.3 L10	C6S/4	580	464	95.3	487	681	545	95.5	571
LSAM	49.3 M6	C6S/4	650	520	94.8	549	760	608	94.8	641
	49.3 M8	C6S/4	745	596	94.8	629	850	680	94.9	717
	49.3 L9	C6S/4	820	656	95.5	687	940	752	95.5	787
	49.3 L10	C6S/4	870	696	95.5	729	1031	825	95.5	864
LSAM	50.2 M6	C6S/4	1070	856	95.2	899	1275	1020	95.1	1073
	50.2 L7	C6S/4	1165	932	95.4	977	1360	1088	95.3	1142
	50.2 L8	C6S/4	1255	1004	95.6	1050	1485	1188	95.4	1245
LSAM	50.2 VL10	C6S/4	1380	1104	95.8	1152	1650	1320	95.7	1379
	52.3 S6	C6S/4	1650	1320	96.2	1372	-	-	-	-
	52.3 S7	C6S/4	1867	1496	96.3	1551	1950	1560	96.5	1617
	52.3 L9	C6S/4	2002	1601	96.4	1661	2325	1860	96.6	1925
	52.3 L12	C6S/4	2172	1737	96.5	1801	2418	1934	96.6	2003

kWe: electrical rating available from the alternator. kWm: necessary mechanical rating from the engine.

* Optional: SHUNT + PMG available.

** Efficiency and mechanical power (kWm) are calculated for 380V - 50Hz and 450V - 60Hz.

BV – DNV – RINA – PRS – ClassNK – RS – LR – ABS – KRS – CCS – TL

Class H – 21.5 to 2290 kVA - 50 Hz

Class F – 19.5 to 2055 kVA - 50 Hz



TEMPERATURE RISE:			Class H - 120°/45° - 110°/45°				Class F - 100°/45° - 95°/45°			
			1500 R.P.M. - 50 Hz - P.F. = 0.8				1500 R.P.M. - 50 Hz - P.F. = 0.8			
AREP*			690V		690 V		690V		690 V	
4 P - 3 Ph + Neutral			kVA	kWe	Effic.	kWm	kVA	kWe	Effic.	kWm
LSAM	42.3 VS1	C10/4	21.5	17.2	86.7	19.8	19.5	15.6	87	17.9
	42.3 VS2	C10/4	23	18.4	86.9	21.2	21	16.8	87.3	19.2
	42.3 VS3	C10/4	27	21.6	88.4	24.4	25	20	88.6	22.6
	42.3 S4	C10/4	28	22.4	89.8	24.9	27	21.6	89.9	24
	42.3 S5	C10/4	34	27.2	89.3	30.5	30.9	24.7	89.6	27.6
	42.3 M7	C10/4	38.5	30.8	89.6	34.4	35	28	90	31.1
	42.3 M8	C10/4	42.5	34	90	37.8	38.5	30.8	90.3	34.1
	42.3 L9	C10/4	49	39.2	90	43.6	44	35.2	90.3	39
	LSAM	44.3 S2	C10/4	76	61	90.3	68	65	52	90.6
44.3 S3		C10/4	80	64	90.2	71	70	56	90.5	62
44.3 S4		C52/4	85	68	92	74	75	60	92.2	65
44.3 S5		C52/4	90	72	91.8	78	80	64	92.1	69
44.3 M6		C52/4	95	76	92.4	82	90	72	92.6	78
44.3 M8		C52/4	111	89	92.7	96	101	81	92.8	87
44.3 L10		C52/4	128	102	92.8	110	117	94	92.9	101
44.3 VL13		C10/4	160	128	93.3	137	145	116	93.5	124
44.3 VL14		C10/4	170	136	93.1	146	160	128	93.3	137
LSAM	46.3 S4	C10/4	200	160	93.1	172	180	144	93.2	155
	46.3 S5	C10/4	210	168	93	181	190	152	93.2	163
	46.3 M7	C10/4	240	192	93.1	206	216	173	93.2	186
	46.3 M8	C10/4	253	202	93	217	230	184	93.1	198
	46.3 L10	C52S/4	270	216	94.1	230	240	192	94.3	204
	46.3 L11	C52S/4	282	226	94	240	256	205	94.2	218
LSAM	47.3 S4	C52T/4	350	280	94.8	295	319	255	94.9	269
	47.3 S5	C52S/4	400	320	94.5	339	364	291	94.7	307
	47.3 M7	C52S/4	450	360	94.8	380	400	320	95	337
	47.3 M8	C52S/4	465	372	94.7	393	425	340	94.9	358
	47.3 L9	C10S/4	515	412	94.9	434	480	384	94.9	405
	47.3 L10	C10S/4	565	452	95.2	475	520	416	95.3	437
LSAM	49.3 S4	C10S/4	615	492	94.4	521	550	440	94.6	465
	49.3 M6	C10S/4	680	544	94.3	577	600	480	94.4	508
	49.3 M8	C10S/4	700	560	94.7	591	650	520	94.8	549
	49.3 L9	C10S/4	800	640	95.1	673	725	580	95.3	609
	49.3 L10	C10S/4	850	680	95.1	715	775	620	95.3	651
LSAM	50.2 M6	C52S/4	1030	824	95.1	866	960	768	95.2	807
	50.2 L7	C52S/4	1100	880	95.4	922	1030	824	95.5	863
	50.2 L8	C52S/4	1215	972	95.6	1017	1125	900	95.7	940
	50.2 VL10	C52S/4	1385	1108	95.8	1157	1290	1032	95.9	1076
LSAM	52.3 S6	C52S/4	1655	1324	95.9	1381	1485	1188	96	1238
	52.3 S7	C52S/4	1870	1496	96	1559	1680	1344	96	1399
	52.3 L9	C52S/4	1990	1592	96.1	1657	1785	1428	96.1	1486
	52.3 L12	C52S/4	2290	1832	96.1	1907	2055	1644	96.1	1711

kWe: electrical rating available from the alternator. kWm: necessary mechanical rating from the engine.

* Optional: SHUNT + PMG available.

BV – DNV – RINA – PRS – ClassNK – RS – LR – ABS – KRS – CCS – TL

Class H – 26 to 2365 kVA - 60 Hz

Class F – 24 to 2121 kVA - 60 Hz



TEMPERATURE RISE:			Class H - 120°/45° - 110°/45°				Class F - 100°/45° - 95°/45°			
			1800 R.P.M. - 60 Hz - P.F. = 0.8				1800 R.P.M. - 60 Hz - P.F. = 0.8			
AREP*			690V		690 V		690V		690 V	
4 P - 3 Ph + Neutral			kVA	kWe	Effic.	kWm	kVA	kWe	Effic.	kWm
LSAM	42.3 VS1	C22T/4	26	20.8	87.3	23.8	24	19.2	87.5	21.9
	42.3 VS2	C22T/4	28	22.4	87.8	25.5	25	20	88.1	22.7
	42.3 VS3	C22T/4	32.5	26	88.8	29.3	29	23.2	89	26.1
	42.3 S4	C22T/4	35.5	28.4	90.2	31.5	34	27.2	90.3	30.1
	42.3 S5	C22T/4	41.5	33.2	90	36.9	37.5	30	90.2	33.3
	42.3 M7	C22T/4	45	36	90.6	39.7	40.5	32.4	90.9	35.6
	42.3 M8	C22T/4	49	39.2	90.1	43.5	43.5	34.8	90.2	38.6
	42.3 L9	C22T/4	57.5	46	90.8	51	51	40.8	91	44.8
	LSAM	44.3S2	C22TS/4	85	68	91.1	75	75	60	91.1
44.3S3		C22TS/4	91	73	91.1	80	80	64	91.1	70
44.3S4		C22T/4	100	80	91.6	87	90	72	91.5	79
44.3S5		C22T/4	110	88	91.5	96	95	76	91.6	83
44.3M6		C22T/4	124	99	91.7	108	105	84	91.7	92
44.3M8		C22TS/4	129	103	92.6	111	115	92	92.6	99
44.3L10		C22T/4	155	124	93.1	133	140	112	93.2	120
44.3 VL13		C22T/4	185	148	93.4	158	165	132	93.4	141
44.3 VL14		C22T/4	206	165	93.3	177	185	148	93.4	158
LSAM	46.3 S4	C22T/4	240	192	93.1	206	213	170	93.1	183
	46.3 S5	C22T/4	250	200	93	215	225	180	93.1	193
	46.3 M7	C22TS/4	270	216	93.5	231	240	192	93.5	205
	46.3 M8	C22TS/4	287	230	93.5	246	255	204	93.5	218
	46.3 L10	C23/4	300	240	94.2	255	270	216	94.2	229
	46.3 L11	C23/4	330	264	94.1	281	295	236	94.2	251
LSAM	47.3 S4	C22TS/4	456	365	94.6	386	415	332	94.8	350
	47.3 S5	C23/4	480	384	94.7	405	437	350	94.8	369
	47.3 M7	C23/4	530	424	94.9	447	500	400	95	421
	47.3 M8	C23/4	550	440	94.8	464	515	412	94.9	434
	47.3 L9	C22T/4	605	484	94.5	512	540	432	94.4	458
	47.3 L10	C22T/4	650	520	95.2	546	580	464	95.2	487
LSAM	49.3 S4	C22TS/4	700	560	93.8	597	625	500	93.9	532
	49.3 M6	C22TS/4	800	640	94.5	677	750	600	94.6	634
	49.3 M8	C22TS/4	860	688	94.7	727	800	640	94.8	675
	49.3 L9	C22TS/4	900	720	94.6	761	850	680	94.6	719
	49.3 L10	C22TS/4	950	760	95	800	900	720	95	758
LSAM	50.2 S4	C23S/4	1080	864	94.6	913	970	776	94.6	820
	50.2 M6	C22S/4	1220	976	95.1	1026	1090	872	95.1	917
	50.2 L8	C23S/4	1440	1152	95.4	1208	1290	1032	95.5	1081
	50.2 VL10	C22S/4	1625	1300	95.7	1358	1450	1160	95.7	1212
LSAM	52.3 S6	C22S/4	1800	1440	96	1500	1646	1316	96	1372
	52.3 S7	C22S/4	2128	1702	95.9	1775	1909	1527	96	1591
	52.3 L9	C22S/4	2175	1740	96.3	1807	1952	1561	96.2	1623
	52.3 L12	C22S/4	2365	1892	96.6	1959	2121	1697	96.6	1757

kWe: electrical rating available from the alternator. kWm: necessary mechanical rating from the engine.

* Optional: SHUNT + PMG available.



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