



Certificate No. 02-004172/025965

TYPE APPROVAL CERTIFICATE

This is to certify that this product complies with the Rules for the classification of ships, Part 1 - General requirements, Chapter 3 - Type approval of products.

TYPE AND DESCRIPTION OF PRODUCT:

DIESEL ENGINE Type SF / F series

MANUFACTURER:

GUASCOR ENERGY S.A.U.
Zumaia (Gipuzkoa)
Spain

THE PRODUCT MEETS FOLLOWING RULES/REGULATIONS:

Rules for the Classification of Ships, Part 9-Machines

FURTHER DETAILS OF THE PRODUCT AND CONDITIONS FOR CERTIFICATION ARE GIVEN OVERLEAF.

APPROVAL IS VALID UNTIL: 2027-09-25

Place and date: Split, 2023-09-25

Seal _____

Marinko Popović, dipl.ing.

NOTE: This certificate is not valid for equipment, the design or manufacture of which has been varied or modified from the specimen tested. The manufacturer should notify Croatian Register of Shipping of any modification or changes to the product in order to obtain a valid certificate.

DETAILED PRODUCT DESCRIPTION:

Number of cylinders	6 (SF/F 180); 8 (SF/F 240); 12 (SF/F 360); 16 (SF/F 480)		
Cylinder arrangement	In-line (SF/F 180 & SF/F 240); In-Vee 60° (SF/F 360 & SF/F 480)		
Working cycle	4- stroke		
Cylinder bore (mm)	152		
Stroke (mm)	165		
Kind of fuel	Liquid		
Fuel system	Electronically controlled, direct injection type		
Valve operation	Cam control		
Turbocharging system	L-18FN:	Naturally aspirated	
	L-18/24/36/48 FT/ST:	With turbocharging and aftercooled	

APPLICATION / LIMITATIONS:

Application: Propulsion

Brand	Denomination	Rated power (kW)	Rated speed (rpm)	Max. firing pressure (bar)
L-18FN	F 180-SP	221	2000	100
L-18FT	F 180 T-SP	305	1900	125
	F 180 TB-SP	331	1800	125
	F 180 TA-SP	368	2000	145
	F 180 TAB-SP	404	1800	145
L-24FT	F 240 TA-SP	471	1800	145
	F 240 TAB-SP	478	1800	145
L-36FT	F 360 TA-SP	735	2000	145
L-48 FT	F 480 TA-SP	1029	1800	145
L-18ST	SF 180 TA-SP	476	1800	175
L-24ST	SF 240 TA-SP	635	1800	175
L-36ST	SF 360 TA-SP	953	1800	175
L-48ST	SF 480 TA-SP	1271	1800	175

Application: Auxiliary and emergency

Brand	Denomination	Rated speed 1800 rpm		Rated speed 1500 rpm		Rated speed 1200 rpm	
		Rated power (kW)	Max. firing pressure (bar)	Rated power (kW)	Max. firing pressure (bar)	Rated power (kW)	Max. firing pressure (bar)
L-18FN	F 180-SG	195	95	180	100	N.A.	
L-18FT	F 180 T-SG	310	125	255	130	N.A.	
	F 180 TB-SG	325	125	280	130	N.A.	
	F 180 TA-SG	365	145	310	145	N.A.	
	F 180 TAB-SG	405	145	340	145	N.A.	
L-24FT	F 240 TA-SG	465	145	410	145	N.A.	
	F 240 TAB-SG	500	145	450	145	N.A.	
L-36FT	F 360 TA-SG	735	145	620	145	N.A.	
L-48 FT	F 480 TA-SG	980	145	890	145	N.A.	
L-18ST	SF 180 TA-SG	476	175	421	175	337	175
L-24ST	SF 240 TA-SG	635	175	561	175	449	175
L-36ST	SF 360 TA-SG	953	175	842	175	673	175
L-48ST	SF 480 TA-SG	1271	175	1122	175	898	175

Power ratings (at the same rated speed) lower than those stated is accepted as long as they are within the values approved by engine designer.

TYPE APPROVAL DOCUMENTATION:

Approved by the Croatian Register of Shipping with letters No.(dated):

1965/TSE/IA/024735	(2019-07-09)
2220/TSE/DL/025965	(2023-09-25)

MARKING OF PRODUCT:

- *manufacturer's mark*
- *location and year of final fitting*
- *CRS mark*

CONDITIONS FOR CERTIFICATION:

Signalization and protection related to the engine shall be subject to CRS approval in each particular case and will depend on service applied and the degree of automation of the engine plant.