

Wärtsilä 31		IMO Tier II or III	
Cylinder bore	310 mm	Fuel specification: Fuel oil	
Piston stroke	430 mm	700 cSt/50°C	7200 sR1/100°F
Cylinder output	610 kW/cyl	ISO 8217, category ISO-F-RMK 700	
Speed	750 rpm	SFOC 165 g/kWh at ISO conditions	
Mean effective pressure	30.1bar		
Piston speed	10.75 m/s		

Rated power

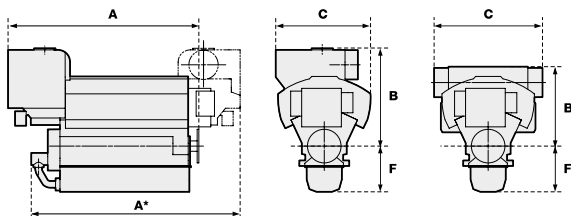
Engine type	kW
8V31	4 880
10V31	6 100
12V31	7 320
14V31	8 540
16V31	9 760

Engine dimensions (mm) and weights (tonnes)

Engine type	A*	A	B	C	F	Weight
8V31	6 180	5 585	3 205	3 100	1 500	56
10V31	6 820	6 225	3 205	3 100	1 500	62
12V31	7 500	6 905	2 550	3 500	1 500	71
14V31	8 140	7 545	2 550	3 500	1 500	77
16V31	8 780	8 185	2 550	3 500	1 500	85

*Turbocharger at flywheel end

For definitions see page 59.



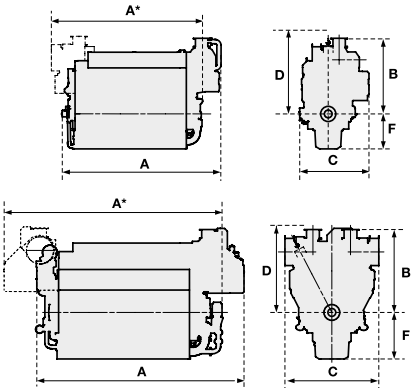
Engines and Generating Sets

Wärtsilä 32		IMO Tier II or III	
Cylinder bore	320 mm	Fuel specification: Fuel oil	
Piston stroke	400 mm	700 cSt/50°C	7200 sR1/100°F
Cylinder output	580 kW/cyl	ISO 8217, category ISO-F-RMK 700	
Speed	750 rpm	SFOC 174 g/kWh at ISO condition	
Mean effective pressure	28.9 bar		
Piston speed	10.0 m/s		

Rated power	
Engine type	580 kW/cyl
6L32	3 480
8L32	4 640
9L32	5 220
12V32	6 960
16V32	9 280

Dimensions (mm) and weights (tonnes)								
Engine type	A*	A	B*	B	C	D	F	Weight
6L32	4 980	5 260	2 560	2 490	2 305	2 345	1 155	33.3
8L32	5 960	6 245	2 360	2 295	2 305	2 345	1 155	43.4
9L32	6 450	6 730	2 360	2 295	2 305	2 345	1 155	46.8
12V32	6 935	6 615	2 715	2 665	3 020	2 120	1 475	58.7
16V32	8 060	7 735	2 480	2 430	3 020	2 120	1 475	74.1

*Turbocharger at flywheel end.
For definitions see page 59.



Wärtsilä 38		IMO Tier II	
Cylinder bore	380 mm	Fuel specification: Fuel oil	
Piston stroke	475 mm	700 cSt/50°C	7200 sR1/100°F
Cylinder output	725 kW/cyl	ISO 8217, category ISO-F-RMK 700	
Speed	600 rpm	SFOC 176 g/kWh at ISO condition	
Mean effective pressure	26.9 bar		
Piston speed	9.5 m/s		

Rated power

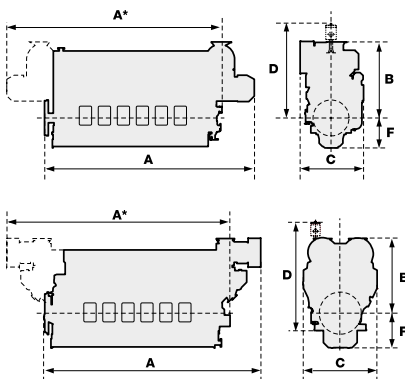
Engine type	kW
6L38	4 350
8L38	5 800
9L38	6 525
12V38	8 700
16V38	11 600

Dimensions (mm) and weights (tonnes)

Engine type	A*	A	B*	B	C	D	F	Weight
6L38	6 345	6 215	2 830	2 830	2 122	3 135	1 115	51
8L38	7 960	7 844	2 996	2 972	2 209	3 135	1 115	63
9L38	8 560	8 444	2 996	2 972	2 209	3 135	1 115	72
12V38	7 461	7 344	3 080	3 080	3 030	2 855	1 435	88
16V38	9 018	8 904	3 281	3 281	3 030	2 855	1 435	110

* Turbocharger at flywheel end.

For definitions see page 59.



Engines and Generating Sets

Wärtsilä 46F		IMO Tier II or III	
Cylinder bore	460 mm	Fuel specification: Fuel oil	
Piston stroke	580 mm	700 cSt/50°C	7200 sR1/100°F
Cylinder output	1200 kW/cyl	ISO 8217, category ISO-F-RMK 700	
Speed	600 rpm	SFOC 170 g/kWh at ISO condition	
Mean effective pressure	24.9 bar	Option: Lubricating oil module integrated on engine.	
Piston speed	11.6 m/s		

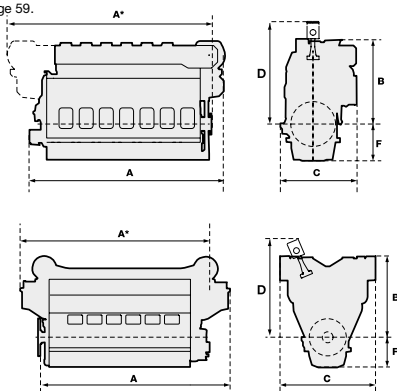
Rated power

Engine type	kW
6L46F	7 200
7L46F	8 400
8L46F	9 600
9L46F	10 800
12V46F	14 400
14V46F	16 800
16V46F	19 200

Dimensions (mm) and weights (tonnes)

Engine type	A*	A	B	C	D	F	Weight
6L46F	8 430	8 620	3 500	2 930	3 750	1 480	97
7L46F	9 260	9 440	3 800	2 950	3 750	1 480	113
8L46F	10 080	10 260	3 800	2 950	3 750	1 480	124
9L46F	10 900	11 080	3 800	2 950	3 750	1 480	140
12V46F	10 080	10 150	3 770	4 050	3 800	1 820	173
14V46F	11 650	11 729	4 243	4 678	3 800	1 820	216
16V46F	12 700	12 779	4 243	4 678	3 800	1 820	233

* Turbocharger at flywheel end.
For definitions see page 59.



Definitions and notes for Wärtsilä engines

Engine dimensions

- A*** Total length of the engine when the turbocharger is located at the flywheel end.
- A** Total length of the engine when the turbocharger is located at the free end.
- B** Height from the crankshaft centreline to the highest point.
- B*** Height from the crankshaft centreline to the highest point when the turbocharger is located at the flywheel end.
- C** Total width of the engine.
- C*** Total width of the engine when the turbocharger is located at the flywheel end.
- D** Minimum height from the crankshaft centreline when removing a piston.
- F** Distance from the crankshaft centreline to the bottom of the oil sump.

Dimensions and weights

- Dimensions are in millimetres and weights are in metric tonnes. Indicated values are for guidance only and are not binding.
- Cylinder configurations: L = in-line and V = v-form.

Specific fuel energy consumption

- At ISO standard reference conditions
- Lower calorific value of fuel 42 700 kJ/kg
- Tolerance 5%
- Without engine driven pumps
- Natural gas
- Methane number min. 80
- Lower heating value min. 28 MJ/Nm³
- Gas pressure 5.5 bar

ISO standard reference conditions

Total barometric pressure	1.0 bar
Suction air temperature	25°C
Charge air, or scavenge air, cooling water temperature	25°C
Relative humidity	30%

Engines and Generating Sets

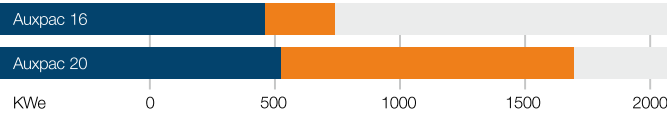


Wärtsilä Auxpac

wärtsilä Auxpac generating sets are available in a selected range as pre-engineered and pre-commissioned auxiliary generating sets. The common baseframe is optimised for the package, which together with the compact design of the engine and the selected generator, offers unmatched power-to-space and power-to-weight ratios. Other benefits of pre-engineering include readily available documentation, which also includes models in Tribon[®] format, and short lead-times. Auxpac generating sets are offered as 400 V/ 50 Hz and 450 V/60 Hz in the power range 500 kW to 1700 kW.

Pre-Engineered Medium-Speed Generating Sets			
Main data of generators	60 Hz	50 Hz	IMO Tier II or III
Voltage	450	400	Fuel specification:
Protection class	IP 23, IP 44 *	IP 23, IP 44 *	Fuel oil700 cSt/50°C
Temperature rise and isolation	Class F	Class F	ISO 8217, category ISO-F-RMK 55
Cooling	Air, water *	Air, water *	
			* Option

Power Range for Wärtsilä Auxpac



■ A16 – Dimensions (mm) and weights (tonnes)

60Hz	Output (kWe)	A	E	L	Weight
525W5L16	525	4 530	1 400	1 960	9.8
630W6L16	630	4 787	1 400	1 960	10.8
735W7L16	735	5 050	1 400	1 960	11.8
50Hz					
455W5L16	455	4 530	1 400	1 960	9.8
545W6L16	545	4 787	1 400	1 960	10.8
635W7L16	635	5 050	1 400	1 960	11.8

■ A20 – Dimensions (mm) and weights (tonnes)

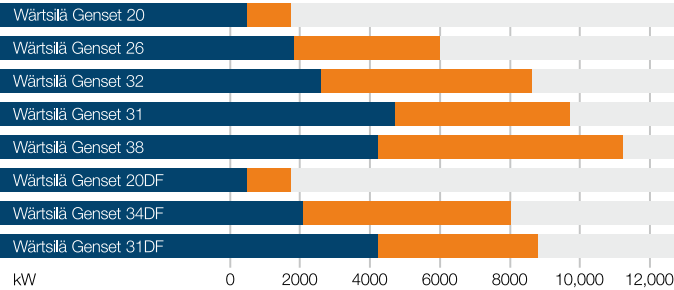
60 Hz	Output kWe	A	E	L	Weight
520W4L20	520	4 407	1 700	2 248	13.6
645W4L20	645	4 457	1 700	2 248	14.3
760W6L20	760	5 057	1 700	2 248	17.3
875W6L20	875	5 227	1 700	2 248	17.3
975W6L20	975	5 227	1 700	2 248	17.7
1050W6L20	1 050	5 227	1 700	2 248	18.0
1200W8L20	1 200	5 852	1 920	2 373	21.3
1400W8L20	1 400	5 852	1 920	2 373	22.4
1600W9L20	1 600	6 507	1 920	2 455	23.4
50 Hz					
520W4L20	520	4 399	1 770	2 248	13.3
670W4L20	670	4 407	1 770	2 248	13.4
790W6L20	790	5 007	1 770	2 248	16.4
860W6L20	860	5 057	1 770	2 248	16.9
1000W6L20	1 000	5 212	1 770	2 248	17.9
1140W6L20	1 140	5 212	1 770	2 248	18.1
1350W8L20	1 350	5 852	1 920	2 373	21.3
1550W9L20	1 550	6 507	1 920	2 373	22.8
1700W9L20	1 700	6 507	1 920	2 455	23.1

Engines and Generating Sets

Wärtsilä Gensets

a wide range of generating sets, comprising the generator and diesel engine mounted on a common baseframe, are available for both service power generation and for diesel-electric propulsion. All generating sets listed in this section are based on medium-speed diesel engines designed for operating on heavy fuel oil. These generating sets are resiliently mounted and the generator voltage can be selected in all cases, except for the Auxpac generating sets, which are Low Voltage only. Larger diesel generators are delivered for separate mounting of the diesel engine and generator.

Power Range for Wärtsilä Gensets



Wärtsilä Genset 20			IMO Tier II or III
Cylinder bore	200 mm	Generator voltage	0.4–13.8 kV
Piston stroke	280 mm	Generator efficiency	0.95–0.96
Cylinder output	185, 200 kW/cyl	Fuel specification: Fuel oil	
Speed	900, 1000 rpm	700 cSt/50°C	7200 sR1/100°F
Mean effective pressure	27.3, 28.0 bar	ISO 8217, category ISO-F-RMK 700	
Piston speed	8.4, 9.3 m/s	SFOC 186 g/kWh at ISO condition	

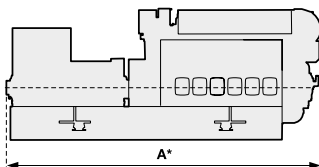
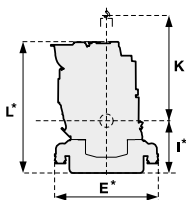
Rated power

Engine type	60 Hz		50 Hz	
	185 kW/cyl, 900 rpm		200 kW/cyl, 1000 rpm	
	Eng. kW	Gen. kW	Eng. kW	Gen. kW
4L20	740	700	800	760
6L20	1 110	1 055	1 200	1 140
8L20	1 480	1 405	1 600	1 520
9L20	1 665	1 580	1 800	1 710

Dimensions (mm) and weights (tonnes)

Engine type	A*	E*	I*	K	L*	Weight*
4L20	4 910	1 770/1920	990	1 800	2338	14.0
6L20	5 325	1770/1920/2070	895/975/1025	1 800	2243/2323/2373	16.8
8L20	6 030	1920/2070	1025/1075	1 800	2474/2524	20.7
9L20	6 535	2070/2300	1075/1125	1 800	2524/2574	23.8

* Dependent on generator type and size.
For definitions see page 71.



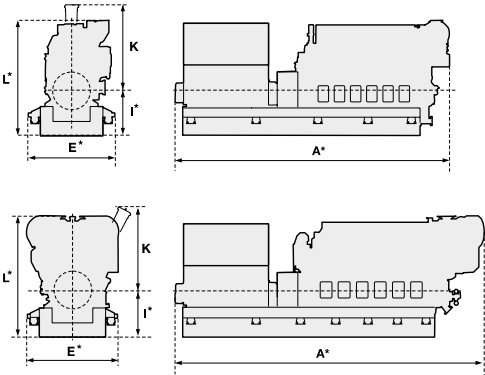
Engines and Generating Sets

Wärtsilä Genset 26			IMO Tier II or III
Cylinder bore	260 mm	Generator voltage	0.4–13.8 kV
Piston stroke	320 mm	Generator efficiency	0.95–0.96
Cylinder output	325, 340 kW/cyl	Fuel specification: Fuel oil	
Speed	900, 1000 rpm	700 cSt/50°C	7200 sR1/100°F
Mean effective pressure	23.0, 25.5 bar	ISO 8217, category ISO-F-RMK 700	
Piston speed	9.6, 10.7 m/s	SFOC 181 g/kWh at ISO condition	

Rated power				
Engine type	60 Hz		50 Hz	
	325 kW/cyl, 900 rpm		340 kW/cyl, 1000 rpm	
	Eng. kW	Gen. kW	Eng. kW	Gen. kW
6L26	1 950	1 870	2 040	1 960
8L26	2 600	2 495	2 720	2 610
9L26	2 925	2 810	3 060	2 940
12V26	3 900	3 745	4 080	3 915
16V26	5 200	4 990	5 440	5 220

Dimensions (mm) and weights (tonnes)						
Engine type	A*	E*	I*	K	L*	Weight*
6L26	7 500	2 300	1 200	2 430	3 033	35
8L26	8 000	2 300	1 200	2 430	3 068	45
9L26	8 500	2 300	1 300	2 430	3 168	50
12V26	8 400	2 700	1 560	2 765	3 686	60
16V26	9 700	2 700	1 560	2 765	3 716	70

* Dependent on generator type and size.
For definitions see page 71.



Wärtsilä Genset 31

IMO Tier II or III

Cylinder bore	310 mm	Generator voltage	0.4–13.8 kV
Piston stroke	430 mm	Generator efficiency	0.95–0.97
Cylinder output	590, 610 kW/cyl	Fuel specification: Fuel oil	
Speed	720, 750 rpm	700 cSt/50°C	7200 sR1/100°F
Mean effective pressure	30.3, 30.1 bar	ISO 8217, category ISO-F-RMK 700	
Piston speed	10.3, 10.75 m/s	SFOC 165 g/kWh at ISO conditions	

Rated power

Engine type	60 Hz		50 Hz	
	590 kW/cyl, 720 rpm		610 kW/cyl, 750 rpm	
	Eng. kW	Gen. kW	Eng. kW	Gen. kW
8V31	4 720	4 530	4 880	4 685
10V31	5 900	5 665	6 100	5 855
12V31	7 080	6 800	7 320	7 030
14V31	8 260	7 930	8 540	8 200
16V31	9 440	9 060	9 760	9 370

Dimensions (mm) and weights (tonnes)

Engine type	A*	E*	I*	K	L*	Weight*
8V31	9 100	3 110	1 700	2 390	4 880	90.0
10V31	9 750	3 110	1 700	2 390	4 880	101.0
12V31	10 150	3 500	1 700	2 390	4 350	115.0
14V31	10 800	3 500	1 700	2 390	4 350	120.5
16V31	11 400	3 500	1 700	2 390	4 350	131.0

* Dependent on generator type and size.

For definitions see page 71.

