



## Engine Datasheet BFM3/T/C 1800min<sup>-1</sup>

Engine					
Type		BFM3	BFM3	BFM3T	BFM3C
Speed	[min <sup>-1</sup> ]	1800	1800	1800	1800
Net frequency	[Hz]	60	60	60	60
Power standard		LTP	LTP	LTP	LTP
Power level		G1	G2	-	-
General					
Aspiration		Natural	Natural	Turbo	CAC
No of cylinders		4	4	4	4
Configuration		in-line	in-line	in-line	in-line
Injection system			in-line pump		
Displacement	[l]	3,168	3,168	3,168	3,168
Bore	[mm]	98	98	98	98
Stroke	[mm]	105	105	105	105
Compression ratio		18.5	18.5	18.5	18.5
Mean effective pressure	[bar]	5.6	8.3	11.1	12.6
Piston speed	[m/s]	6.30	6.30	6.30	6.30
Rotation (looking at flywheel)		ccw	ccw	ccw	ccw
No of teeth on flywheel ring gear		103	103	103	103
Governor performance					
Speed droop (static) mech. gov.	[%]	4-6	4-6	4-6	4-6
Speed droop (static) mech. gov.	[%]	0-3	0-3	0-3	0-3
Governor performance to ISO 8528 Parts 1 and 5		G2	G2	G2	G2
Moment of inertia					
Engine without flywheel	[kg m <sup>2</sup> ]	5.4	5.4	5.5	5.5
Flywheel (standard genset spec.)	[kg m <sup>2</sup> ]	0.2	0.2	0.2	0.2
Max. step load acceptance, 1st step	[%]	-	-	-	-
Sound power at full load, incl. cooling system <sup>5</sup>	[dB(A)]	104	104.5	102	101
Sound press. (1m average, full load)	[dB(A)]	92	92.5	91	90
Weight					
Engine dry, w/o cooling system	[kg]	245	245	265	265
Lubrication system					
Oil specification			CF-4		
Oil consumption (as % of fuel consumption)		0.5	0.5	0.5	0.5
Oil capacity (sump)	[l]	7.5	7.5	7.5	7.5
Min. oil pressure (warning)	[bar]	1.5	1.5	1.5	1.5
Min. oil pressure (shut down)	[bar]	1.0	1.0	1.0	1.0
Max. permissible oil temperature(oil pan)	[°C]	120	120	120	120
Output					
Gross output(LTP or StandBy Power) <sup>1</sup>	[kW]	28	38	50	60
Fan reduction	[kW]	2.0	2.0	3.0	3.0
Electrical output <sup>2</sup>	[kVA]	28	40	52	63
Gross output(PRP or Prime Power) <sup>1a</sup>	[kW]	25	34	45	55
Gross output(Continuous Power) <sup>1b</sup>	[kW]	23	31	42	50
Fuel System (PRP)					
Fuel consumption					
25% load <sup>3</sup>	[l/h]	2	3.1	3.8	4.1
50% load <sup>3</sup>	[l/h]	3.6	4.8	6.2	7.7
75% load <sup>3</sup>	[l/h]	5.2	6.7	8.9	10.7
100% load <sup>3</sup>	[l/h]	6.6	9.0	11.4	13.8
25% load	[g/kWh]	265	262	245	234
50% load	[g/kWh]	243	240	236	238
75% load	[g/kWh]	236	222	224	220
100% load	[g/kWh]	225	223	216	214
Max. suction head of fuel feed pump	[m]	1.0	1.0	1.0	1.0



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<b>Cooling System (PRP)</b>					
General engine cooling data					
Max.perm.coolant outlet temperature	[°C]	103	103	103	103
Max. perm. flow resistance (cool. syst. and piping)	[bar]	0.5	0.5	0.5	0.5
Max.temperature of coolant (warning)	[°C]	97	97	97	97
Max. temperature of coolant (shutdown)	[°C]	103	103	103	103
Temperature at which thermostat starts to open	[°C]	78	78	78	78
Temperature at which thermostat is fully open	[°C]	90	90	90	90
Delivery of coolant pump	[m <sup>3</sup> /h]	4.2	4.2	4.2	4.2
Min. pressure before coolant pump	[bar]	0.15	0.15	0.15	0.15
Engine Cooling System					
Coolant capacity (engine)	[l]	4.8	4.8	4.8	4.8
Coolant capacity (incl. cooling unit)	[l]	-	-	-	-
Fan power consumption <sup>4</sup>	[kW]	3	3	4	4
Air to boil (max. permissible cool. air temp. at fan)	[°C]	50	50	50	50
Air pressure loss, external	[ mbar ]	2.0	2.0	2.0	2.0
Cooling air flow	[m <sup>3</sup> /h]	4720	4720	5760	5760
Heat Balance					
Heat dissipation (engine radiator) <sup>6</sup>	[kW]	32	39	42	45
Heat dissipation (CAC) <sup>6</sup>	[kW]	-	-	-	9.1
<b>Inlet / Exhaust Data</b>					
Max. intake depression (Switch setting)	[mbar]	30	30	30	30
Combustion air volume	[m <sup>3</sup> /h]	180	200	220	230
Max. exhaust back pressure	[mbar]	100	100	100	100
Max. exhaust gas temperature	[°C]	530	530	560	560
Exhaust gas flow (at above temp)	[m <sup>3</sup> /h]	360	395	430	450
<b>Electrical System</b>					
Voltage	[V]	12	12	12	12
Starter	[kW]	3	3	3	3
Alternator output	[A]	55	55	55	55
Batteries(minimum capacity, cold start limit -5°C)	[Ah]	1*150	1*150	1*150	1*150

Powers (kW) in accordance with DIN ISO 14396.

1 Limited time power 100%, which is capable for up to 500 h/year of which maximum of 300 h/year is continuous running, not exceedable, but required power for governing purpose only has to be considered. Necessary supply of engine power usually 10% for governing purpose only.

1a Prime power 100% , average power output ≤ 80%, no time limitation, plus 5% additional power for governing purpose only.

1b Continuous power 100% , no time limitation, plus 10% power for governing purpose only.

2 Ratings in accordance with ISO 8525 LTP. Alternator efficiency please see datasheet. 1500 min<sup>-1</sup> = kVA, 1800 min<sup>-1</sup> = kW

3 At calorific value 42700 kJ/kg + 5 %, density 0.835 kg/dm<sup>3</sup>, temperature 280 K.

4 Technical data and max. permissible torque for fan drive see data sheet.

5 Sound power values measured in accordance with ISO 6798.

6 The heat quantities are valid for the dimensioning of the cooling system.

They are given for the engine with the highest fuel consumption.

For further application guidance see DDE Installation Manual.

All data are provided for informational purposes only and are subject to amendment.