Engine Datasheet TCD8.0 1800 min^{-1}

Engine		
Type		TCD8.0
Speed	[min^{-1}]	1800
Net frequency	[Hz]	60
Power standard		LTP
Power level		-
Exhaust emission standard		Fuel optimized
General		
Aspiration		turbo, CAC
No of cylinders		6
Configuration		in-line
Injection system		Common Rail
Displacement	[l]	7,8
Bore	[mm]	110
Stroke	[mm]	136
Compression ratio		17
Mean effective pressure	[bar]	24,0
Piston speed	[m/s]	7,8
Rotation (looking at flywheel)		CCW
No of teeth on flywheel ring gear		129
Governor performance		
Speed droop (static) mech. gov.	[%]	-
Speed droop Common Rail. gov. (BOSCH)	[%]	0
Governing standards		
to ISO 8528 Parts 1 and 5		G3
Moment of inertia		
Engine without flywheel	[kg m²]	0,57
Flywheel (standard genset spec.)	[kg m²]	2.6
Max. step load acceptance, 1st step	[%]	-
Sound power at full load, incl. cooling system[5]	[dB(A)]	117,1
Sound press. (1m average, full load), incl. cool. syst.	[dB(A)]	102,6
Weight		
Engine dry, w/o cooling system	[kg]	764
Engine with cooling system	[kg]	954
Lubrication system		
Oil specification		TR0199-99-1217
Oil consumption (as % of fuel consumption)		<0,05
Oil capacity (sump)	[l]	31
Min. oil pressure (warning)	[bar]	1,5
Min. oil pressure (shut down)	[bar]	1,35
Max. permissible oil temperature (oil pan)	[°C]	130
Output		
Gross output(LTP or StandBy Power)[1]	[kW]	270,0
Fan reduction	[kW]	20,0
Net flywheel	[kW]	243,0
Electrical output[2]	[kVA]/[kWe]	224
Alternator efficiency	[%]	92
Gross output(PRP or Prime Power)[1a]	[kW]	245,0
Gross output(Continous Power)[1b]	[kW]	217,0
Fuel System		
Fuel consumption		
25% load[3]	[l/h]	16,9
50% load[3]	[l/h]	32,9
75% load[3]	[l/h]	46,8
100% load[3]	[l/h]	58,2
25% load	[g/kWh]	240
50% load	[g/kWh]	233
75% load	[g/kWh]	221
100% load	[g/kWh]	206

Engine Datasheet TCD8.0 1800 min^{-1}

Engine		
Type		TCD8.0
Max. suction head of fuel feed pump	[m]	-
Cooling System		
General engine cooling data		
Max. perm. coolant outlet temperature	[°C]	103
Max. perm. flow resistance (cool. syst. and piping)	[bar]	0,45
Max. temperature of coolant (warning)	[°C]	108
Max. temperature of coolant (shutdown)	[°C]	110
Temperature at which thermostat starts to open	[°C]	83
Temperature at which thermostat is fully open	[°C]	98
Delivery of coolant pump	[m^3/h]	17,7
Min. pressure before coolant pump	[bar]	0,3
Temperature at CAC outlet at standard conditions	[°C]	40
DEUTZ cooling system		
Coolant capacity (engine)	[l]	9,8
Coolant capacity (incl. cooling unit)	[l]	27,0
Air to boil (max. permissible cool. air temp. at fan)	[°C]	60
Fan power consumption[4]	[kW]	20,0
Cooling air flow	[m^3/h]	21240
Air pressure loss, external	[mbar]	2,0
Heat Balance		
Heat dissipation (engine radiator)[6]	[kW]	130,2
Heat dissipation (CAC)[6]	[kW]	56,6
Heat dissipation (convection)	[kW]	26,0
Inlet / Exhaust Data		
Max. intake depression (Switch setting)	[mbar]	30
Combustion air volume	[m^3/h]	1027
Max. exhaust back pressure	[mbar]	50
Max. exhaust gas temperature	[°C]	490
Exhaust gas flow (at above temp)	[m^3/h]	2743
Exhaust flange / pipe diameter	[mm]	-
Electrical System		
Voltage	[V]	24
Starter	[kW]	5
Alternator output	[A]	80
Batteries (minimum capacity, cold start limit -5°C)	[Ah]	140

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^{-1} = kVA, 1800 min^{-1} = kWe

[3] At calorific value 42700 kJ/kg + 5 %, density 0.835 kg/dm3, 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 information see ELTAB / Pocket book.

For further application guidance see DEUTZ Installation Manual.

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