



## Engine Datasheet TCD8.0 1800 min<sup>-1</sup>

<b>Engine</b>		
Type		TCD8.0
Speed	[min <sup>-1</sup> ]	1800
Net frequency	Hz	60
Power standard		LTP
Power level		-
Exhaust emission standard		Fuel optimized
<b>General</b>		
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) electr. gov.	[%]	0
Governing standards		
to ISO 8528 Parts 1 and 5		G3
Moment of inertia		
Engine without flywheel	[kg m <sup>2</sup> ]	0.57
Flywheel (standard genset spec.)	[kg m <sup>2</sup> ]	2.6
Max. step load acceptance, 1st step	[%]	-
Sound power at full load, incl. cooling system <sup>5</sup>	[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
<b>Output</b>		
Gross output(LTP or StandBy Power) <sup>1</sup>	[kW]	270
Fan reduction	[kW]	20
Net flywheel	[kW]	250
Electrical output <sup>2</sup>	[kVA]/[kWe]	285
Alternator efficiency	[%]	92
Gross output(PRP or Prime Power) <sup>1a</sup>	[kW]	245.0
Gross output(Continous Power) <sup>1b</sup>	[kW]	223.0
<b>Fuel System</b>		
Fuel consumption		
25% load <sup>3</sup>	[l/h]	16.9
50% load <sup>3</sup>	[l/h]	32.9
75% load <sup>3</sup>	[l/h]	46.8
100% load <sup>3</sup>	[l/h]	58.2



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25% load	[g/kWh]	240
50% load	[g/kWh]	233
75% load	[g/kWh]	221
100% load	[g/kWh]	206
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 <sup>3</sup> /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
Air to boil (max. permissible cool. air temp. at fan)	[°C]	60
Fan power consumption <sup>4</sup>	[kW]	20
Cooling air flow	[m <sup>3</sup> /h]	21240
Air pressure loss		2.0

#### Heat Balance

Heat dissipation (engine radiator) <sup>6</sup>	[kW]	130.2
Heat dissipation (CAC) <sup>6</sup>	[kW]	56.6
Heat dissipation (convection)	[kW]	26.0

### Inlet / Exhaust Data

Max. intake depression (Switch setting)	[mbar]	30
Combustion air volume	[m <sup>3</sup> /h]	1027
Max. exhaust back pressure	[mbar]	50
Max. exhaust gas temperature	[°C]	490
Exhaust gas flow (at above temp)	[m <sup>3</sup> /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<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 information see ELTAB / Pocket book.

For further application guidance see DPX Installation Manual.

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