DOOSAN INFRACORE GENERATOR ENGINE

P126TI-II

Ratings	Gross Eng	jine Output	Net Engine Output		
(kWm/PS)	Standby	Prime	Standby	Prime	
1500rpm(50Hz)	294/400	265/360	287/390	258/350	
1800rpm(60Hz)	342/465	307/418	331/450	296/403	



Ratings Definitions

The power ratings of Emergency Standby and Prime are in accordance with ISO 8528.

Fuel Stop power in accordance with ISO 3046.

<u>STANDBY POWER RATING</u> is applicable for supplying emergency power for the duration of the utility power outage. No overload capability is available for this rating. A standby rated engine should be sized for a maximum of an 80% average load factor and 200 hours of operation per year. This includes less than 25 hours per year at the Standby Power rating.

<u>PRIME POWER RATING</u> is available for an unlimited number of hours per year in variable load application. Variable load should not exceed a 70% average of the Prime Power rating during any operating period of 250 hours. The Total operating time at 100% Prime Power shall not exceed 500 hours per year. A 10% overload capability is available for a period of 1 hour withing a 12 hour period of operation. Total operating time at the 10% overload power shall not exceed 25 hous per year

© GENERAL ENGINE DATA

○ Engine Model	P126TI-
○ Engine Type	4-Cycle, In-line, 6-Cylinder Diesel, water cooled, Turbo charged & intercooled
○ Bore x stroke	123 x 155 mm
○ Displacement	11 051 liters
○ Compression ratio	
○ Rotation	Counter clockwise viewed from Flywheel
○ Firing order	1-5-3-6-2-4
○ Injection timing	16°±1° RTDC
○ Dry weight	780kg(with Fan)
○ Dimension (LxWxH)	1 384 x 1 109 x 1 195 mm
○Fly wheel housing	
○ Fly wheel	Clutch NO 14M
ONumber of teeth on flywheel	152
© ENGINE MOUNTING	
Maximum Bending Moment at Rear Face to Block	1325 N ⋅ M
© EXHAUST SYSTEM	
Maximum Back Pressure	5.9 kPa
O AIR INDUCTION SYSTEM	
Maximum Intake Air Restriction	
. With Clean Filter Element	2.16 kPa
. With Dirty Filter Element	6.23 kPa
OMax. static pressure after Radiator	0.125 kPa



© COOLING SYSTEM

Water circulation by centrifugal pump on engine			
○ Cooling method	Fresh water forced circulation		
○ Coolant capacity	Engine Only: Approx. 19 lit., With Radiator : Approx. 51 lit.(standard		
○ Coolant flow	liters / min		
○ Pressure Cap	Max. 49 kPa		
○ Water Temperature			
- Maximum for standby and Prime	103℃		
- Before start of full load	40.0℃		
○ Water pump	Centrifugal type driven by Gear		
○ Thermostat Type and Range	Wax – pellet type, Opening temp. 71°C , Full open temp. 85°C		
○ Cooling fan	Blower type, Plastic , 755 mm diameter, 7 blade		
○ Max. external coolant system restriction	Not Available		
UBRICATION SYSTEM			
Force-feed lubrication by gear pump, lubricating	oil cooling in cooling water circuit of engine.		
○ Lub. Method	Fully forced pressure feed type		
○ Oil pump	Gear type driven by crank-shaft gear		
○ Oil filter	Full flow, cartridge type		
○ Oil capacity	Max. 23 liters , Min. 20 liters		
○ Lub oil pressure	Idle Speed : Min 100 kPa		
	Governed Speed : Min 250 kPa		
○ Maximum oil temperature	120℃		
○ Angularity limit	Front down 10 deg , Front up 10 deg , Side to side 22.5 deg		
○ Lubrication oil	Refer to Operation Manual		
O FUEL SYSTEM			
Bosch type in-line pump with integrated, electron	nagnetic actuator.		
○ Injection pump	Zexel in-line "P" type		
○ Governor	Electric type (all speed control)		
○ Speed drop	G3 Class (ISO 8528)		
○ Feed pump	Mechanical type in inipump		
○ Injection nozzle ○ Opening pressure	Multi hole type		
○ Opening pressure	21.1 MPa		
○ Fuel filter	Full flow, cartridge type with water drain valve.		
○ Maximum fuel inlet restriction	10 kPa		
○ Maximum fuel return restriction	60 kPa		
○ Fuel feed pump Capacity	230 litore / hr		
○ Used fuel	Diesel fuel oil		
© ELECTRICAL SYSTEM			
Battery Charging Alternator	28.5V x 45A alternator		
Voltage regulator	Built-in type IC regulator		
Starting motor Pattony Voltage	24V x 6.0 kW 24V		
Battery VoltageBattery Capacity	150 Ah (recommended)		
Starting aid (Option)	Block heater		



O VALVE SYSTEM

○ Туре		Overhead valve type		
Number of valve	Intake 1, exhaust	Intake 1, exhaust 1 per cylinder		
 Valve lashes at cold 	Intake 0.3mm, Exhaust 0.3mm			
Valve timing				
	Opening	Close		
Intake valve	18 deg. BTDC	34 deg. ABDC		
Exhaust valve	46 deg. BBDC	14 deg. ATDC	•••••	

© PERFORMANCE DATA Prime Power		ver	Standby Power		
○ Governed Engine speed	rpm	1500	1800	1500	1800
○ Engine Idle Speed	rpm	800	800	800	800
○ Over speed limit	rpm	1650	1980	1650	1980
○ Gross Engine Power Output	kW	265	307	294	342
	ps	360	418	400	465
O Break Mean effective pressur	∙є Мра	1.92	1.86	2.13	2.06
○ Mean Piston Speed	m/s	7.75	9.3	7.75	9.3
○ Friction Horsepower	kW	24	33	24	33
	ps	32.63	44.87	32.63	44.87
 Specific fuel consumption 	***************************************				
25% load	liters/hr	16.9	20.6	18.3	22.2
50% load	liters/hr	31.3	37.0	34.9	41.4
75% load	liters/hr	47.0	56.0	51.6	61.5
100% load	liters/hr	63.1	73.8	77.6	89.5
Maximum Lube oil consumpti	c g/h	252	292.6	280	325.5
○ Fan Power	kW	7	11	7	11
○ Exhaust Noise at 1m Horizon	tally from Cent	erline of Exhaust Pipe dis	sta		
(without Fan)	dB(A)	97.1	98.3	97.1	98.3

The all data and the specific fuel consumption are based on ISO 3046/1, Standard reference conditions are in accordance with 298 K(25° Celsius) air temperature, 100kPa(1000mbar) air pressure, 60% relative humidity, 110m(361ft) altitude.

Operation At Elevated Temperature And Altitude: The engine may be operated at :

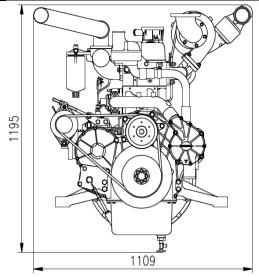
1800 rpm & 1500rpm up to 750~ 1000m and 30°C without power deration

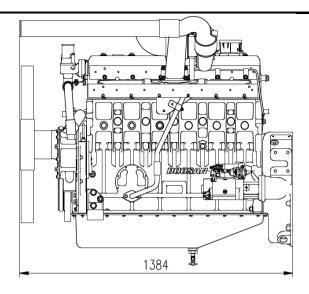
For sustained operation above these conditions, derate by 3% per 304m , and $\,$ 2% per 11 $\,$ °C

Engine Data with Dry Type Ex					
Intake Air Flow	m3/min	20.68	28.23	22.33	30.22
○ Exhaust gas temp. after turbo		590	500	650	580
○ Exhaust Gas Flow	m3/min	47.4	61.6	51.2	64.2
○ Heat Rejection to Exhaust	kW	222.4	260.1	273.5	315.4
○ Heat Rejection to Coolant	kW	96.7	113.1	118.9	137.1
○ Heat Rejetion to Intercooler	kW	51.6	60.3	63.4	73.1
 Radiated Heat to Ambient 	kW	22.6	26.4	27.7	32.0
 Cooling water circulation 	liters/min	265	320	265	320
○ Cooling fan air flow	m3/min	450	530	450	530



◆ ENGINE DIMENSION





♦ CONVERSION TABLE

in. = mm x 0.0394

 $PS = kW \times 1.3596$

 $psi = kg/cm2 \times 14.2233$

in3 = lit. x 61.02

 $hp = PS \times 0.98635$

 $lb = kg \times 2.20462$

 $kW = Kcal/sec \times 0.239$

 $lb/ft = N.m \times 0.737$

U.S. gal = lit. x = 0.264

kW = 0.2388 kcal/s

 $lb/PS.h = g/kW.h \times 0.00162$

 $cfm = m^3/min \times 35.336$

Mpa = Pa x 1000 = bar x 10

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