DCEC CUMMINS ENGINE Co.,LTD

Generator Engine Performance Data

Basic Engine Model:

**4BTA3.9-GM47**

**FR92492**

**47kW @ 1500 RPM**

| Configuration | CPL Code | Revision |
|---|---|---|
| D383060MX02 | CPL:2720 | 2009-4-15 |

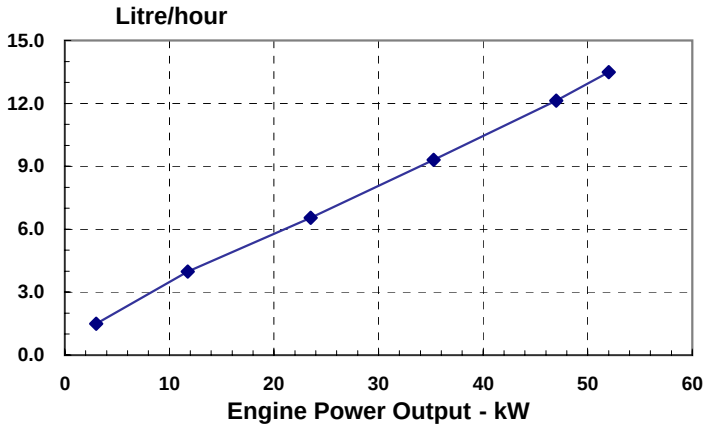
| | | | |
|---|---|---|---|
| Compression Ratio: | **17.3 : 1** | Aspiration: | **Turbocharged and Aftercooled** |
| Bore: | **102 mm** | Displacement: | **3.9 L** |
| Storke: | **120 mm** | No. of Cylinders: | **4** |
| Governor Regulation: | **⩽3%** | Fuel System: | **BYC A/GAC 24V** |

All data is based on the engine operating with fuel system, water pump, and 10 in $H_2O$ (2.488 kPa) inlet air restriction with 5.98 in (152mm) inner diameter, and with 2.01 in Hg (7 kPa) exhaust restriction with 4.02 in (102 mm) inner diameter; not included are alternator, fan, optional equipment and driven components. Coolant flows and heat rejection data based on coolants as 50% ethylene glycol/50% water. All data is subject to change without notice.

| Engine Speed | Standby Power | | Prime Power | | Continuous Power | |
|---|---|---|---|---|---|---|
| RPM | kW | HP | kW | HP | kW | HP |
| 1500 | 52 | 70 | 47 | 63 | TBD | TBD |

## Engine Performance Data @ 1500 RPM

| OUTPUT POWER | | | FUEL CONSUMPTION | |
|---|---|---|---|---|
| % | kW | HP | g/kW.h | L/h |
| STANDBY POWER | | | | |
| 100 | 52 | 70 | 214 | 13.5 |
| PRIME POWER | | | | |
| 100 | 47 | 63 | 213 | 12 |
| 75 | 35 | 47 | 218 | 9 |
| 50 | 24 | 31 | 230 | 7 |
| 25 | 12 | 16 | 280 | 4 |
| CONTINUOUS POWER | | | | |
| TBD | TBD | TBD | TBD | TBD |




## Engine Performance Data @ 1800 RPM

**Not Available at 1800 RPM**

**Not Available at 1800 RPM**

Curves shown above represent gross engine performance capabilities obtained and corrected in accordance with GB/T18297 conditions of 100kPa (29.61 in. Hg) barometric pressure [80 m (263 ft.) altitude], 25°C (77°F) inlet air temperature, and 1 kPa (0.30 in. Hg) water vapor pressure with No.0# diesel fuel.

## GENERAL ENGINE DATA

| | | |
|---|---|---|
| Weight (Dry) Engine only - Average | -kg | 350 |
| Idle Speed Setting | -rpm | 1000±50 |
| Compression Ratio | | 17.3 : 1 |
| Piston Speed* | -m/sec | 6.0 |
| Firing Order | | 1-5-3-6-2-4 |

## ENGINE MOUNTING

| | | |
|---|---|---|
| Maximum (Static) Bending Moment at Rear Face of Block | -N•m | 1356 |

## EXHAUST SYSTEM*

| | | |
|---|---|---|
| Maximum Back Pressure | -kPa | 10.1 |
| Exhaust Gas Flow | -litre/sec | TBD |
| Exhaust Gas Temperature Turbine Out (Rated Power) | -°C | 530 |
| Exhaust Gas Temperature Turbine Out （Standby Power) | -°C | 560 |
| Maximum Static Supported Weight at the Turbocharger Outlet Flange | -N•m | 6 |

## AIR INTAKE SYSTEM*

| | | |
|---|---|---|
| Maximum Intake Air Restriction with Heavy Duty Air Cleaner | | |
| — Dirty Element | -kPa | 6 |
| — Clean Element | -kPa | 4 |
| Minimum Dirt Holding Capacity with Heavy Duty Air Cleaner | -g/cfm | 53 |
| Maximum Temperature Rise from Ambient to the Inlet of the Turbocharger | -℃ | 17 |
| Intake Manifold Pressure | -mmHg | TBD |
| Intake Air Flow* | -litre/sec | TBD |
| Heat Rejection to Ambient | -kW | TBD |

## FUEL SYSTEM*

| | | |
|---|---|---|
| Maximum Fuel Flow on the Supply Side of the Fuel Pump | -litre/hr | 127 |
| Maximum fuel supply restriction at fuel pump inlet | | |
| — with clean fuel filter element(s) at maximum fuel flow | -kPa | 8 |
| — with dirty fuel filter element(s) at maximum fuel flow | -kPa | 14 |
| Maximum fuel inlet temperature | -℃ | 60 |
| Maximum Allowable Return Line Pressure | -kPa | 34 |

## LUBRICATION SYSTEM

| | | |
|---|---|---|
| Normal Operating Oil Pressure Range | | |
| — minimum low idle | -kPa | 69 |
| — rated speed (Min/Max) | -kPa | 207 - 448 |
| Maximum Sump Oil Temperature | -℃ | 120 |
| Minimum Required Lube System Capacity - Sump plus Filters | -litre | 10.9 |
| By-pass Filtration Required | -Yes/No | Yes |

## COOLING SYSTEM*

| | | |
|---|---|---|
| Coolant capacity - engine only | -litre | 7.9 |
| Minimum Coolant Makeup Capacity | -litre | 3 |
| Standard (modulating) Thermostat Range | -℃ | 82-95 |
| Minimum pressure cap rating at sea level | -kPa | 69 |
| Maximum coolant operating temperature at engine outlet (max. top tank temp): | -℃ | 100 |
| Minimum operating block coolant temperature | -℃ | 71 |
| Minimum coolant expansion space (% of system capacity) | - % | 5 |
| Heat Rejection to Coolant | -kW | TBD |
| Maximum recommended external coolant flow restriction in engine circuit: | -kPa | 34 |

## CRANKING SYSTEM

| | | 12V | 24V |
|---|---|---|---|
| Minimum Battery Capacity - Cold Soak at 0°F (–18°C) or Above | | | |
| — Engine Only - Cold Cranking Amperes | -CCA | 1375 | 625 |
| — Engine Only - Reserve Capacity | -min. | TBD | TBD |
| Maximum Starting Circuit Voltage Drop | -Volts | TBD | |
| Minimum Ambient Temperature for Unaided Cold Start | -℃(℉) | -12 | |
| Minimum Cranking Speed Required for Unaided Cold Start | -rpm | TBD | |
| Maximum starting circuit resistance | -Ohm | 0.0012 | 0.004 |

## EMISSIONS DATA (in accordance with ISO8178 Cycle D2)

| | | |
|---|---|---|
| $NO_X$(Oxides of Nitrogen) | -g/kW.h | N.A. |

*All Data at Rated Conditions

ALL DATA CERTIFIED WITHIN 5%

TBD = To Be Decided N/A = Not Applicable N.A. = Not Available

All data is subject to change without notice, sorry for inform.