Engine Performance Data @ 1500 RPM

<table>
<thead>
<tr>
<th>OUTPUT POWER %</th>
<th>kWm</th>
<th>BHP</th>
<th>kg/kWm·h</th>
<th>lb/BHP·h</th>
<th>Litre/hour</th>
<th>U.S. Gal/hour</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STANDBY POWER</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>2145</td>
<td>2875</td>
<td>0.198</td>
<td>0.326</td>
<td>500</td>
<td>131.8</td>
</tr>
<tr>
<td>75</td>
<td>1609</td>
<td>2156</td>
<td>0.194</td>
<td>0.319</td>
<td>368</td>
<td>97.0</td>
</tr>
<tr>
<td>50</td>
<td>1072</td>
<td>1438</td>
<td>0.200</td>
<td>0.329</td>
<td>252</td>
<td>66.6</td>
</tr>
<tr>
<td>25</td>
<td>536</td>
<td>719</td>
<td>0.222</td>
<td>0.365</td>
<td>140</td>
<td>36.9</td>
</tr>
</tbody>
</table>

Power Derate Curve @ 1500 RPM

Operation At Elevated Temperature And Altitude:
For sustained operation above these conditions, derate by an additional 3% per 300 m (1000 ft), and 10.9% per 10°C (18°F).

CONVERSIONS:
(litres = U.S. Gal x 3.785) (U.S. Gal = litres x 0.2642)

Data shown above represent gross engine performance capabilities obtained and corrected in accordance with ISO-3046 conditions of 100 kPa (29.53 in Hg) barometric pressure [110 m (361 ft) altitude], 25 °C (77 °F) air inlet temperature, and relative humidity of 30% with No. 2 diesel or a fuel corresponding to ASTM D2.

Derates shown are based on 15 in H$_2$O air intake restriction and 2 in Hg exhaust back pressure.

The fuel consumption data is based on No. 2 diesel fuel weight at 0.85 kg/litre (7.1 lbs/U.S. gal). Power output curves are based on the engine operating with fuel system, water pump and lubricating oil pump; not included are battery charging alternator, fan, optional equipment and driven components.

Data Status: Limited Production
Data Tolerance: ± 5%
### GENERAL ENGINE DATA

- **Type:** 4-Cycle; 60° Vee; 16-Cylinder Diesel
- **Aspiration:** Turbocharged and Low Temperature Aftercooled (2 Pump / 2 Loop)
- **Bore x Stroke:** 159 x 190 (6.25 x 7.48) mm
- **Displacement:** 60.2 (3673) litre
- **Compression Ratio:** 14.5 : 1

#### Installation Diagram

- **CPL Number:**
  - Fan to Flywheel: 3170455
  - Engine Critical Parts List: 8452

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  - Fan to Flywheel: 3170455
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#### Fan to Flywheel Engine

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dry Weight</td>
<td>7185 (15835) kg (lb)</td>
</tr>
<tr>
<td>Wet Weight</td>
<td>7540 (16620) kg (lb)</td>
</tr>
</tbody>
</table>

#### Moment of Inertia of Rotating Components

- **with FW 6064 Flywheel (SAE 0) & DA 6149:** 17.86 (424.3) kg • m^2 (lb • ft^2)
- **with FW 6037 Flywheel (SAE 00) & DA 6149:** 28.36 (673.6) kg • m^2 (lb • ft^2)

#### Center of Gravity from Front Face of Block

- 1001 (39.4) mm (in)

#### Center of Gravity Above Crankshaft Centerline

- 219 (8.6) mm (in)

#### Maximum Static Loading at Rear Main Bearing

- 1134 (2500) kg (lb)

### ENGINE MOUNTING

- **Maximum Bending Moment at Rear Face of Block:** 10350 (7634) N • m (lb • ft)

### EXHAUST SYSTEM

- **Maximum Back Pressure at 1500 RPM (Standby Power):** 51 (2) mm Hg (in Hg)

### AIR INDUCTION SYSTEM

- **Maximum Intake Air Restriction**
  - with Dirty Filter Element: 6.2 (25) kPa (in H_2O)
  - with Clean Filter Element: 3.7 (15) kPa (in H_2O)

### COOLING SYSTEM (Separate Circuit Aftercooling Required)

- **Coolant Capacity**
  - Engine: 159 (42) litre (US gal)
  - Aftercoolers: 34 (9) litre (US gal)

#### Minimum Pressure Cap (for Cooling Systems with less than 2m [6 ft.] Static Head)

- 76 (11) kPa (psi)

#### Maximum Static Head of Coolant Above Engine Crank Centerline

- 18.3 (60) m (ft)

#### Jacket Water Circuit Requirements

- **Maximum Coolant Friction Head External to Engine — 1500 rpm:** 48 (7) kPa (psi)

- **Thermostat (Modulating) Range**
  - °C (°F): 82 / 93 (180 / 200)

#### Aftercooler Circuit Requirements

- **Maximum Coolant Friction Head External to Engine — 1500 rpm:** 35 (5) kPa (psi)

#### Thermostat (Modulating) Range

- °C (°F): 46 - 57 (115 - 135)

### LUBRICATION SYSTEM

- **Oil Pressure @ Idle Speed:** 138 (20) kPa (psi)
- **@ Governed Speed:** 345-483 (50-70) kPa (psi)
- **Maximum Oil Temperature:** 121 (250) °C (°F)
- **Oil Capacity with OP6086 Oil Pan: Low - High:** 146-176 (38.5-46.5) litre (US gal)
- **Total System Capacity (with Combo Filter):** 195 (51.5) litre (US gal)
### FUEL SYSTEM

Type Injection System: Cummins HPI-PT

- **Maximum Restriction at PT Fuel Injection Pump**
  - with Clean Fuel Filter: mm Hg (in Hg) 102 (4.0)
  - with Dirty Fuel Filter: mm Hg (in Hg) 203 (8.0)

- **Maximum Restriction of Engine Fuel Filter Head and Clean Fuel Filter**
  - mm Hg (in Hg) 38 (1.5)

- **Maximum Allowable Head on Injector Return Line (Consisting of Friction Head and Static Head)**
  - mm Hg (in Hg) 229 (9.0)

- **Maximum Fuel Inlet Temperature**
  - °C (°F) 70 (160)

- **Maximum Fuel Flow to Injection Pump**
  - litre / hr (US gph) 1515 (400)

- **Maximum Drain Flow**
  - litre / hr (US gph) 1460 (370)

### ELECTRICAL SYSTEM

- **Cranking Motor (Heavy Duty, Positive Engagement)**
  - volt 24

- **Maximum Allowable Resistance of Cranking Circuit**
  - ohm .002

- **Minimum Recommended Battery Capacity**
  - 0°F CCA 1800
  - 0°F CCA 1800
  - 0°F CCA 2200

### COLD START CAPABILITY

- **Minimum Ambient Temperature for Cold Start with____ watt Coolant Heater to Rated Speed**
  - °C (°F) TBD (TBD)

- **Minimum Ambient Temperature for NFPA 110 Cold Start (90°F Minimum Coolant Temperature)**
  - °C (°F) 10 (50)

### PERFORMANCE DATA

All data is based on:
- Engine operating with fuel system, water pump, lubricating oil pump, air cleaner and exhaust silencer; not included are battery charging alternator, fan, and optional driven components.
- Engine operating with fuel corresponding to grade No. 2-D per ASTM D975.
- ISO 3046, Part 1, Standard Reference Conditions of:
  - Barometric Pressure: 100 kPa (29.53 in Hg)
  - Air Temperature: 25 °C (77 °F)
  - Altitude: 110 m (361 ft)
  - Relative Humidity: 30%

#### STANDBY POWER

<table>
<thead>
<tr>
<th></th>
<th>60 hz</th>
<th>50 hz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Governed Engine Speed</td>
<td>rpm</td>
<td>rpm</td>
</tr>
<tr>
<td>Engine Idle Speed</td>
<td>rpm</td>
<td></td>
</tr>
<tr>
<td>Gross Engine Power Output</td>
<td>kWm (BHP)</td>
<td></td>
</tr>
<tr>
<td>Brake Mean Effective Pressure</td>
<td>kPa (psi)</td>
<td></td>
</tr>
<tr>
<td>Piston Speed</td>
<td>m / s (ft / min)</td>
<td></td>
</tr>
<tr>
<td>Friction Horsepower</td>
<td>kWm (HP)</td>
<td></td>
</tr>
<tr>
<td>Engine Jacket Water Flow at Stated Friction Head External to Engine:</td>
<td>litre / s (US gpm)</td>
<td></td>
</tr>
<tr>
<td>• 4 psi Friction Head</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Maximum Friction Head</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Engine Data

<table>
<thead>
<tr>
<th>Item</th>
<th>60 hz</th>
<th>50 hz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intake Air Flow</td>
<td>litre / s (cfm)</td>
<td></td>
</tr>
<tr>
<td>Exhaust Gas Temperature</td>
<td>°C (°F)</td>
<td>485 (905)</td>
</tr>
<tr>
<td>Exhaust Gas Flow</td>
<td>litre / s (cfm)</td>
<td>6315 (13375)</td>
</tr>
<tr>
<td>Air to Fuel Ratio</td>
<td>air : fuel</td>
<td>25.2:1</td>
</tr>
<tr>
<td>Radiated Heat to Ambient</td>
<td>kWm (BTU / min)</td>
<td>205 (11460)</td>
</tr>
<tr>
<td>Heat Rejection to Engine Jacket Radiator</td>
<td>kWm (BTU / min)</td>
<td>620 (35215)</td>
</tr>
<tr>
<td>Heat Rejection to Exhaust</td>
<td>kWm (BTU / min)</td>
<td>1515 (86205)</td>
</tr>
<tr>
<td>Heat Rejection to Fuel*</td>
<td>kWm (BTU / min)</td>
<td>35 (2000)</td>
</tr>
</tbody>
</table>

#### Engine Aftercooler Data

<table>
<thead>
<tr>
<th>Item</th>
<th>kWm (BTU / min)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Heat Rejection to Coolant</td>
<td></td>
<td>545 (30785)</td>
</tr>
</tbody>
</table>

#### Aftercooler Water Flow at Stated Friction Head External to Engine:

<table>
<thead>
<tr>
<th>Item</th>
<th>litre / s (US gpm)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• 2 psi Friction Head</td>
<td>7.1 (112)</td>
<td></td>
</tr>
<tr>
<td>• Maximum Friction Head</td>
<td>6.9 (109)</td>
<td></td>
</tr>
</tbody>
</table>

* This is the maximum heat rejection to fuel, which is at low load.

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**ENGINE MODEL:** QSK60-G8  
**DATA SHEET:** DS-6438-B  
**DATE:** 7 Aug 03  
**CURVE NO.:** FR-6438

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**Cummins, Inc.**

Columbus, Indiana 47202-3005

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**NOTES:**

- **N.A.** - Data is Not Available
- **N/A** - Not Applicable to this Engine
- **TBD** - To Be Determined