

# FUJIAN EPOS ELECTRIC MACHINERY CO., LTD

**EMEAN**  
POWER



ENGINE MODEL: KTA50-GS8  
CURVE & DATASHEET: FR-6261

EMEAN POWER

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# KTA50-GS8 Advantage Data Sheet

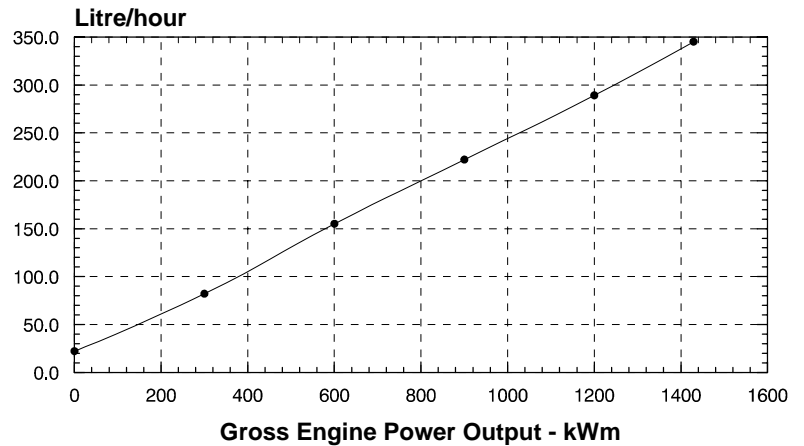
Cummins Inc. Columbus, Indiana 47201

|  |  |                                   |
|--|--|-----------------------------------|
| Curve Number: <b>FR-6261</b>                           | Engine Critical Parts List: <b>2354 (1P/2L), 2859 (2P/2L)</b>    | Date: <b>21Jan02</b>              |
| Displacement : <b>50.3 litre (3067 in<sup>3</sup>)</b> | Bore : <b>159 mm (6.25 in.)</b>                                  | Stroke : <b>159 mm (6.25 in.)</b> |
| No. of Cylinders : <b>16</b>                           | Aspiration : <b>Turbocharged and Low Temperature Aftercooled</b> |                                   |

| Engine Speed<br>RPM | Overload Power Rating |             | Prime Power Rating |             |
|---------------------|-----------------------|-------------|--------------------|-------------|
|                     | kWm                   | BHP         | kWm                | BHP         |
| <b>1500</b>         | <b>1429</b>           | <b>1915</b> | <b>1287</b>        | <b>1725</b> |
| <b>1800</b>         | -----                 | -----       | -----              | -----       |

## Engine Performance Data @ 1500 RPM

| OUTPUT POWER          |      |      | FUEL CONSUMPTION |              |                |                   |
|-----------------------|------|------|------------------|--------------|----------------|-------------------|
| %                     | kWm  | BHP  | kg/<br>kWm·h     | lb/<br>BHP·h | litre/<br>hour | U.S. Gal/<br>hour |
| <b>OVERLOAD POWER</b> |      |      |                  |              |                |                   |
| 100                   | 1429 | 1915 | 0.206            | 0.338        | 345            | 91.2              |
| <b>PRIME POWER</b>    |      |      |                  |              |                |                   |
| 100                   | 1287 | 1725 | 0.204            | 0.336        | 309            | 81.6              |
| 75                    | 965  | 1294 | 0.210            | 0.345        | 238            | 62.8              |
| 50                    | 644  | 863  | 0.221            | 0.363        | 167            | 44.1              |
| 25                    | 322  | 431  | 0.232            | 0.383        | 88             | 23.3              |



## Engine Performance Data @ 1800 RPM

**Not Available at 1800 RPM**

**Not Available at 1800 RPM**

**CONVERSIONS:** (Litres = U.S. Gal x 3.785) (kWm = BHP x 0.746) (U.S. Gal = Litres x 0.2642) (BHP = Engine kWm x 1.34)

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. See reverse side for application rating guidelines.

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.

*D.K. Trueblood*



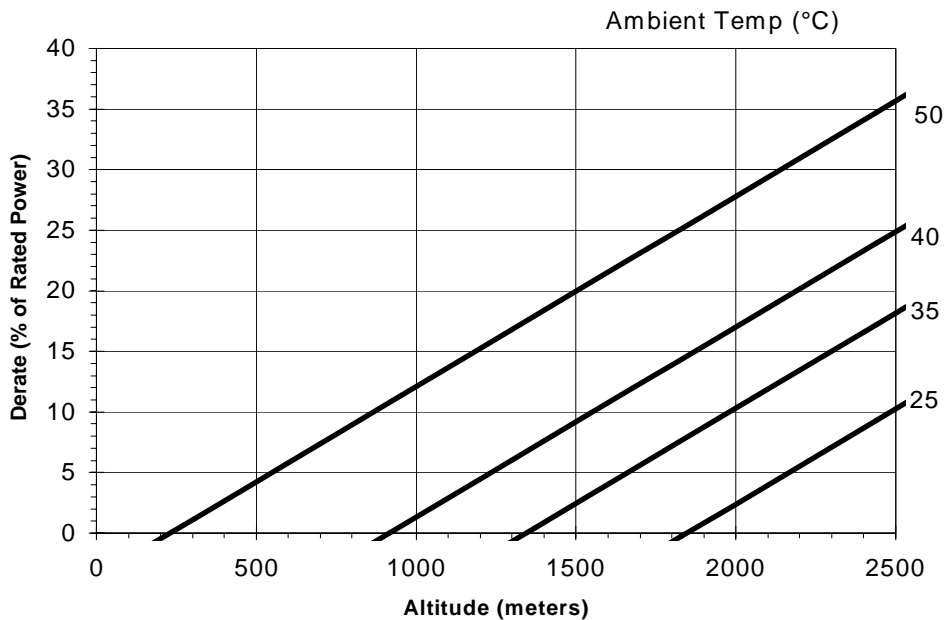
# KTA50-GS8 Advantage Data Sheet

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## POWER RATING APPLICATION GUIDELINES FOR EMERGENCY STANDBY ENGINES FOR APPLICATION IN CORPORATE GENERATOR SETS ONLY

These guidelines have been formulated to ensure proper application of generator drive engines in Cummins corporate generator set installations. Generator drive engines are not designed for and shall not be used in variable speed D.C. generator set applications.

Applicable for supplying emergency power for the duration of the utility power outage. No overload capability is available for this standby rating. Under no condition is an engine allowed to operate in parallel with the public utility at the Emergency Standby Power rating. This rating should be applied where reliable utility power is available. An emergency standby rated engine should be sized for a maximum of an **70%** typical load factor and **200 hours** of operation per year. This includes a maximum of **1 hour** in a **12 hour** period at the Emergency Standby Power rating. Emergency Standby rating should never be applied except in true emergency power outages. Negotiated power outages contracted with a utility company are not considered an emergency.



### Reference Standards:

BS-5514 and DIN-6271 standards are based on ISO-3046.

### Operation At Elevated Temperature And Altitude:

For sustained operation above these conditions, derate by an additional 4.6% per 300m (1000ft) and 12% per 10°C (18°F)

**NOTE:** Derates shown are based on 15" H<sub>2</sub>O air intake restriction and 2" Hg exhaust back pressure.





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## ELECTRICAL SYSTEM

|  |           |       |
|--|-----------|-------|
| Cranking Motor (Heavy Duty, Positive Engagement) ..... | — volt    | 24    |
| Battery Charging System, Negative Ground .....         | — ampere  | 35    |
| Maximum Allowable Resistance of Cranking Circuit ..... | — ohm     | 0.002 |
| Minimum Recommended Battery Capacity                   |           |       |
| • Cold Soak @ 50°F (10°C) and Above .....              | — 0°F CCA | 1280  |
| • Cold Soak @ 32°F to 50°F (0°C to 10°C) .....         | — 0°F CCA | 1800  |
| • Cold Soak @ 0°F to 32°F (-18°C to 0°C) .....         | — 0°F CCA | 1800  |

## COLD START CAPABILITY

|  |           |    |      |
|--|-----------|----|------|
| Minimum Ambient Temperature for Aided (with Coolant Heater) Cold Start within 10 seconds ..... | — °F (°C) | 50 | (10) |
| Minimum Ambient Temperature for Unaided Cold Start .....                                       | — °F (°C) | 45 | (7)  |

## 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%           |

|  |       |          |
|--|-------|----------|
| Steady State Stability Band at any Constant Load .....   | — %   | +/- 0.25 |
| Estimated Free Field Sound Pressure Level of a Typical Generator Set;<br>Excludes Exhaust Noise; at Rated Load and 7.5 m (24.6 ft); 1500 rpm ..... | — dBA | 92.4     |
| Exhaust Noise at 1 m Horizontally from Centerline of Exhaust Pipe Outlet Upwards at 45° .....  | — dBA | N.A.     |

|                                     |                          |
|-------------------------------------|--------------------------|
| Governed Engine Speed .....         | — rpm                    |
| Engine Idle Speed .....             | — rpm                    |
| Gross Engine Power Output .....     | — BHP (kW <sub>m</sub> ) |
| Brake Mean Effective Pressure ..... | — psi (kPa)              |
| Piston Speed .....                  | — ft / min (m / s)       |
| Friction Horsepower .....           | — HP (kW <sub>m</sub> )  |

### Engine Data with Dry Type Exhaust Manifold

|                                 |                                |
|---------------------------------|--------------------------------|
| Intake Air Flow .....           | — cfm (liter / s)              |
| Exhaust Gas Temperature .....   | — °F (°C)                      |
| Exhaust Gas Flow .....          | — cfm (liter / s)              |
| Air to Fuel Ratio .....         | — air : fuel                   |
| Radiated Heat to Ambient .....  | — BTU / min (kW <sub>m</sub> ) |
| Heat Rejection to Exhaust ..... | — BTU / min (kW <sub>m</sub> ) |

### Additional Engine Aftercooler Data (2 Pump / 2 Loop)

|  |                                |
|--|--------------------------------|
| Engine Jacket Coolant Flow at Stated Friction Head External to Engine: |                                |
| • 4 psi Friction Head .....  | — US gpm (liter / s)           |
| • Maximum Friction Head .....  | — US gpm (liter / s)           |
| Heat Rejection to Coolant (Aftercooler) .....                          | — BTU / min (kW <sub>m</sub> ) |
| Heat Rejection to Coolant (Engine) .....                               | — BTU / min (kW <sub>m</sub> ) |
| Aftercooler Coolant Flow at Stated Friction Head External to Engine:.  |                                |
| • 2 psi Friction Head .....  | — US gpm (liter / s)           |
| • Maximum Friction Head .....  | — US gpm (liter / s)           |

### Additional Engine Aftercooler Data (1 Pump / 2 Loop)

|  |                                |
|--|--------------------------------|
| Engine Jacket Coolant Flow at Stated Friction Head External to Engine: |                                |
| • 4 psi Friction Head .....  | — US gpm (liter / s)           |
| • Maximum Friction Head .....  | — US gpm (liter / s)           |
| Heat to be Rejected by Low Temperature Radiator* .....                 | — BTU / min (kW <sub>m</sub> ) |
| Heat to be Rejected by Jacket Water Radiator* .....                    | — BTU / min (kW <sub>m</sub> ) |
| Aftercooler Coolant Flow at Stated Friction Head External to Engine:.  |                                |
| • 2 psi Friction Head .....  | — US gpm (liter / s)           |
| • Maximum Friction Head .....  | — US gpm (liter / s)           |

| <u>OVERLOAD POWER</u>            |             | <u>PRIME POWER</u>               |             |
|----------------------------------|-------------|----------------------------------|-------------|
| <b>Not Available at 1800 RPM</b> | 1500        | <b>Not Available at 1800 RPM</b> | 1500        |
|                                  | 725 - 775   |                                  | 725 - 775   |
|                                  | 1915 (1429) |                                  | 1725 (1286) |
|                                  | 330 (2275)  |                                  | 299 (2062)  |
|                                  | 1562 (7.9)  |                                  | 1562 (7.9)  |
|                                  | 155 (116)   |                                  | 155 (116)   |
|                                  | 3500 (1655) |                                  | 3350 (1581) |
|                                  | 950 (510)   |                                  | 930 (499)   |
|                                  | 9210 (4350) |                                  | 8555 (4038) |
|                                  | 23.2 : 1    |                                  | 24.5 : 1    |
| 12000 (210)                      | 10700 (299) |                                  |             |
| 54200 (954)                      | 47500 (835) |                                  |             |
| 440 (27.8)                       | 440 (27.8)  |                                  |             |
| 400 (25.2)                       | 400 (25.2)  |                                  |             |
| 15600 (275)                      | 12600 (221) |                                  |             |
| 35000 (615)                      | 32500 (571) |                                  |             |
| 100 (6.3)                        | 100 (6.3)   |                                  |             |
| 95 (6.0)                         | 95 (6.0)    |                                  |             |
| 352 (22.2)                       | 352 (22.2)  |                                  |             |
| 320 (20.2)                       | 320 (20.2)  |                                  |             |
| 30400 (535)                      | 32500 (571) |                                  |             |
| 22030 (390)                      | 12250 (215) |                                  |             |
| 85 (5.4)                         | 85 (5.4)    |                                  |             |
| 80 (5.0)                         | 80 (5.0)    |                                  |             |

\* See AEB 90.39 1 Pump / 2 Loop KTA50-G8/9 system.

**N.A.** - Data is Not Available  
**N/A** - Not Applicable to this Engine  
**TBD** - To Be Determined  
 Columbus, Indiana 47202-3005

**ENGINE MODEL :** KTA50-GS8  
**DATA SHEET :** DS-6261  
**DATE :** 21Jan02  
**CURVE NO. :** FR-6261