

No. of Cylinders: 16

Displacement: 50.3 litre (3067 in<sup>3</sup>)

# **CUMMINS ENGINE COMPANY, INC**

Columbus, Indiana 47201

### **ENGINE PERFORMANCE CURVE**

Basic Engine Model: KTA50-G3 Curve Number: FR-6250

Date:

Page No.

Engine Critical Parts List:

CPL: 2227

12Jan01

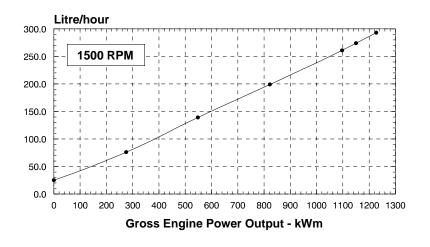
Bore : 159 mm (6.25 in.) Stroke : 159 mm (6.25 in.)

Aspiration : Turbocharged and Aftercooled

Engine Speed	Standby Power		Prime Power Rating				Continuous Power	
Engine Speed	Rat	Rating		Limited Time		ed Time	Rating	
RPM	kWm	ВНР	kWm	ВНР	kWm	ВНР	kWm	ВНР
1500	1227	1645	1150	1541	1097	1470	900	1206
1800	1380	1850	1300	1742	1220	1635	1000	1340

# **Engine Performance Data @ 1500 RPM**

OUT	PUT PO	WER	FUEL CONSUMPTION							
%	% kWm BHP		kg/ kWm∙h	lb/ litre/ n BHP·h hour		U.S. Gal/ hour				
STANDBY POWER										
100	1227	1645	0.203	0.334	293	77.4				
PRIME LIMITED TIME RUNNING POWER										
100	1150	1541	0.202	0.333	274	72.3				
PRIME	UNLII	MITED TI	ME RUNNI	NG POWE	₹					
100	1097	1470	0.202	0.333	261	69.0				
75	822	1102	0.206	0.338	199	52.5				
50	548	735	0.216	0.355	139	36.6				
25	275	368	0.234	0.385	76	20.0				
CONTINUOUS POWER										
100	900	1206	0.204	0.336	216	57.1				



**CONVERSIONS:** 

(Litres = U.S. Gal x 3.785)

 $(kWm = BHP \times 0.746)$ 

 $(U.S. Gal = Litres \times 0.2642)$ 

(BHP = Engine kWm x 1.34)

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

### STANDBY POWER RATING

Applicable for supplying emergency power for the duration of the utility power outage. No overload capability is available for this rating. Under no condition is an engine allowed to operate in parallel with the public utility at the Standby Power rating. This rating should be applied where reliable utility power is available. 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. Standby ratings should never be applied except in true emergency power outages. Negotiated power outages contracted with a utility company are not considered an emergency.

### PRIME POWER RATING

Applicable for supplying electric power in lieu of commercially purchased power. Prime Power applications must be in the form of one of the following two categories:

# UNLIMITED TIME RUNNING PRIME POWER

Prime Power is available for an unlimited number of hours per year in a 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 within a 12-hour period of operation. Total operating time at the 10% overload power shall not exceed 25 hours per year.

## LIMITED TIME RUNNING PRIME POWER

Limited Time Prime Power is available for a limited number of hours in a non-variable load application. It is intended for use in situations where power outages are contracted, such as in utility power curtailment. Engines may be operated in parallel to the public utility up to 750 hours per year at power levels never to exceed the Prime Power rating. The customer should be aware, however, that the life of any engine will be reduced by this constant high load operation. Any operation exceeding 750 hours per year at the Limited Time Prime Power rating should use the Continuous Power rating.

### CONTINUOUS POWER RATING

Applicable for supplying utility power at a constant 100% load for an unlimited number of hours per year. No overload capability is available for this rating.

Data shown above represent gross engine performance capabilities obtained and corrected in accordance with ISO-3046 conditions of 100 kPa (29.5 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.

TECHNICAL DATA DEPT. CERTIFIED WITHIN 5% CHIEF ENGINEER



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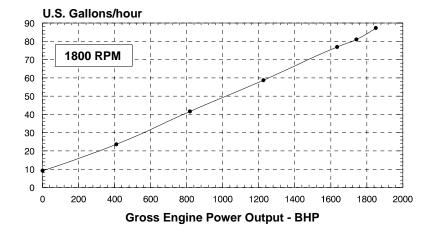
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No. of Cylinders : 16 Aspiration : Turbocharged and Aftercooled

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Engine Speed	Rat	ing	Limited Time Unlimited Time Ratin		ng			
RPM	kWm	ВНР	kWm	ВНР	kWm	ВНР	kWm	ВНР
1500	1227	1645	1150	1541	1097	1470	900	1206
1800	1380	1850	1300	1742	1220	1635	1000	1340

# Engine Performance Data @ 1800 RPM

OUT	PUT PO	VER	FUEL CONSUMPTION							
% kWm		ВНР	kg/ kWm∙h	•		U.S. Gal/ hour				
STANDBY POWER										
100	1380	1850	0.204	0.335	330	87.3				
PRIME LIMITED TIME RUNNING POWER										
100	1300	1742	0.203	0.334	310	81.0				
PRIME	PRIME UNLIMITED TIME RUNNING POWER									
100	1220	1635	0.203	0.334	291	76.9				
75	915	1226	0.207	0.340	222	58.7				
50	610	818	0.220	0.361	157	41.6				
25	305	409	0.249	0.410	89	23.6				
CONTINUOUS POWER										
100	1000	1340	0.206	0.338	242	63.8				



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