



KTA19-G8 Advantage Data Sheet

Cummins Inc. Columbus, Indiana 47201

Curve Number: FR-4428	Engine Critical Parts List: CPL- 8685	Date: 8July04
Displacement: 18.9litre (1150 in ³)	Bore: 159 mm (6.25 in.)	Stroke: 159 mm (6.25 in.)
No. of Cylinders: 6	Aspiration: Turbocharged and Aftercooled	

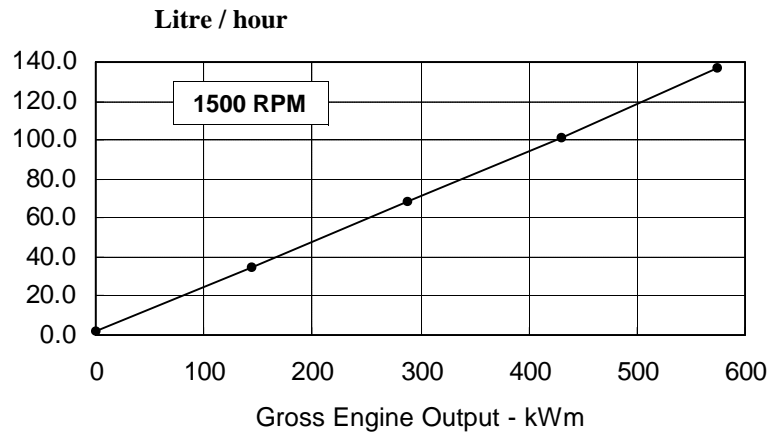
Emergency Standby Ratings for Application in Corporate Generator Sets Only

Engine Ratings:

Engine Speed RPM	Standby Power	
	kWm	BHP
1500	575	771

Engine Performance Data @ 1500 RPM

OUTPUT POWER			FUEL CONSUMPTION			
%	kWm	BHP	kg/ kWm·h	lb/ BHP·h	litre/ hour	U.S. Gal/ hour
STANDBY POWER						
100	575	771	0.203	0.334	137	36.3
75	431	578	0.200	0.327	101	26.7
50	288	386	0.202	0.330	68	18.0
25	144	193	0.208	0.336	35	9.3



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



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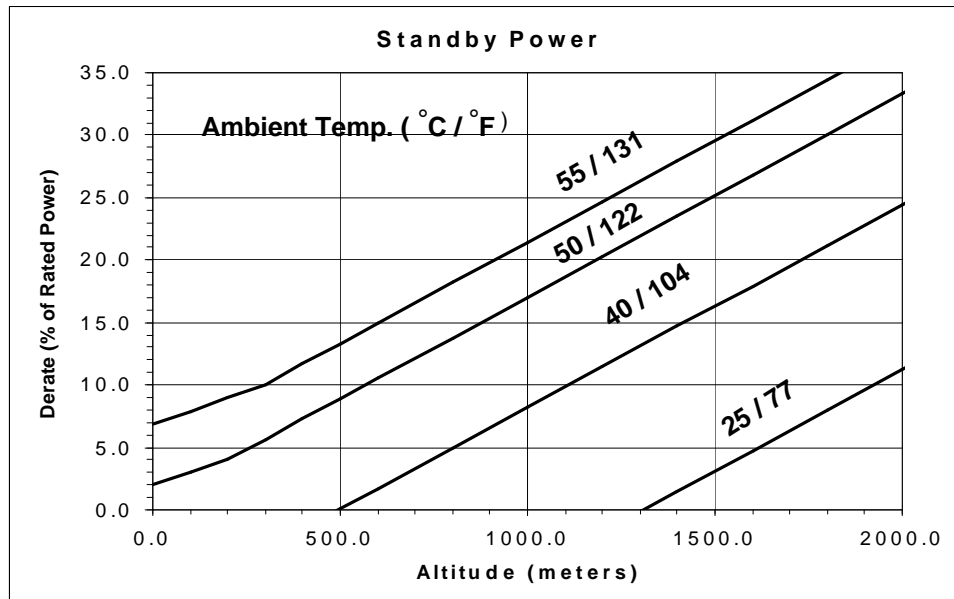
POWER RATING APPLICATION GUIDELINES FOR EMERGENCY STANDBY ENGINES FOR APPLICATION IN CORPORATE GENERATOR SETS ONLY

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.

Operation At Elevated Temperature And Altitude:

For sustained operation above these conditions, derate by an additional 4.9% per 300 m (1000 ft), and 9.7% per 10° C (18° F)





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Engine data Sheet

ENGINE MODEL : KTA19-G8 CONFIGURATION NUMBER: D193091DX02

DATA SHEET: DS-4428

Date: 8July04

PERFORMANCE CURVE:FR-4428

INSTALLATION DIAGRAM

Fan to Flywheel: 3626008

CPL NUMBER

Engine Critical Parts List:New

GENERAL ENGINE DATA

Type.....	4-Cycle; In-line; 6-Cylinder Diesel
Aspiration.....	Turbocharged and Aftercooled
Bore x Stroke..... — in x in (mm x mm)	6.25 x 6.25 (159 x 159))
Displacement..... — in ³ (litre)	1150 (18.9)
Compression Ratio.....	13.9 : 1

Dry Weight

Fan to Flywheel Engine..... — lb (kg)	4085	(1855)
Heat Exchanger Cooled Engine..... — lb (kg)	4572	(2076)

Wet Weight

Fan to Flywheel Engine..... — lb (kg)	4245	(1927)
Heat Exchanger Cooled Engine..... — lb (kg)	4808	(2183)

Moment of Inertia of Rotating Components

• with FW4001 Flywheel..... — lb _m • ft ² (kg • m ²)	170	(7.2)
• with FW 4006 Flywheel..... — lb _m • ft ² (kg • m ²)	199	(8.4)
Center of Gravity from Rear Face of Flywheel Housing..... — in (mm)	28.4	(721)
Center of Gravity Above Crankshaft Centerline..... — in (mm)	9.0	(229)
Maximum Static Loading at Rear Main Bearing..... — lb (kg)	2000	(908)

ENGINE MOUNTING

Maximum Bending Moment at Rear Face of Block..... — lb • ft (N • m)	1000	(1356)
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EXHAUST SYSTEM

Maximum Back Pressure..... — in Hg (mm Hg)	3	(76)
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AIR INDUCTION SYSTEM

Maximum Intake Air Restriction

• with Dirty Filter Element..... — in H ₂ O (mm H ₂ O)	25	(635)
• with Normal Duty Air Cleaner and Clean Filter Element..... — in H ₂ O (mm H ₂ O)	10	(254)
• with Heavy Duty Air Cleaner and Clean Filter Element..... — in H ₂ O (mm H ₂ O)	15	(381)

COOLING SYSTEM

Coolant Capacity — Engine Only..... — US gal (litre)	8.0	(30)
— with HX 4073 Heat Exchanger..... — US gal (litre)	17.5	(66)

Maximum Coolant Friction Head External to Engine — 1800 rpm..... — psi (kPa)	10	(69)
— 1500 rpm..... — psi (kPa)	8	(55)

Maximum Static Head of Coolant Above Engine Crank Centerline..... — ft (m)	60	(18.3)
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Standard Thermostat (Modulating) Range..... — °F (°C)	180 - 200	(82 - 93)
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Minimum Pressure Cap..... — psi (kPa)	10	(69)
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Maximum Top Tank Temperature for Standby / Prime Power..... — °F (°C)	220 / 212	(104 / 100)
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Minimum Raw Water Flow @ 90°F to HX 4073 Heat Exchanger..... — US gpm (litre / min)	54	(204)
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Maximum Raw Water Inlet Pressure at HX 4073 Heat Exchanger..... — psi (kPa)	50	(345)
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LUBRICATION SYSTEM

Oil Pressure @ Idle Speed..... — psi (kPa)	20	(138)
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@ Governed Speed..... — psi (kPa)	50 - 70	(345 - 483)
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Maximum Oil Temperature..... — °F (°C)	250	(121)
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Oil Capacity with OP 4019 Oil Pan : High - Low..... — US gal (litre)	10 - 8.5	(38 - 32)
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Total System Capacity (Including Bypass Filter)..... — US gal (litre)	13.2	(50)
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FUEL SYSTEM

Type Injection System	Direct Injection Cummins PT
Maximum Restriction at PT Fuel Injection Pump - with Clean Fuel Filter	4.0 (102)
- with Dirty Fuel Filter	8.0 (203)
Maximum Allowable Head on Injector Return Line (Consisting of Friction Head and Static Head).....	6.5 (165)
Maximum Fuel Flow to Injection Pump	58 (220)

ELECTRICAL SYSTEM

Cranking Motor (Heavy Duty, Positive Engagement).....	24
Battery Charging System, Negative Ground.....	40
Maximum Allowable Resistance of Cranking Circuit.....	0.002
Minimum Recommended Battery Capacity - Cold Soak @ 50 °F (10 °C) and Above	600
- Cold Soak @ 32 °F to 50 °F (0 °C to 10 °C).....	640
- Cold Soak @ 0 °F to 32 °F (-18 °C to 0 °C).....	900

COLD START CAPABILITY

Minimum Ambient Temperature for Aided (with Coolant Heater) Cold Start within 10 seconds.....	50 (10)
Minimum Ambient Temperature for Unaided Cold Start.....	32 (0)

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 — % +/- 0.50

- | | |
|---|------------------------|
| Governed Engine Speed..... | rpm |
| Engine Idle Speed..... | rpm |
| Gross Engine Power Output | BHP (kW _m) |
| Brake Mean Effective Pressure | psi (kPa) |
| Piston Speed..... | ft / min (m / s) |
| Friction Horsepower..... | HP (kW _m) |
| Engine Water Flow at Stated Friction Head External to Engine: | |
| • 1 psi Friction Head..... | US gpm (litre / s) |
| • Maximum Friction Head..... | US gpm (litre / s) |

Engine Data with Dry Type Exhaust Manifold

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|--------------------------------|------------------------------|
| Intake Air Flow..... | cfm (litre / s) |
| Exhaust Gas Temperature..... | °F (°C) |
| Exhaust Gas Flow..... | cfm (litre / s) |
| Air to Fuel Ratio..... | air : fuel |
| Radiated Heat to Ambient | BTU / min (kW _m) |
| Heat Rejection to Coolant..... | BTU / min (kW _m) |
| Heat Rejection to Exhaust..... | BTU / min (kW _m) |

	STANDBY	
	60 hz	50 hz
Not Available for 60 Hz		1500
		675 - 775
		771 (575)
		354 (2441)
		1562 (7.9)
		60 (45)
		162 (10.2)
		145 (9.1)
		1410 (665)
		1020 (549)
	3790 (1789)	
	23.5 : 1	
	3140 (56)	
	17835 (313)	
	24550 (431)	

**Emergency Standby Ratings
for Application in Corporate
Generator Sets Only**

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

ENGINE MODEL : KTA19-G8
DATA SHEET : DS-4428
DATE : 8July04
CURVE NO. : FR-4428