



CUMMINS ENGINE COMPANY, INC

Columbus, Indiana 47201

ENGINE PERFORMANCE CURVE

Basic Engine Model:
QST30 -G2 NON-ROAD 1

Engine Critical Parts List:
CPL: 2968

Curve Number:
FR-5200

Date:
27Jun00

G-DRIVE
Q30
1

Displacement : **30.48 litre (1860 in³)**

Bore : **140 mm (5.51 in.)** Stroke : **165 mm (6.50 in.)**

No. of Cylinders : **12**

Aspiration : **Turbocharged and Aftercooled**

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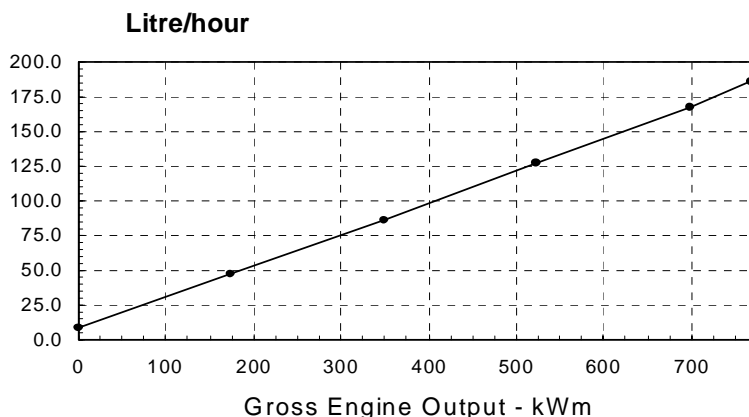
Engine Speed RPM	Standby Power		Prime Power		Continuous Power	
	kWm	BHP	kWm	BHP	kWm	BHP
1500	768	1030	698	935	537	720
1800	895	1200	809	1085	652	875

Emissions Certification

This engine is certified to certain emissions requirements established by US EPA/CARB.

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	768	1030	0.207	0.339	186	49.2
PRIME POWER						
100	698	935	0.205	0.336	167	44.2
75	523	701	0.208	0.342	128	33.8
50	349	468	0.210	0.345	86	22.7
25	174	234	0.232	0.381	48	12.6
CONTINUOUS POWER						
100	537	720	0.208	0.342	131	34.7



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)

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 Prime Power rating should use the Continuous Power rating.

CONTINUOUS POWER RATING

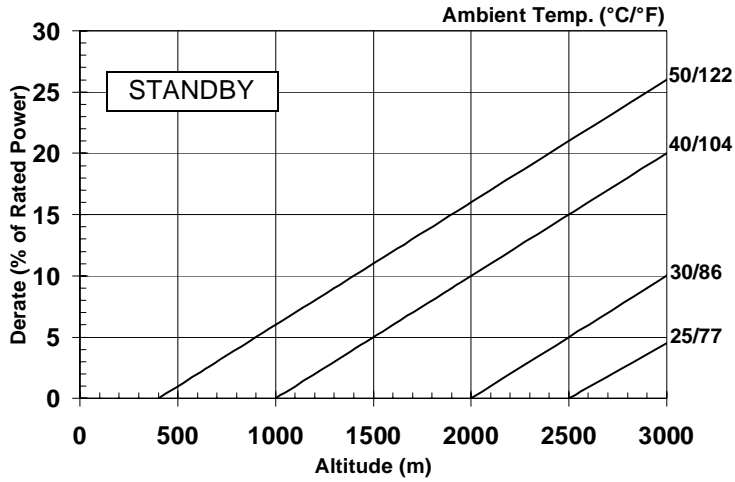
Applicable for supplying utility power at a constant 100% load for an unlimited number of hours per year. No overload capability is available for this rating.

Data shown above represent gross engine performance capabilities obtained and corrected in accordance with ISO-3046 conditions of 100 kPa (29.53 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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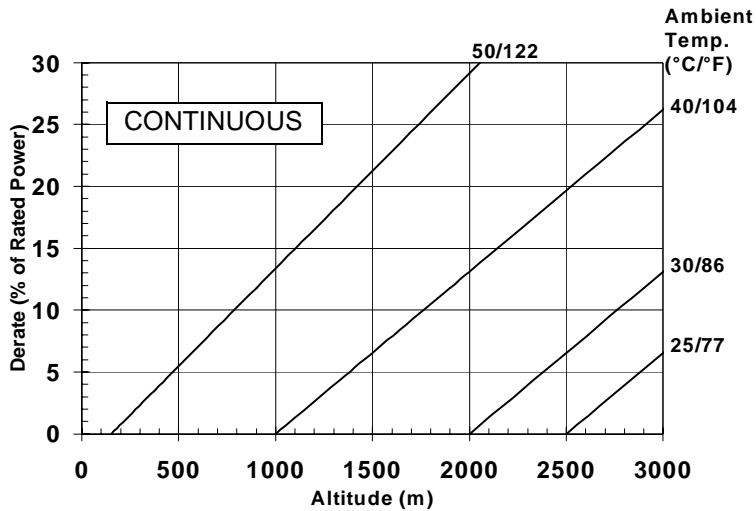
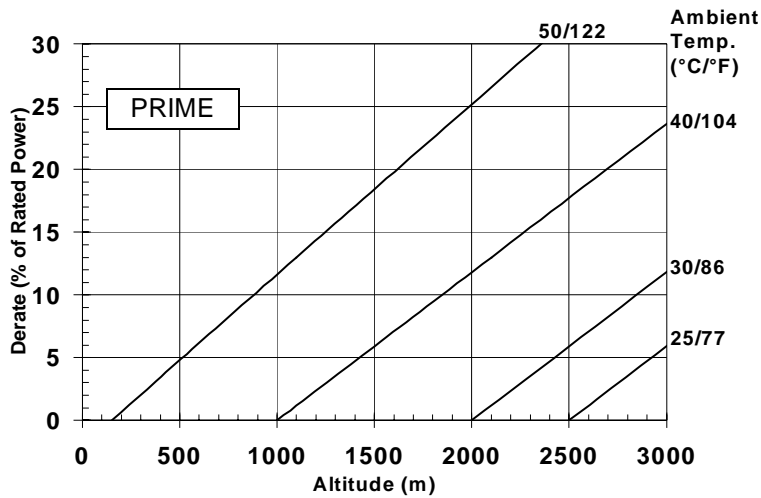


Reference Standards:

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 10% per 500 m (1640 ft), and 15% per 10° C (18° F).



Note: Derates shown are based on 15 in H₂O air intake restriction and 2 in Hg exhaust back pressure.



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QST30 -G2 NON-ROAD 1

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FR-5200

Date:
27Jun00

G-DRIVE
Q30
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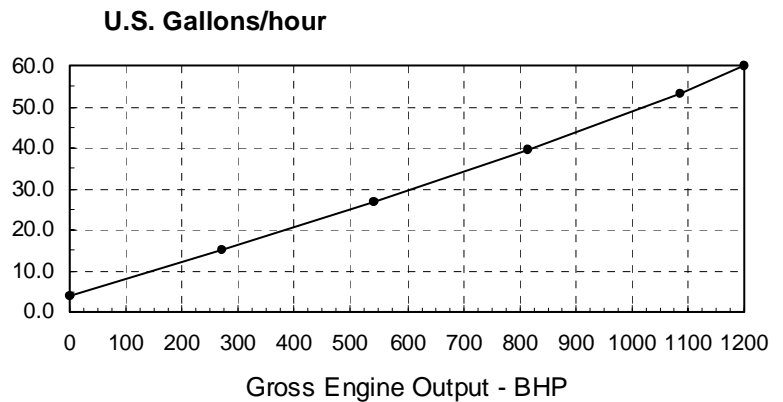
Aspiration : **Turbocharged and Aftercooled**

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Engine Speed RPM	Standby Power		Prime Power		Continuous Power	
	kWm	BHP	kWm	BHP	kWm	BHP
1500	768	1030	698	935	537	720
1800	895	1200	809	1085	652	875

Engine Performance Data @ 1800 RPM

OUTPUT POWER			FUEL CONSUMPTION			
%	kWm	BHP	kg/ kWm-h	lb/ BHP-h	litre/ hour	U.S. Gal/ hour
STANDBY POWER						
100	895	1200	0.216	0.355	227	60.0
PRIME POWER						
100	809	1085	0.211	0.347	201	53.0
75	607	814	0.211	0.346	150	39.7
50	404	542	0.215	0.352	102	26.9
25	202	271	0.243	0.399	58	15.2
CONTINUOUS POWER						
100	652	875	0.209	0.343	160	42.3



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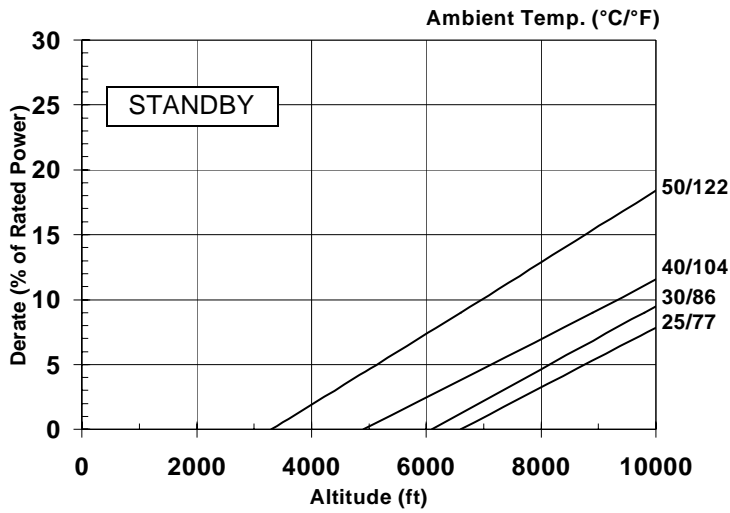
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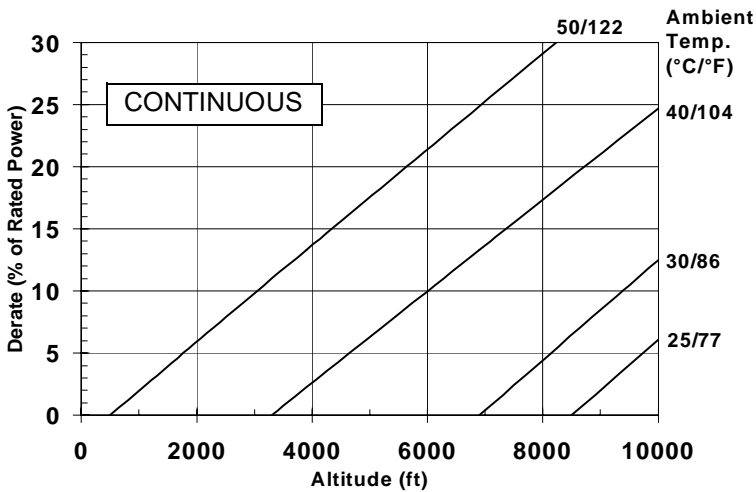
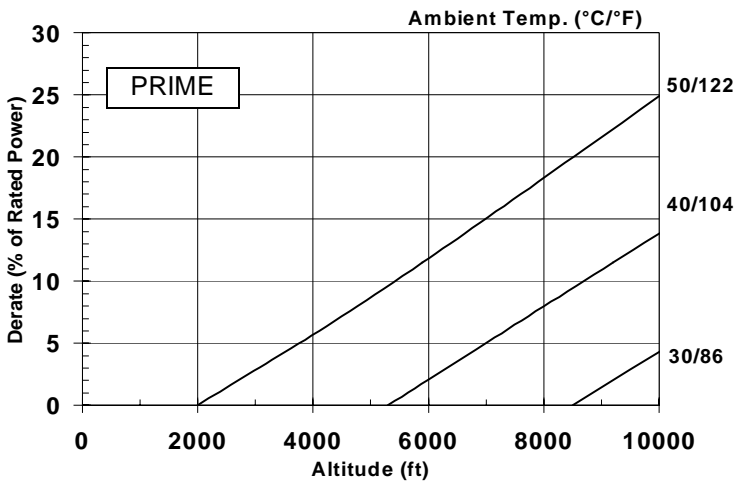


Reference Standards:

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Operation At Elevated Temperature And Altitude:

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Note: Derates shown are based on 15 in H₂O air intake restriction and 2 in Hg exhaust back pressure.

ENGINE MODEL : QST30 -G2 NON-ROAD 1 CONFIGURATION NUMBER : D573001GX03

DATA SHEET : DS-5200

DATE : 27Jun00

PERFORMANCE CURVE : DS-5200

INSTALLATION DIAGRAM

• Fan to Flywheel : 3170342

CPL NUMBER

• Engine Critical Parts List : 2968

GENERAL ENGINE DATA

Type	4-Cycle; 50° Vee; 12-Cylinder Diesel
Aspiration	Turbocharged and Aftercooled
Bore x Stroke	140 x 165 (5.51 x 6.50)
Displacement	30.48 (1860)
Compression Ratio	14.0
Dry Weight	
Fan to Flywheel Engine.....	— kg (lb) 2967 (6540)
Wet Weight	
Fan to Flywheel Engine.....	— kg (lb) 3062 (6750)
Moment of Inertia of Rotating Components	
• with FW 5050 Flywheel	— kg • m ² (lb _m • ft ²) 8.7 (206)
Center of Gravity from Rear Face of Flywheel Housing (FH 5031)	— mm (in) 845 (33.3)
Center of Gravity above Crankshaft Centerline.....	— mm (in) 195 (7.7)
Maximum Static Loading at Rear Main Bearing.....	— kg (lb) 950 (2100)

ENGINE MOUNTING

Maximum Bending Moment at Rear Face of Block	— N • m (lb • ft) 3100 (2286)
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EXHAUST SYSTEM

Maximum Back Pressure.....	— mm Hg (in Hg) 76 (3.0)
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AIR INDUCTION SYSTEM

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

COOLING SYSTEM

Coolant Capacity — Engine Only	— litre (US gal) 85 (22.4)
Maximum Coolant Friction Head External to Engine	
— 1800 rpm.....	— kPa (psi) 69.0 (10.0)
— 1500 rpm.....	— kPa (psi) 48.0 (7.0)
Maximum Static Head of Coolant Above Engine Crank Centerline.....	— m (ft) 14 (46)
Standard Thermostat (Modulating) Range.....	— °C (°F) 82 - 95 (180 - 203)
Minimum Pressure Cap	— kPa (psi) 69.0 (10)
Maximum Top Tank Temperature - Standby / Prime	— °C (°F) 104 / 100 (220 / 212)

LUBRICATION SYSTEM

Oil Pressure @ Idle Speed	— kPa (psi) 166 (24.0)
@ Governed Speed	— kPa (psi) 310 - 386 (45.0 - 56.0)
Maximum Oil Temperature.....	— °C (°F) 121 (250)
Oil Capacity with OP 5133 Oil Pan : High - Low	— litre (US gal) 133 - 114 (35 - 30)
Total System Capacity (Including Bypass Filter).....	— litre (US gal) 154 (40.7)
Angularity of OP 5133 Oil Pan	
— Front Down	17°
— Front Up	35°
— Side to Side.....	35°

