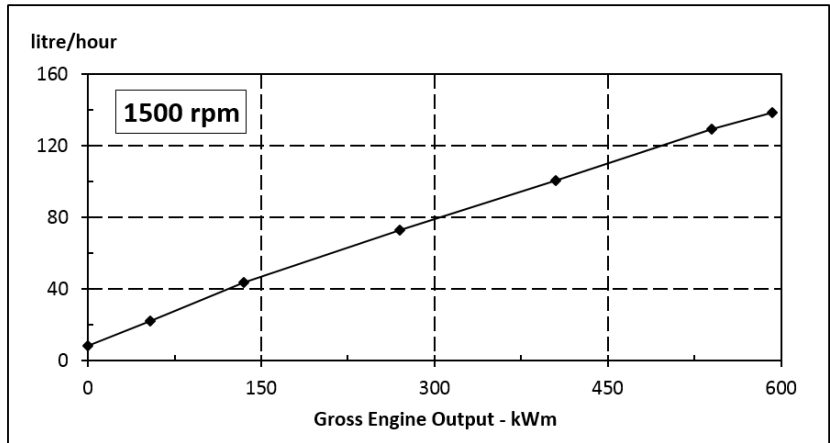
	Cummins Inc. Columbus, Indiana 47202-3005 ENGINE PERFORMANCE DATASHEET	Basic Engine Model: QSK19-G6	Curve Number: FR4624	G-DRIVE QSK 1
		Engine Critical Parts List: CPL : 4382	Date: 25 NOV 14	
Compression Ratio : 15.8 : 1		Displacement : 18.9 litre (1150 in³)		
Fuel System : Cummins MCRS		Aspiration : Turbocharged and Charge Air Cooled		
Emission Certification : CPCB2				

Engine Speed	Standby Power		Prime Power		Continuous Power	
RPM	kWm	bhp	kWm	bhp	kWm	bhp
1500	592	794	540	724	N/A	N/A

Engine Performance Data @ 1500 rpm

OUTPUT POWER			FUEL CONSUMPTION			
%	kWm	bhp	kg/ kWm·h	lb/ bhp·h	litre/ hour	US gal/ hour
STANDBY POWER						
100	592	794	0.199	0.328	138.6	36.6
PRIME POWER						
100	540	724	0.204	0.335	129.6	34.2
75	405	543	0.211	0.346	100.5	26.6
50	270	363	0.229	0.378	72.7	19.2
25	135	181	0.275	0.452	43.7	11.5
CONTINUOUS POWER						
100	N/A	N/A	N/A	N/A	N/A	N/A



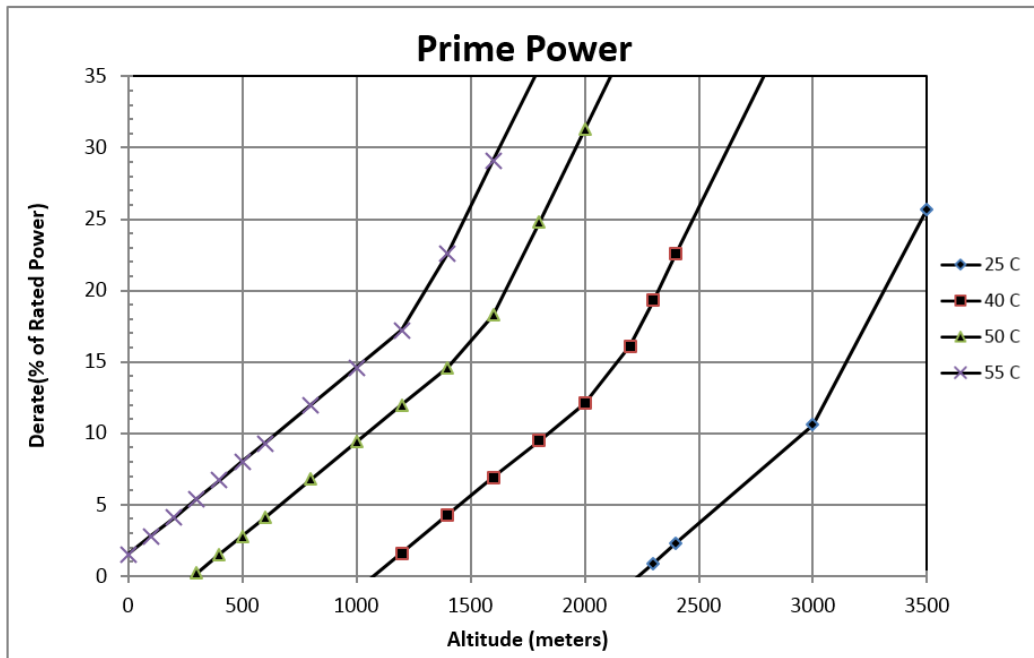
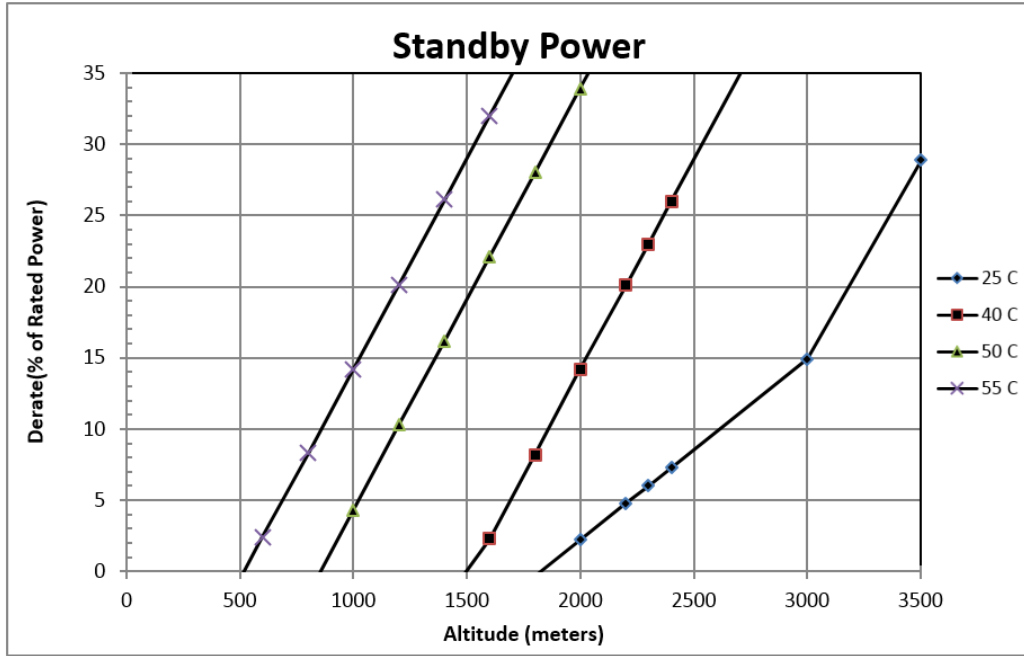
CONVERSIONS:(litres = US Gal x 3.785) (US Gal = litres x 0.2642)

Data Subject to Change Without Notice

<p>These guidelines have been formulated to ensure proper application of generator drive engines in A.C. generator set installations. 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.</p>	Reference AEB 10.47 for determining Electrical Output.
	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/US 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% Chief Engineer:



QSK19-G6
1500 rpm Derate Curves



Operation at Elevated Temperature and Altitude:

For **Standby** operation above these conditions, derate by an additional 8.9% per 1,000 ft (300 m), and 19.8% per 18 delta deg F (10 delta deg C)
 For **Prime** operation above these conditions, derate by an additional 9.7% per 1,000 ft (300 m), and 21.7% per 18 delta deg F (10 delta deg C)

Cummins Inc.
Engine Data Sheet

ENGINE MODEL : QSK19-G6

CONFIGURATION NUMBER : D193103GX03

DATA SHEET : FR4624

DATE :25 NOV 14

INSTALLATION DIAGRAM

• Fan to Flywheel: N.A.

CPL NUMBER

• Engine Critical Parts List: 4382

GENERAL ENGINE DATA

Type	Inline 6-Cylinder Diesel		
Aspiration	Turbocharged & Charge Air Cooled		
Bore x Stroke	6.25 x 6.25	(159 x 159)	
Displacement	1150	(18.9)	
Compression Ratio	15.8 : 1		
Dry Weight (Approximate), Fan to Flywheel Engine	4348	(1972)	
Wet Weight (Approximate), Fan to Flywheel Engine	4568	(2072)	
Moment of Inertia of Rotating Components • with FW 4016 Flywheel	195	(8)	
Center of Gravity from Rear Face of Block	24	(598)	
Center of Gravity Above Crankshaft Centerline	11	(282)	
Maximum Static Loading at Rear Main Bearing	2000	(907)	

ENGINE MOUNTING

Maximum Bending Moment at Rear Face of Block	1000	(1356)	
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EXHAUST SYSTEM

Maximum Back Pressure	2	(6.77)	
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AIR INDUCTION SYSTEM

Maximum Intake Air Restriction • with Dirty Filter Element	25	(6)	
• with Clean Filter Element	15	(4)	

COOLING SYSTEM

Jacket Water Circuit Requirements

Coolant Capacity — Engine Only	11	(42)	
Maximum Static Head of Coolant Above Engine Crank Centerline	60	(18)	
Standard Thermostat (Modulating) Range	180 - 202	(82 - 94)	
Minimum Pressure Cap	7	(15)	
Maximum Top Tank Temperature for Standby / Prime Power	219/212	(104/100)	
Maximum Coolant Friction Head External to Engine	5	(35)	

Charge Air Cooler Requirements

Maximum Temp. Rise Between Engine Air Intake and Intake Manifold - 1500rpm	49	(25)	
Maximum Air Pressure Drop from Turbo Air Outlet to Intake Manifold - 1500rpm	3	(10)	
Maximum Intake Manifold Temperature @ 77 °F (25 °C) Ambient - 1500rpm	122	(50)	
Maximum Compressor Outlet Temperature	433	(223)	
Maximum Intake Manifold Temperature for Engine Protection (Shut Down Threshold)	185	(85)	

LUBRICATION SYSTEM

Oil Pressure @ Idle Speed	20	(138)	
@ Governed Speed	70	(483)	
Maximum Oil Temperature	250	(121)	
Oil Capacity with OP Standard Oil Pan : Low - High	16 - 19	(64 - 72)	
Total System Capacity (Including Combo Filters)	22	(84)	

FUEL SYSTEM

Type Injection System	Cummins MCRS
Maximum Restriction at Lift Pump(clean/dirty filter)..... — in Hg (kPa)	5/9 (17/30)
Maximum Allowable Head on Injector Return Line (Consisting of Friction Head and Static Head) — in Hg (kPa)	10 (34)
Maximum Fuel Flow to Injector Pump — US gph (litre/hr)	102 (387)
Maximum Return Fuel Flow — US gph (litre/hr)	65 (244)
Maximum Fuel Inlet Temperature — °F (°C)	160 (71)

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 @ 10 °F to 32 °F (-12 °C to 0 °C)	— °F CCA	900

COLD START CAPABILITY

Minimum Ambient Temperature for NFPA 110 Cold Start (90 degree °F Coolant Temperature)	— °F (°C)	N.A.	(N.A.)
Minimum Ambient Temperature for Unaided Cold Start	— °F (°C)	N.A.	(N.A.)

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; Excludes Exhaust Noise; at Rated Load and 7.5 m (24.6 ft); @1500 rpm	— dBA		N.A.
Exhaust Noise at 1 m Horizontal from Centerline of Exhaust Pipe Outlet Upwards at 45°	— dBA		123

Governed Engine Speed	rpm
Engine Idle Speed	rpm
Gross Engine Power Output	hp (kW)
Brake Mean Effective Pressure	psi (kPa)
Piston Speed	ft/min (m/s)
Friction Horsepower	hp (kW)
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)

STANDBY POWER				PRIME POWER			
60 hz		50 hz		60 hz		50 hz	
N/A	N/A	1500		N/A	N/A	1500	
N/A	N/A	700 - 900		N/A	N/A	700 - 900	
N/A	N/A	794 (592)		N/A	N/A	724 (540)	
N/A	N/A	358 (2471)		N/A	N/A	325 (2242)	
N/A	N/A	1565 (8)		N/A	N/A	1565 (8)	
N/A	N/A	57 (43)		N/A	N/A	57 (43)	
N/A	N/A	128 (485)		N/A	N/A	128 (485)	
N/A	N/A	118 (447)		N/A	N/A	118 (447)	
N/A	N/A	1566 (739)		N/A	N/A	1502 (709)	
N/A	N/A	921 (494)		N/A	N/A	918 (492)	
N/A	N/A	4188 (1978)		N/A	N/A	3987 (1883)	
N/A	N/A	26: 1		N/A	N/A	27: 1	
N/A	N/A	3254 (57)		N/A	N/A	2947 (52)	
N/A	N/A	11108 (195)		N/A	N/A	8826 (155)	
N/A	N/A	27541 (484)		N/A	N/A	24606 (433)	
N/A	N/A	407 (7.15)		N/A	N/A	368 (6.47)	
N/A	N/A	7825 (138)		N/A	N/A	7316 (129)	
N/A	N/A	116 52.4		N/A	N/A	110 49.9	
N/A	N/A	81 (274)		N/A	N/A	76 (257)	
N/A	N/A	418 (214)		N/A	N/A	404 (207)	

Engine Data

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)
Heat Rejection to Jacket Coolant	BTU/min (kW)
Heat Rejection to Exhaust	BTU/min (kW)
Heat Rejected to *Fuel	BTU/min (kW)
Charge Air Cooler Heat Rejection	BTU/min (kW)
Charge Air Flow	lb/min (kg/min)
Turbocharger Compressor Outlet Pressure	in Hg (kPa)
Turbocharger Compressor Outlet Temperature	°F (°C)

* This is the maximum heat rejection to fuel.

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

ENGINE MODEL : QSK19-G6
DATA SHEET : FR4624
DATE : 25 NOV 14

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