	ChongQing Cummins Engine Company, Inc. Engine Data Sheet			ENGINE SERIES	D19	
				ENGINE MODEL	KTAA19-G6	
	PERFORMANCE CURVE	C- CQ402	CPL NUMBER	Dry manifold N/A	DATA SHEET	DS-FR427
	CONFIGURATION NUMBER	D193091DXCQ		wet manifold CQ406	SHEET	5

INSTALLATION DIAGRAM

- Engine:
- Engine With Radiator :

GENERAL ENGINE DATA

Type 4 Cycle; In-line; 6 Cylinder Diesel
Aspiration..... Turbocharged and Air to Air Aftercooled
Bore x Stroke..... — in x in (mm x mm) 6.25 x 6.25 (159 x 159)
Displacement — in³ (liter) 1150 (18.9)
Compression Ratio..... 13.5 : 1
Dry Weight
Engine(with wet manifold)..... — lb (kg) 4195 (1905)
Wet Weight
Engine(with wet manifold)..... — lb (kg) 4355 (1977)
Moment of Inertia of Rotating Components
• with FW 4001 Flywheel — lb m • ft² (kg • m²) 170 (7.2)
• with FW 4006 Flywheel — lb m • ft² (kg • m²) 199 (8.4)
Center of Gravity from Rear Face of Flywheel Housing (FH 4018) — in (mm) 28.4 (721)
Center of Gravity above Crankshaft Centerline..... — in (mm) 9.0 (229)
Firing Order..... — 1-5-3-6-2-4

ENGINE MOUNTING

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

EXHAUST SYSTEM

Maximum Back Pressure at Standby Power Rating — in Hg (kPa) 3 (10)

AIR INDUCTION SYSTEM


Maximum Intake Air Restriction
• with Dirty Filter Element — in H₂O (kPa) 25 (6.23)
• with Normal Duty Air Cleaner and Clean Filter Element..... — in H₂O (kPa) 10 (2.49)
• with Heavy Duty Air Cleaner and Clean Filter Element..... — in H₂O (kPa) 15 (3.74)

CHARGE AIR COOLING SYSTEM

• Maximum intake manifold temperature at 25 deg C (F) ambient.....— 120 (deg F) 49 (deg C)
• Maximum allowable pressure drop across charge air cooler and OEM CAC piping (IMPD) — 5 (inHg) 17(kPa)

COOLING SYSTEM

Coolant Capacity — Engine Only(with wet manifold) — US gal (liter) 8.0 (30)
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)
Standard Thermostat (Modulating) Range..... — °F (°C) 180 - 200 (82 - 93)
Minimum Pressure Cap..... — psi (kPa) 10 (69)
Maximum Top Tank Temperature for Standby / Prime Power — °F (°C) 220 / 212 (104 / 100)

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LUBRICATION SYSTEM

Oil Pressure @ Idle Speed..... — psi (kPa) 20 (138)
 @ Governed Speed — psi (kPa) 50 - 70 (345 - 483)
 Maximum Oil Temperature..... — °F (°C) 250 (121)
 Oil Capacity with OP 4019 Oil Pan : High - Low — US gal (liter) 10 - 8.5 (38 - 32)
 Total System Capacity (Including Bypass Filter)..... — US gal (liter) 13.2 (50)
 Angularity of OP 4019 Oil Pan — Front Down 30°
 — Front Up 30°
 — Side to Side..... 30°

FUEL SYSTEM

Type Injection System..... Direct Injection Cummins PT
 Maximum Restriction at PT Fuel Injection Pump
 — with Clean Fuel Filter — in Hg (kPa) 4.0 (13.3)
 — with Dirty Fuel Filter — in Hg (kPa) 8.0 (26.7)
 Maximum Allowable Head on Injector Return Line (Consisting of Friction Head and Static Head).....
 — in Hg (kPa) 6.5 (22)
 Maximum Fuel Flow to Injection Pump..... — US gph (liter / hr) 64 (242)

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 600
 • Cold Soak @ 32 °F to 50 °F (0 °C to 10 °C)..... — 0°F CCA 640
 • Cold Soak @ 0 °F to 32 °F (-18 °C to 0 °C)..... — 0°F CCA 900

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

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 (25 ft); 1800 rpm / 1500 rpm — dBA
 Exhaust Noise at 1 m Horizontally from Centerline of Exhaust Pipe Outlet Upwards at 45°; — dBA


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)

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	CONFIGURATION NUMBER	D193091DXCQ		wet manifold CQ406	SHEET	5

Air Temperature : 25 °C (77 °F)
Altitude : 110 m (361 ft)
Relative Humidity : 30%

Engine Performance Data	STANDBY POWER		PRIME POWER	
	60 hz	50 hz	60 hz	50 hz
Governed Engine Speed—rpm	1800	1500		
Engine Idle Speed—rpm	675-775	675-775		
Gross Engine Power Output—kWm(BHP)	620 (831)	570 (764)		
Brake Mean Effective Pressure—kPa(PSI)	2175 (315)	2404 (349)		
Piston Speed—m/s (ft/min)	9.5 (1875)	7.9 (1562)		
Friction Horsepower—kWm(BHP)	63 (85)	45 (60)		
Engine Water Flow at Stated Friction Head External to Engine: • 3 psi Friction Head—L/min(U.S.GPM) • Maximum Friction Head-L/min(U.S.GPM)	12.4 (196) 11.0 (175)	10.2 (162) 9.1 (145)		
Engine Data with Dry Type Exhaust Manifold				
Intake Air Flow—L/s(CFM)				
Exhaust Gas Temperature—°C(° F)				
Exhaust Gas Flow—L/s(CFM)				
Radiated Heat to Ambient—kW(BTU/min)				
Heat Rejection to Coolant—kW(BTU/min)				
Heat Rejection to Exhaust—kW(BTU/min)				
Fan coolant Air Flow—L/s(CFM)				
Engine Data with Wet Type Exhaust Manifold				
Intake Air Flow—L/s(CFM)	745 (1579)	732 (1552)		
Exhaust Gas Temperature—°C(° F)	477 (890)	490 (914)		

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	CONFIGURATION NUMBER	D193091DXCQ		wet manifold CQ406	SHEET	5

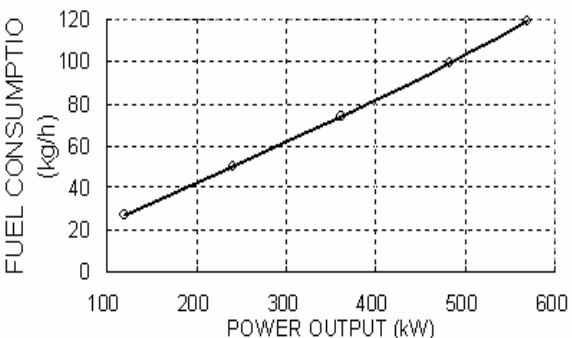
Exhaust Gas Flow—L/s(CFM)	2013 (4268)	1992 (4220)		
Radiated Heat to Ambient—kW(BTU/min)	89 (5033)	80 (4522)		
Heat Rejection to Coolant—kW(BTU/min)	322 (18210)	287 (16350)		
Heat Rejection to Exhaust—kW(BTU/min)	438 (24770)	402 (22830)		

Type 4 Cycle; In-line; 6 Cylinder Diesel
Displacement — in³ (liter) 1150 (18.9)
Aspiration..... Turbocharged and Air to Air Aftercooled
Bore x Stroke..... — in x in (mm x mm) 6.25 x 6.25 (159 x 159)
Fuel System.....PT(G)-EFC
Standby Power/Rate Speed.....570kW/1500r/min

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 Speed RPM	Standby Power		Prime Power	
	kWm	BHP	kWm	BHP
1500	570	764		

FUEL CONSUMPTION					
Engine Performance Data @ 1500 RPM	OUTPUT POWER		FUEL CONSUMPTION		
	%	BHP	kg./hr	Liter/hr	
 <p>Gross Engine Power Output—KWm</p>	STANDBY POWER				
		764	570	118.9	141.5
		647	483	99.56	118.5
		485	362	74.12	88.2
		324	242	50.34	59.9
		162	121	26.78	31.9
	0	0			

CONVERSIONS:

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

	ChongQing Cummins Engine Company, Inc. Engine Data Sheet		ENGINE SERIES	D19		
			ENGINE MODEL	KTAA19-G6		
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	CONFIGURATION NUMBER	D193091DXCQ		wet manifold CQ406	SHEET	5

corresponding to ASTM D2. See reverse side for application rating guidelines.

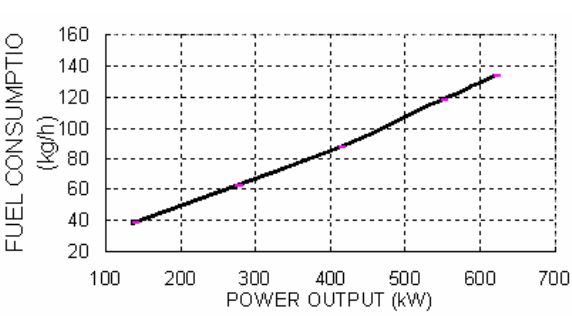
The fuel consumption data is based on No. 2 diesel fuel weight at 0.85 kg/litre (7.1 lbs/U.S. gal).

Type 4 Cycle; In-line; 6 Cylinder Diesel
 Displacement — in³ (liter) 1150 (18.9)
 Aspiration..... Turbocharged and Air to Air Aftercooled
 Bore x Stroke..... — in x in (mm x mm) 6.25 x 6.25 (159 x 159)
 Fuel System.....PT(G)-EFC
 Standby Power/Rate Speed..... 620kW/1800r/min

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 Speed RPM	Standby Power		Prime Power	
	kWm	BHP	kWm	BHP
1800	620	831		

FUEL CONSUMPTION					
Engine Performance Data @ 1800 RPM	OUTPUT POWER		FUEL CONSUMPTION		
	%	BHP	kWm	kg./hr	Liter/hr
 <p>Gross Engine Power Output—KWm</p>	STANDBY POWER				
		831	620	133.5	158.9
		735	548	117.6	140.0
		551	411	88.1	104.9
		368	274	62.4	74.3
		184	137	38.3	45.6
	0	0			

CONVERSIONS:

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

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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).