

FUJIAN EPOS ELECTRIC MACHINERY CO., LTD

EMEAN
POWER



ENGINE MODEL: KTAA19-G6
CURVE & DATASHEET: FR-4596

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WHATSAPP



WECHAT





CHONGQING CUMMINS ENGINE COMPANY LTD. ENGINE PERFORMANCE CURVE

CONFIGURATION
D193108GX03

ENGINE MODEL: KTAA19-G6

CURVE NUMBER: FR-4596

CPL No.: 3960

DATE: 2013/6/25

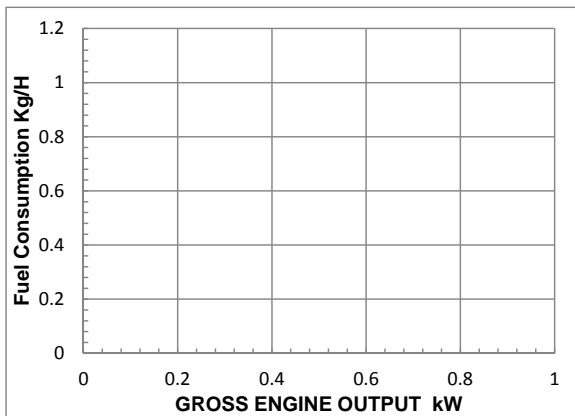
Displacement: 19L (1150) Aspiration: Turbocharged, Air-to-air Cooled RATING
 BoreXStroke: 159X159mm (6.25X6.25 in.) Fuel System: Cummins PT
 Compress Ratio: 13.9:1 No. of Cylinder: 6 570 kW(764 BHP)@1500r/min

All data is based on the engine operating with fuel system, water pump, and 20 in. H₂O(4.98kPa) inlet air restriction with 5.8 in.(147mm) inner diameter, and with 2 in. Hg(7kPa) exhaust restriction with 8 in.(203mm) inner diameter; not included are alternator, fan, optional equipment and driven components. Coolant flows and heat rejection data based on coolant as 50% ethylene glycol/50% water. All data is subject to change without notice.

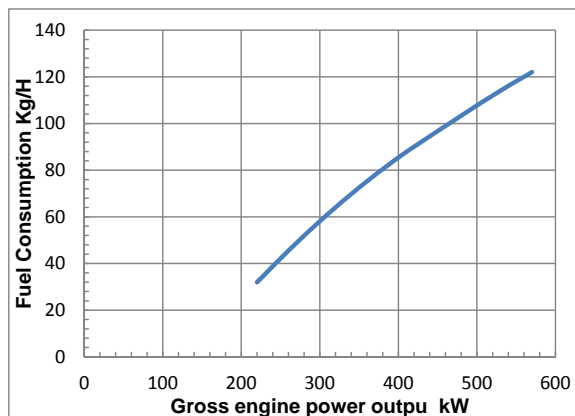
GROSS ENGINE POWER OUTPUT

SPEED rpm	STANDBY POWER		PRIME POWER		CONTINUOUS POWER	
	BHP	kW	BHP	kW	BHP	kW
1800						
1500	764	570	697	520		

FUEL CONSUMPTION



	OUTPUT POWER		CONSUMPTION		BFSC		
	%	BHP	kW	Lb/h	Kg/h	g/kW.h	Lb/BHP.h
1800RPM							
STANDBY							
100	0	0	0	0	#DIV/0!	#DIV/0!	
PRIME							
100	0	0	0	0	#DIV/0!	#DIV/0!	
75	0	0	0	0	#DIV/0!	#DIV/0!	
50	0	0	0	0	#DIV/0!	#DIV/0!	
25	0	0	0	0	#DIV/0!	#DIV/0!	
1500RPM							
STANDBY							
100	764	570	269	122	214	0.352	
PRIME							
100	697	520	247	112	215	0.354	
75	523	390	183	83	213	0.350	
50	392	293	123	56	191	0.315	
25	294	220	71	32	145	0.240	



Curves shown above represent gross engine performance capabilities obtained and corrected in accordance with SAE J1995 conditions of 29.61 in. Hg(100kPa) barometric pressure [300ft.(91m) altitude] 77deg F (25 deg C) inlet temperature, and 0.30 in. Hg(1kPa) water vapor pressure with No.2 diesel fuel.

TECHNICAL DATA DEPT.

CERTIFIED WITHIN 5%

CHIEF ENGINEER

Cummins Confidential



POWER RATING APPLICATION GUIDELINES FOR GENERATOR DRIVE ENGINES

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 is 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.

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.

PRIME POWER RATING is 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 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

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 Prime Power rating should use the Continuous Power rating.

Reference Standards:

BS-5514 and DIN-6271 standards are based on ISO-3046.

Operation At Elevated Temperature And Altitude:

The engine may be operated at:

1500RPM up to 5,000 ft. (1,500m) and 104°F (40°C) without power deration.

For sustained operation above these conditions, derate by 4% per 1,000ft. (300m), and 1% per 10°F (2% per 11°C).



重庆康明斯发动机有限公司

数据单

发动机型号:	KTAA19-G6	参考信息:	
备用功率:	570 kW @1500r/min 764 BHP	特征编号	D193108GX03
常用功率:	520 kW @1500r/min 697 BHP	CPL	3960
		数据单号	DS-4596
		性能曲线号	FR-4596

整机数据

机型.....	四冲程、直列、六缸	
进气方式.....	废气涡轮增压, 空空中冷	
缸径—mm(in.)×冲程—mm(in.).....	159×159	(6.25×6.25)
排量—L(in ³).....	19	(1150)
压缩比.....	13.9:1	
发动机干重		
风冷带飞轮—kg(lb).....	1633	(3600)
热交换器—kg(lb).....	N/A	N/A
发动机湿重		
风冷带飞轮—kg(lb).....	1699	(3745)
热交换器—kg(lb).....	N/A	N/A
运动零件相对于曲轴中心线的转动惯量 (不包括飞轮) —kg·m ² (lb _m .ft ²).....	1.82	(43.2)
• 飞轮选用件FW 4001F —kg·m ² (lb _m .ft ²).....	7.16	(170.0)
• 飞轮选用件FW 4006F —kg·m ² (lb _m .ft ²).....	8.39	(199.0)
质心至飞轮壳后端的距离 (FH4018) mm(in).....	721	(28.4)
质心在曲轴中心线上方—mm(in).....	229	(9.0)
后端主轴允许的最大静载荷—kg(lb).....	907	(2000)
发火顺序.....	1-5-3-6-2-4	

发动机悬置安装

在缸体后端面处的最大允许弯矩—N·m(lb.ft).....	1356	(1000)
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排气系统

最大允许排气背压—kPa(in.Hg).....	10	(3)
标准容许的排气管直径—mm(in).....	127	(5)

进气系统

允许的最大进气阻力		
脏滤芯—kPa(in. H ₂ O).....	6.23	(25)
干净滤芯—kPa(in.H ₂ O).....	3.73	(15)

冷却系统

冷却液容量		
仅发动机—L(U.S.Gal).....	26.5	(7.0)
包含热交换器HX 4073(不包含膨胀水箱) — L(U.S.Gal).....	66.2	(17.5)
包含热交换器包含膨胀水箱和低温中冷系统— L(U.S.Gal).....	111.7	(29.5)
海平面高度压力盖允许的最小压力—kPa(PSI).....	48	(7)
外循环水最大阻力1800rpm —kPa(PSI).....	68.9	(10.0)
1500rpm —kPa(PSI).....	55.2	(8.0)
冷却系统外部最大压力损失 —kPa(PSI).....	34.5	(5.0)
热交换器HX 4073中的生水在32℃ (90°F) 时的最小流量—L/min(GPM).....	204	(54)
热交换器HX 4073中的生水最大进水压力—kPa(PSI).....	345	(50)



重庆康明斯发动机有限公司

数据单

性能数据

在任意恒定负荷下的转速稳定性—%.....±0.25

所有的数据均是基于发动机带燃油泵、水泵、机油泵、空滤器和消声器运转时获得的，但不包括交流发电机、空压机、风扇、选用设备和驱动件。所有的数据都是基于SAE J1349标准规定的条件——海拔90m（300ft.），大气压力100kPa（29.61in.Hg），进气温度25°C（77°F），水蒸汽压力1.0kPa（0.30in.Hg），使用标准2#柴油或符合ASTM D2的柴油。数据随时可能更改，恕不另行通知。

	备用功率		常用功率	
	60 Hz	50 Hz	60 Hz	50 Hz
转速r/min.....		1500		1500
怠速r/min.....		725-775		725-775
输出总功率kW(BHP).....		570(764)		520(697)
平均有效压力kPa(PSI).....		2403(349)		2192(318)
活塞平均速度m/s(ft/min).....		7.9(1555)		7.9(1555)
摩擦功率kW(BHP).....		40(54)		40(54)
进气流量L/s(CFM).....		703(1490)		623(1320)
排气流量 L/s(CFM).....		1985(4205)		1860(3940)
排气温度 °C(°F).....		457(855)		433(812)
对环境的散热量kW(BTU/min).....		82(4635)		74(4229)
对冷却液的散热量 kW(BTU/min).....		408(23177)		372(21144)
发动机冷却液流量 L/s(U.S.GPM)阻力为27.5kpa时.....		10.2(162)		10.2(162)



CHONGQING CUMMINS ENGINE COMPANY LTD. ENGINE DATA SHEET

ENGINE MODEL:	KTAA19-G6	REFERENCE INFORMATION:
STAND_BY:	570 kW @1500r/min 764 BHP	CONFIGURATION..... D193108GX03
PRIME:	520 kW @1500r/min 697 BHP	CPL NUMBER 3960
		PERFORMANCE CURVE NUMBER..... FR-4596

GENERAENGINE DATA

Type.....	4 Cycle , In-line , 6 Cylinder	
Aspiration.....	Turbocharged , Air-to-air Coc	
Bore— <i>in.(mm)</i> × <i>stroke—in.(mm)</i>	6.25×6.25	(159×159)
Displacement— <i>in³(L)</i>	1150	(19)
Compression Ratio.....	13.9:1	
Dry Weight		
Fan Hub to Flywheel Engine — <i>lb(kg)</i>	3600	(1633)
Radiator Cooled Engine — <i>lb(kg)</i>	N/A	N/A
Wet Weight		
Fan Hub to Flywheel Engine — <i>lb(kg)</i>	3745	(1699)
Radiator Cooled Engine — <i>lb(kg)</i>	N/A	N/A
Moment of Inertia of Rotating Components (Excluding Flywheel) — <i>lb_m.ft²(kg•m²)</i>	43	(1.82)
·With FW 4001 Flywheel — <i>kg•m²(lb_m.ft²)</i>	7.16	(170.0)
·With FW 4006 Flywheel — <i>kg•m²(lb_m.ft²)</i>	8.39	(199.0)
C.G. Distance From Front Face of Block— <i>in(mm)</i>	23.6	(598)
C.G. Distance Above Crank Centerline— <i>in(mm)</i>	9	(229)
Maximum Allowable Bending Moment at Rear Face of Block — <i>N•m(lb.ft)</i>	2000	(907)
Firing Order.....	1-5-3-6-2-4	

ENGINE MOUNTINC

Moment of Inertia About Roll Axis — <i>lb.ft²(kg•m²)</i>	1876	(79)
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EXHAUST SYSTEM

Maximum Allowable Back Pressure (1500/1800 rpm) — <i>in.Hg(kPa)</i>	2.3/3	(7.8/10.2)
Maximum Allowable Back Pressure — <i>in.Hg(kPa)</i>	3	(10)
Exhaust Pipe Size Normally Acceptable — <i>in(mm)</i>	5	(127)

AIR INDUCTION SYSTEM

Maximum Allowable Intake Air Restriction With Heavy Duty Air Cleaner		
Clean Element — <i>in.H₂O(kPa)</i>	15	(3.73)
Clean Element — <i>in.H₂O(kPa)</i>	15	(3.73)
Intake Air Alarm Temperature (1500/1800 rpm)— <i>°C(°F)</i>	82	(180)

COOLING SYSTEM

Coolant Capacity		
After-cooler Only — <i>U.S.Gal(L)</i>	6	(23)
With heat exchanger HX 6076 (With out explanation tank) — <i>U.S.Gal(L)</i>	53	(199)
With explanation tank & LTA— <i>U.S.Gal(L)</i>	30	(112)
<i>Main Engine Circuit</i>		
Maximum Coolant Friction Heat External to Engine @1800 rpm — <i>PSI(kPa)</i>	10	(68.9)
@1500 rpm — <i>PSI(kPa)</i>	10	(68.9)
Maximum Allowable Air Friction Across radator — <i>in.H₂O(kPa)</i>	0.5	(0.1)
Minimum Raw Water Flow @ 90°F(32°C) to Heat Exchanger With HX 6076 — <i>GPM(L/mi 108)</i>		(408.8)

CHONGQING CUMMINS ENGINE COMPANY LTD.

CHONGQING, CHINA

All Data is Subject to Change Without Notice— consult the following Cummins intranet site for most recent data:
<http://www.ccec.easia.cummins.com> - /Publish/design/



CHONGQING CUMMINS ENGINE COMPANY LTD. ENGINE DATA SHEET

Maximum Raw Water Inlet Pressure @ Heat Exchanger HX 6076 —PSI(kPa).....	50	(344.7)
Maximum Allowable Top Tank Temperature (Stand_by/Prime) —°F(°C).....	220/212	(104/100)
Standard Thermostat (modulating) Range— °F(°C).....	180-200	(82-93)
Maximum Allowable Coolant Temperature —°F(°C).....	205	(96.1)
Minimum Coolant Makeup Capacity —U.S.Gal(L).....	1.6	(6.1)
Maximum Raw water Inlet Friction —PSI(kPa).....	10	(254.0)
Minimum Allowable Fill Rate —U.S.GPM(L/min).....	5	(18.9)
Maximum Allowable Initial Fill Time —min.....	5	
Minimum Allowable Coolant Expansion Space —% of System Capacity.....	5	
Maximum Allowable Inlet Coolant Temperature at Limited situation (Stand_by/Prime) —	160/150	(71/66)

LUBRICATION SYSTEM

Oil Pressure

@ Idle —PSI(kPa).....	20	(138)
@ Rated Speed —PSI(kPa).....	50-70	(345-483)
Oil Flow at Rated Speed —U.S.GPM(L/min).....	40	(151.4)
Maximum Allowable Oil Temperature —°F(°C).....	250	(121.0)
By-Pass Filter Capacity		
Spin-on Cartridge Type —U.S.Gal(L).....	0.7	(2.6)
Replaceable Element Type —U.S.Gal(L)	2.9	(11.0)
Oil Pan Capacity (Option OP4019)		
High —U.S.Gal(L).....	10.0	(37.9)
Total System Capacity (Excluding By-Pass Filter) —U.S.Gal(L).....	22.3	(84.4)
Total System Capacity (Excluding By-Pass Filter) —U.S.Gal(L).....	13.2	(50.0)
Angularity of Standard Oil Pan (Option OP		
Front Down.....	30°	

FUEL SYSTEM

Fuel Injection System.....	Cummins PT	
Maximum Fuel Consumption at Maximum Rated Output and Speed —lb/h(kg/h).....		
Maximum allowable Restriction to PT Fuel Pump		
With Clean Fuel Filter —in.Hg(kPa).....	4	(13.55)
With Dirty Fuel Filter —in.Hg(kPa).....	9	(30.48)
Maximum Fuel Supply at Rated Power and Speed —lb/h(kg/h).....		
Maximum Allowable Injector Return Line Restriction		
With Check Valves —in.Hg(kPa).....	7	(22)
Less Check Valves —in.Hg(kPa).....	3	(8)
Minimum Allowable Fuel Tank Vent Capability —ft ³ /h (L/h)	15	(425)
(With 2.5 in. Hg (63 mm Hg) or Less Back Pressure)		
Starter (Heavy, Anode)—Volt.....		24
Battery Recharge System,Negative ground—A.....		35
Maximum Allowable Resistance of Starting Circuit—Ω.....		0.002
Minimum Recommended Battery Capacity		
·Cold Soak at 50°F(10°C) or Above—0°F CCA.....		600
·Cold Soak at 32~50°F(0~10°C) or Above—0°F CCA.....		640
·Cold Soak at 0~32°F(-18~0°C) or Above—0°F CCA.....		900



CHONGQING CUMMINS ENGINE COMPANY LTD. ENGINE DATA SHEET

PERFORMANCE DATA

All data is based on the engine operating with fuel system, water pump, lubricating oil pump, air cleaner, and muffler, not included are alternator, compressor, fan, optional equipment and driven components. Data represents gross engine performance capabilities obtained and corrected in accordance with SAE J1349 conditions for 29.61 in Hg(100 kPa) barometric pressure[300ft. (90 m) altitude], 77°F (25 °C) inlet air temperature, and 0.30 in. Hg (1kPa) water vapor pressure with No. 2 diesel fuel or a fuel corresponding to ASTM D2. All data is subject to change without notice

	STAND_BY		PRIME	
	60 Hz	50 Hz	60 Hz	50 Hz
Engine Speed r/min.....		1500		1500
Idle Speed r/min.....		725-775		725-775
Gross Power Output BHP(kW).....		764(570)		697(520)
Brake Mean Effective Pressure PSI(kPa).....		349(2403)		318(2192)
Piston Speed ft/min(m/s).....		1555(7.9)		1555(7.9)
Friction Horsepower BHP(kW).....		54(40)		54(40)
Intake Air FlowCFM(L/s).....		1490(703)		1320(623)
Exhaust Gas Flow CFM(L/s).....		4205(1985)		3940(1860)
Exhaust Gas Temperature °F(°C).....		855(457)		812(433)
Heat Rejection to Ambient BTU/min(kW).....		4635(82)		4229(74)
Heat Rejection to Coolant BTU/min(kW).....		23177(408)		21144(372)
Engine Water Flow L/s(U.S.GPM) @ 4psi.....		162(10.2)		162(10.2)

Chanvge Log		
Date	Author	Change Description
2013/6/25	Jiang Li	Release