CUMMINS ENGINE COMPANY LTD.
ENGINE PERFORMANCE CURVE

CONFIGURATION	ENGINE MODEL: KTAA19-G6	CURVE NUMBER: FR-4596	CPL No.: 3960
D193108GX03			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

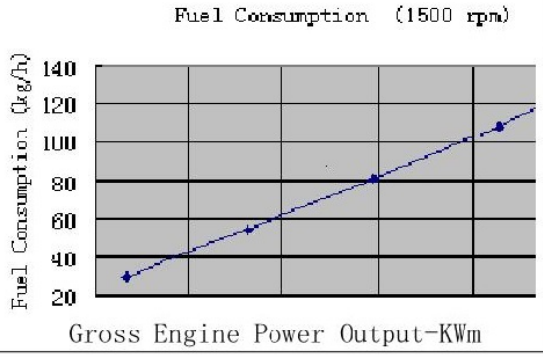
All data is based on the engine operating with fuel system, water pump, and 20 in. H2O(4.98kPa) inlet air restriction with 5.8 in.(147mm) inner diameter, and with 2 in. Hg(7kPa) exhaust restriction with 8 in.(203mm) inner diameter; not included are alternator, fan, optional equipment and driven components. 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	STANDBY POWER		PRIME POWER		CONTINUOUS POWER	
rpm	BHP	kW	BHP	kW	BHP	kW
1800						
1500	764	570	697	520		

FUEL CONSUMPTION

Engine Performance Data @ 1500 RPM



OUTPUT POWER			FUEL CONSUMPTION	
%	BHP	kWm	kg./hr	Liter/hr
STANDBY POWER				
	818	610	127.1	149.5
	706	527	108.6	127.8
	530	395	80.9	95.2
	353	263	54.3	63.9
	177	132	29.8	35.0
	0	0		

Curves shown above represent gross engine performance capabilites 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%

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ENGINE DATA SHEET

ENGINE MODEL: **KTAA19-G6**

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

GENERALENGINE DATA

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

ENGINE MOUNTINC

Moment of Inertia About Roll Axis —$lb.ft^2$($kg•m^2$)	1876	(79)

EXHAUST SYSTEM

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

AIR INDUCTION SYSTEM

Maximum Allowable Intake Air Restriction With Heavy Duty Air Cleaner		
Clean Element —in.H_2O(kPa)	15	(3.73)
Clean Element —in.H_2O(kPa)	15	(3.73)
Intake Air Alarm Temperature (1500/1800 rpm)—℃(°F)	82	(180)

COOLING SYSTEM

Coolant Capacity		
After-cooler Only —U.S.Gal(L)	6	(23)
With heat exchanger HX 6076 (With out explantion tank) —U.S.Gal(L)	53	(199)
With explantion tank & LTA—U.S.Gal(L)	30	(112)
Main Engine Circuit		
Maximum Coolant Friction Heat External to Engine @1800 rpm —PSI(kPa)	10	(68.9)
@1500 rpm —PSI(kPa)	10	(68.9)
Maximum Allowable Air Friction Across radator —in.H_2O(kPa)	0.5	(0.1)
Minimum Raw Water Flow @ 90°F(32℃) to Heat Exchanger With HX 6076 —GPM(L/mi	108	(408.8)

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Maximum Raw Water Inlet Pressure @ Heat Exchanger HX 6076 —PSI(kPa)	50	(344.7)
Maximum Allowable Top Tank Temperature (Stand_by/Prime) —°F(℃)	220/212	(104/100)
Standard Thermostat (modulating) Range— °F(℃)	180-200	(82-93)
Maximum Allowable Coolant Temperature —°F(℃)	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(℃)	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)
Angularty 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
Battary Recharge System,Negative ground—A		35
Maximum Allowable Resistance of Starting Circuit—Ω		0.002
Minimum Recommended Battary Capacity		
·Cold Soak at 50°F(10℃) or Above—0°F CCA		600
·Cold Soak at 32~50°F(0~10℃) or Above—0°F CCA		640
·Cold Soak at 0~32°F(-18~0℃) or Above—0°F CCA		900

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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 altemator, compressor, fan, optional equipment and driven components. Data represents gross engine performance capabilities obtained and corrected in accordance with SAE J1349 conditions fo 29.61 in Hg(100 kPa) barometric pressure[300ft. (90 m) altitude], 77°F (25℃) 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(℃)		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)