CCEC Cummins Engine Co. Ltd.

Engine Data Sheet

MODEL:	**NTA855-G1B**	**DATA SHEET:**	**DS-819E**
ONFIGURATION NO.:	**D093517DX02**	**PERFORMANCE CURVE:**	**C-819E**
CPL NUMBER:	**1183**		
PRIME POWER	**380 HP (284 kW) at 1500 r/min**	**DATE:**	**2007-1-25**
STANDBY POWER:	**430 HP (321 kW) at 1500 r/min**	**REVISION:**	**00**

GENERAL ENGINE DATA

Type	4-Cycle;In-line;6-Cylinder	
Aspiration	Turbocharged,Aftercooled	
Bore x Stroke - in.×in. (mm×mm)	5.5 ×6	(140 × 152)
Displacement - $in.^3$(L)	855	(14)
Compression Ratio	14.0:1	
Firing Order	1-5-3-6-2-4	
Dry Weight		
--Fan to Flywheel Engine - lb. (kg)	2870	(1300)
--Heat Exchanger Cooled Engine - lb. (kg)	3095	(1410)
Wet Weight		
--Fan to Flywheel Engine - lb. (kg)	2970	(1350)
--Heat Exchanger Cooled Engine - lb. (kg)	3320	(1510)
Moment of Inertia of Rotating Components - With FW1109 flywheel - lb.·ft.²	118.5	(4.99)
Center of Gravity from Rear Face of Flywheel Housing - in.(mm)	27.7	(704)
Center of Gravity Above Crankshaft Centerline - in.(mm)	5.5	(140)
Reference Installation Drawing		
--Fan to Flywheel Engine	4915105	
--Heat Exchanger Cooled Engine	4061315	

ENGINE MOUNTING

Maximum Allowable Bending Moment at Rear Face of Block - lb.·ft. (N·m)	1000	(1356)

EXHAUST SYSTEM

Maximum Allowable Back Pressure - in.Hg (kPa)	3.0	(10)
Standard Exhaust Pipe Diameter - in. (mm)	5.0	(127)

AIR INDUCTION SYSTEM

Maximum Allowable Intake Air Restriction		
--With Clean Filter Element - in. H_2O (kPa)	15	(3.74)
--With Dirty Filter Element - in. H_2O (kPa)	25	(6.22)
Minimum Dirt Holding Capacity - g/CFM (g/L/s)	25	(53)
Maximum Allowable Intake Air Temperature ΔT - ℉ (℃)	30	(17)

COOLING SYSTEM

Coolant Capacity - Engine Only - U.S. gal (L)	5.5	(20.8)
- With Radiator - U.S. gal (L)	16.0	(60.6)
- With Heat Exchanger - U.S. gal (L)	13.0	(49.2)
Maximum Coolant Friction Head External to Engine - PSI (kPa)	6	(41)
Maximum Static Head of Coolant (exclusive of Pressure Cap) - PSI (kPa)	15	(103)
Maximum Static Head of Coolant Above Engine Crank Centerline -ft. (m)	46	(14.0)
Standard Thermostat (Modulating) Range - ℉ (℃)	180 - 202	(82 - 94)
Minimum Allowable Pressure Cap -PSI (kPa)	7.0	(48.2)
Maximum Coolant Temperature - ℉ (℃)	205	(96)
Maximum Allowable Top Tank Temperature for Standby / Prime Power - ℉	220 / 212	(104 / 100)

Minimum Recommended Top Tank Temperature - ℉ (℃)… ……	160	(71)
Minimum Coolant Expansion Space - % of System Capacity ……	5	
Minimum Coolant Makeup Capacity - U.S. gal (L)……	1.1	(4.2)
Engine Water Flow - GPM (L/s) ……	79	(5)
Fan to Flywheel Engine		
Recommended Standard Fan Diameter - in. (mm)……	34	(864)
Fan to Crankshaft Ratio……	1.2	
Fan Speed - r/min……	1800	
Fan Power - HP (kW)……	19.0	(14.2)
Standard Fan Air Flow - CFM (m^3/s)……	25003	(11.8)
Heat Exchanger Cooled Engine		
Raw Water Flow - GPM (L/s) ……	51.5	(3.25)
Maximum Raw Water Pump Initial Suction Lift - ft. (m)……	9.4	(2.8)
Maximum Raw Water Pump Initial Discharge Lift - ft. (m)……	32.8	(9.7)
Raw Water Pump Power - HP (kW)……	2.7	(2)
Maximum Raw Water Pressure at Engine Outlet -PSI (kPa)……	15	(103)
Maximum Inlet Restriction at Raw Water Pump - in.Hg (kPa)……	10	(34)
Minimum Raw Water Pipe Size - in. (mm)……	2	(51)

LUBRICATION SYSTEM

Oil Pressure @ Idle Speed - PSI (kPa)……	15 Min	(103) Min
@ Governed Speed - PSI (kPa)……	35-50	(241 - 345)
Maximum Allowable Oil Temperature - ℉ (℃)…… ……	250	(121)
Maximum Oil Consumption - U.S.qt./h (L/h)……	0.25	(0.24)
Oil Flow - GPM (L/s) ……	34.9	(2.2)
Oil Pan Capacity - Low / High - U.S. gal. (L)……	7.5 / 9.5	(28.4 / 36.0)
Total System Capacity - U.S. gal. (L)……	10.2	(38.6)
Angularity of Oil Pan - Front Down/Front Up/Side to Side……	38°/38°/38°	

FUEL SYSTEM

Type Injection System……	Direct Injection Cummins PT	
Maximum Allowable Restriction to Fuel Pump		
-- With Clean Fuel Filter - in.Hg (kPa)……	4.0	(13.5)
-- With Dirty Fuel Filter - in.Hg (kPa)……	8.0	(27.1)
Maximum Allowable Head on Injector Return Line		
-- With Check Valve - in.Hg (kPa)……	6.5	(22.0)
-- Without Check Valve - in.Hg (kPa)……	2.5	(8.5)
Minimum Fuel Supply Line Size - in. (mm)……	0.625	(16)
Minimum Fuel Return Line Size - in. (mm)……	0.5	(13)
Maximum Fuel Pump Supply - U.S.gal/h (L)……	81	(305)
Fuel Rail Pressure - PSI (kPa)……	165	(1141)
Maximum Fuel Temperature ℉ (℃)……	160	(71)

ELECTRICAL SYSTEM

Minimum Recommended Battery Capacity (24V)	
-- Cold Soak (No Load) - CCA……	900
- Minimum Reserved Capacity - CCA……	320
-- Cold Soak (With Load) - CCA……	900
- Minimum Reserved Capacity - CCA……	320
Maximum Allowable Resistance of Cranking Circuit - ohm……	0.002
Standard Cranking Motor (Heavy Duty , Positive Engagement） - volt……	24
Standard Battery Charging System , Negative Ground - ampere……	35

PERFORMANCE DATA

Idle Speed - r/min ……	575 - 650	
Maximum No-Load Governed Speed - r/min ……	1800	
Maximum over Speed Capability - r/min ……	2700	
Minimum Crankshaft Rotation for unaided Cold Start - r/min……	150	
Minimum Torque for unaided Cold Start - lb.·ft. (N·m)……	375	(509)
Exhaust Sound Pressure at 1m from Exhaust Outlet -1500r/min -dBA……	N/A	

All data is based on :

--Engine Operating with fuel system, water pump, lubricating oil pump, air cleaner and exhaust silencer, fan, and optional driven components.

--Engine operating with fuel corresponding to grade No.2-D per **ASTM D975**.

--**ISO 3046**, Part1, Standard Reference Conditions of : Barometric Pressure:100kPa(29.5in.Hg); Altitude: 110m (361ft.); Air Temperature: 25℃ (77° F) ; Relative Humidity: 30% .

--This Data Sheet includes both air-cooled (Fan/Radiator) & raw water cooled (Heatexchanger/Raw Water Pump) type engine.

N.A. - Data is Not Available

N/A - Not Applicable to this Engine

TBD - To Be Determined

	Prime Power		Standby Power	
	50Hz		50Hz	
Governed Engine Speed - r/min……	1500		1500	
Gross Engine Power Output - HP (kW) ……	380	(284)	430	(321)
Torque lb.·ft. (N·m)……	1333	(1808)	1507	(2044)
Brake Mean Effective Pressure - PSI (kPa) ……	235	(1623)	266	(1834)
Piston Speed - ft./min (m/s)……	1500	(7.62)	1500	(7.62)
Friction Horsepower - HP (kW)……	30	(22)	30	(22)
Intake Air Flow - CFM (L/s) ……	795	(375)	885	(418)
Fuel Consumption - U.S.gal/h (L/h)……	18.0	(68)	20.4	(77)
Exhaust Gas Temperature (After Turbine) - ℉ (℃).	905	(485)	930	(499)
Exhaust Gas Flow (After Turbine) - CFM (L/s)……	2067	(980)	2301	(1090)
Air to Fuel Ratio……	26.1 : 1		25.7 : 1	
Heat Radiation - BTU (kW)……	1960	(34)	2220	(39)
Heat Rejection to Coolant - BTU (kW)……	11740	(206)	13320	(234)
Heat Rejection to Ambient - BTU (kW)……	9780	(172)	11100	(195)

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