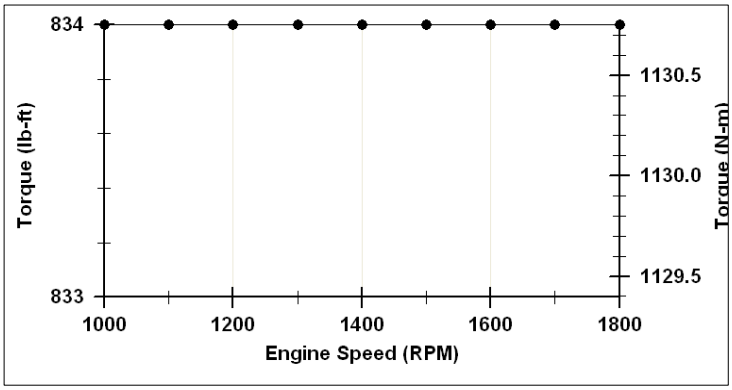
Engine Performance Data Cummins Inc Columbus, Indiana 47202-3005 http://www.cummins.com	Industrial **GTA855** **FR10529**	**286 BHP (213 kW) @ 1800 RPM** **834 lb-ft (1,131 N-m) @ 1800 RPM**		
		Configuration **D253007CX02**	CPL Code **10183**	Revision **24-Feb-2005**

Compression Ratio: **8.5:1**
Fuel System: Dry Processed Gas, Field Gas and Propane
Emission Certification: **Non-certified**

Displacement: **855 in3 (14.0 L)**
Aspiration: **Turbocharged and Aftercooled**

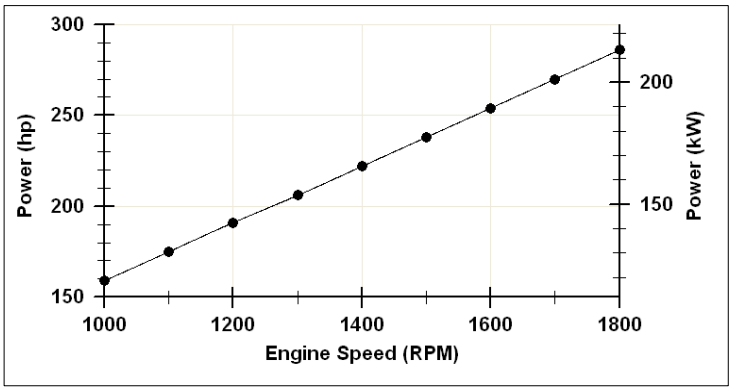
All data is based on the engine operating with fuel system, water pump, and 8 in H2O (1.991 kPa) inlet air restriction with 5 in (127 mm) inner diameter, and with 1.1 in Hg (4 kPa) exhaust restriction with 4 in (102 mm) inner diameter; not included are alternator, fan, optional equipment and driven components. Coolant flows and heat rejection data based on coolants as 50% ethylene glycol/50% water. All data is subject to change without notice.

Rating Type: Continuous/WMR



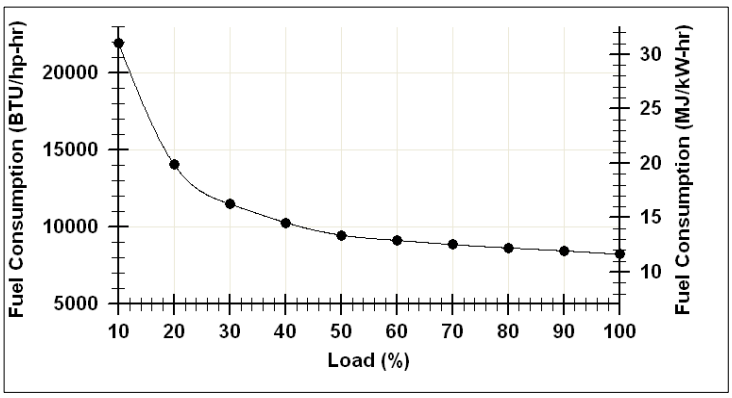
Torque Output

RPM	lb-ft	N-m
1,000	834	1,131
1,100	834	1,131
1,200	834	1,131
1,300	834	1,131
1,400	834	1,131
1,500	834	1,131
1,600	834	1,131
1,700	834	1,131
1,800	834	1,131



Power Output

RPM	hp	kW
1,000	159	119
1,100	175	130
1,200	191	142
1,300	206	154
1,400	222	166
1,500	238	177
1,600	254	189
1,700	270	201
1,800	286	213



Fuel Consumption @ 1,800 RPM

hp	kW	% Load	BTU/hp-hr	MJ/kW-hr
286	213	100	8,224	11.64
257	192	90	8,447	11.95
229	171	80	8,639	12.22
200	149	70	8,856	12.53
172	128	60	9,129	12.92
143	107	50	9,467	13.39
114	85	40	10,283	14.55
86	64	30	11,492	16.26
57	43	20	14,039	19.86
29	22	10	21,930	31.03

Data represents gross engine capabilities obtained and corrected in accordance with SAE J1995 and ISO 3046 conditions of 29.61 in Hg (100 kPa) barometric pressure [500 ft (152 m) altitude], 77 °F (25 °C) inlet air temperature and 0.30 in Hg (1 kPa) water vapor pressure using dry processed natural gas fuel with 930 BTU per standard cubic foot lower heating value. Deration may be required due to altitude, temperature and type of fuel. Consult Cummins Customer Engineering for operation above this altitude.

STATUS FOR CURVES AND DATA: Limited-(measured data)
TOLERANCE: Within +/- 5 %

CHIEF ENGINEER:
Alfred S Weber

Intake Air System

Maximum allowable air temperature rise over ambient at Intake Manifold (Naturally Aspirated Engines) or Turbo Compressor inlet (Turbo-charged Engines): (This parameter impacts emissions, LAT and/or altitude capability)	15	delta deg F	8.3	delta deg C

Low Temperature Aftercooling System

Coolant temperature from the Aftercooler Radiator outlet @ Maximum engine coolant out temperature at Limiting Ambient Temperature				
Maximum coolant temperature into the aftercooler @ 25C (77F) ambient				
Maximum coolant temperature into aftercooler @ Limiting Ambient conditions	130	deg F	54	deg C

Exhaust System

Maximum exhaust back pressure:	2	in-Hg	6.8	kPa
Recommended exhaust piping size (inner diameter):	4	in	101.6	mm

Lubrication System

Nominal operating oil pressure				
@ minimum low idle	15	psi	103	kPa
@ maximum rated speed	60	psi	414	kPa
Minimum engine oil pressure for engine protection devices				
@ minimum low idle	15	psi	103	kPa

Fuel System

Maximum fuel inlet pressure:	20	" H2O	5	kPa

Performance Data

Engine low idle speed:	900	RPM
Maximum low idle speed:	1,980	RPM
Minimum low idle speed:	850	RPM
Engine high idle speed	1,800	RPM
Governor break speed:		
Maximum torque available at closed throttle low idle speed:	0	lb-ft	0	N-m

	100% Load				75% Load				50% Load			
Engine Speed	1,800	RPM			1,800	RPM			1,800	RPM		
Output Power	286	hp	213	kW	215	hp	160	kW	143	hp	107	kW
Torque	834	lb-ft	1,131	N-m	627	lb-ft	850	N-m	417	lb-ft	565	N-m
Intake Manifold Pressure	27	in-Hg	91	kPa	18	in-Hg	61	kPa	11	in-Hg	37	kPa
Turbo Comp. Outlet Pressure	42	in-Hg	142	kPa	28	in-Hg	95	kPa	15	in-Hg	51	kPa
Turbo Comp. Outlet Temperature	306	deg F	152	deg C	249	deg F	121	deg C	186	deg F	86	deg C
Inlet Air Flow	605	ft3/min	286	L/s	473	ft3/min	223	L/s	332	ft3/min	157	L/s
Charge Air Flow												
Exhaust Gas Flow	1,851	ft3/min	874	L/s	1,467	ft3/min	692	L/s	1,041	ft3/min	491	L/s
Exhaust Gas Temperature	1,337	deg F	725	deg C	1,291	deg F	699	deg C	1,240	deg F	671	deg C
Heat Rejection to Coolant	12,677	BTU/min	222.92	kW	11,073	BTU/min	194.71	kW	9,109	BTU/min	160.18	kW
Heat Reject to Aftercooler Coolant	1,902	BTU/min	33.45	kW	1,033	BTU/min	18.16	kW	413	BTU/min	7.26	kW
Heat Rejection to Ambient	1,087	BTU/min	19.11	kW	784	BTU/min	13.79	kW	874	BTU/min	15.37	kW
Heat Rejection to Exhaust	11,792	BTU/min	207.35	kW	9,209	BTU/min	161.93	kW	6,407	BTU/min	112.66	kW
Fuel Consumption	8,224	BTU/hp-hr	11.635	MJ/kW-hr	8,631	BTU/hp-hr	12.211	MJ/kW-hr	9,467	BTU/hp-hr	13.394	MJ/kW-hr
Air Fuel Ratio (dry)	20.3	vol/vol			20	vol/vol			19.2	vol/vol		
Ignition timing (BTDC)	24	deg	24	deg	24	deg	24	deg	24	deg	24	deg
Total Hydrocarbons	0.52	g/hp-hr			0.61	g/hp-hr			0.7	g/hp-hr		
NonMethane Hydrocarbons												
NOx	7.6	g/hp-hr	10.19	g/kW-hr	6.6	g/hp-hr	8.85	g/kW-hr	6.3	g/hp-hr	8.45	g/kW-hr
CO	1.1	g/hp-hr	1.48	g/kW-hr	1.2	g/hp-hr	1.61	g/kW-hr	1.4	g/hp-hr	1.88	g/kW-hr
CO2	491	g/hp-hr	658	g/kW-hr	527	g/hp-hr	707	g/kW-hr	572	g/hp-hr	767	g/kW-hr
O2	4.2	%			4.1	%			3.4	%		

Cranking System (Cold Starting Capability)

Unaided Cold Start:

Minimum cranking speed:	150 RPM	
Minimum ambient temperature	TBD	
Cranking torque at minimum unaided cold start temperature:	375 lb-ft	508 N-m

Cold starting aids available

Aftercooler Heat Rejection - Heat Load on Aftercooler
BTU/min (kW)

Ambient Temp deg F (deg C)

Altitude ft (m)	**120 (49)**	**110 (43)**	**100 (38)**	**90 (32)**	**80 (27)**	**70 (21)**
0 (0)	2,110 (37.1)	1,977 (34.8)	1,825 (32.1)	1,692 (29.8)	1,540 (27.1)	1,406 (24.7)
1000 (305)	2,224 (39.1)	2,072 (36.4)	1,939 (34.1)	1,787 (31.4)	1,654 (29.1)	1,502 (26.4)
2000 (610)	2,338 (41.1)	2,186 (38.4)	2,034 (35.8)	1,901 (33.4)	1,749 (30.8)	1,616 (28.4)
3000 (914)	2,452 (43.1)	2,300 (40.4)	2,148 (37.8)	2,016 (35.4)	1,863 (32.8)	1,711 (30.1)
4000 (1219)	2,547 (44.8)	2,414 (42.4)	2,262 (39.8)	2,110 (37.1)	1,958 (34.4)	1,806 (31.8)
5000 (1524)	2,680 (47.1)	2,528 (44.5)	2,376 (41.8)	2,224 (39.1)	2,072 (36.4)	1,920 (33.8)
6000 (1829)	2,680 (47.1)	2,528 (44.5)	2,376 (41.8)	2,224 (39.1)	2,072 (36.4)	1,920 (33.8)
7000 (2134)	2,680 (47.1)	2,528 (44.5)	2,376 (41.8)	2,224 (39.1)	2,072 (36.4)	1,920 (33.8)
8000 (2438)	2,680 (47.1)	2,528 (44.5)	2,376 (41.8)	2,224 (39.1)	2,072 (36.4)	1,920 (33.8)
9000 (2743)	2,680 (47.1)	2,528 (44.5)	2,376 (41.8)	2,224 (39.1)	2,072 (36.4)	1,920 (33.8)
10000 (3048)	2,680 (47.1)	2,528 (44.5)	2,376 (41.8)	2,224 (39.1)	2,072 (36.4)	1,920 (33.8)

End of Report