

Model – 575 GQHA
Frequency : 50 Hz
Fuel Type : Natural Gas MI 75+
Emissions Performance Nox : 500 mg/Nm³
LT water Inlet Temperature : 48⁰C (118⁰F)
HT water Outlet Temperature : 85⁰C (185⁰F)

Genset Outline	0500-4380
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Fuel Consumption (ISO3046/1)	See note	100% of Rated Load	90% of Rated Load	75% of Rated Load	50% of Rated Load
Fuel Consumption (LHV) ISO3046/1, kW	2,4,6,7	1599	1450	1250	895
Mechanical Efficiency ISO3046/1, percent	2,4,7	37.65%	37.06%	36.17%	33.43%
Electrical Efficiency ISO3046/1, percent	2,4,6,7	35.96%	35.47%	34.73%	32.02%

Engine	
Engine manufacturer	Cummins
Engine Model	QSK38G
Configuration	V12
Displacement, L (cu.in)	38 (2300)
Aspiration	Turbocharged (2)
Gross Engine Power Output, kWm (hp)	602 (807)
BMEP, bar (psi)	12.8 (185)
Bore, mm (in)	159 (6.25)
Stroke, mm (in)	159 (6.25)
Rated speed, rpm	1500
Piston Speed, m/s (ft/min)	7.95
Compression ratio	12:1
Lube oil Capacity, L (qt)	145 (1332)
Overspeed limit rpm	1775
Regenerative Power, kW	N/A
Full Load Lubricating Oil Consumptionm g/kWm-hr	0.15 g/kWm/hr
Fuel	
Min Gas Supply Pressure to Engine – barG (psiG)	0.35 (5)
Minimum Methane Index	75
Starting System	
Electric Starter Voltage, Volts	24
Minimum Battery Capacity @ 40 ⁰ C	2 X 180 AH
Air Starter Pressure, barg (psig)	NA
Air Starter Flow Nm3/s (scfm)	NA
Genset Dimensions	
Genset length, mm	3900
Genset Width, mm	2100
Genset Height, mm	2250
Genset Weight (wet) kg	9700



Energy Data	See Note	100% of Rated Load	90% of Rated Load	75% of Rated Load	50% of Rated Load
Continuous shaft Power, kWm (bhp)	2, 10	602 (807)	537 (720)	452 (606)	299 (401)
Continuous Generator Electrical Output kWe @ 1.0 pf	2, 10	575	514	434	286
Heat Dissipated in Lub Oil Cooler, kW	5	NA	NA	NA	NA
Heat Dissipated in Block, kW	5	NA	NA	NA	NA
Total Heat Rejected in LT Circuit, kW	5	117	102	73	33
Total Heat Rejected in HT Circuit, kW	5	339	314	294	236
Unburnt, kW	12	33	30	26	19
Heat Radiated to Ambient, kW	12	67	61	55	45
Available Exhaust Heat to 105°C, kW	5	387	359	312	231
Intake Air Flow					
Intake Air Flow Mass, kg/s	4	1.00	0.90	0.76	0.52
Intake Air Flow Volume m³/s (cfm)	4	0.77 (2231)	0.70 (2215)	0.59 (1700)	0.41 (1172)
Maximum Air Cleaner Restriction, mm HG (in H₂O)		28 (15)	28 (15)	28 (15)	28 (15)
Exhaust Air Flow					
Exhaust Gas Flow Mass, kg/s (lb/hr)	4	1.03 (8176)	0.93 (7387)	0.79 (6236)	0.54 (4305)
Exhaust Gas Flow Volume, m³/s (cfm)	4	2.31 (4508)	1.95 (4125)	1.67 (3534)	1.19 (2525)
Exhaust Temperature After Turbine, °C (°F)	6	455 (851)	464 (868)	476 (888)	502 (935)
Max Exhaust System back Pressure, mmHg (In H₂O)	6, 13	38 (20.5)	32.7 (17.5)	24.3 (13.0)	11.5 (6.14)
HT Cooling Circuit					
HT Circuit Engine Coolant Volume, L (gal)		180 (48)	180 (48)	180 (48)	180 (48)
HT Coolant Flow @ max Restriction, m³/h (gal/min)		65 (286)	65 (286)	65 (286)	65 (286)
Maximum HT Coolant Inlet Temperature °C (°F)	8	80 (176)	80 (176)	80 (176)	80 (176)
HT Coolant Outlet Temperature °C (°F)	8	85 (185)	85 (185)	85 (185)	85 (185)
Max Pressure Drop in External HT Circuit, bar (psig)		0.5 (7)	0.5 (7)	0.5 (7)	0.5 (7)
HT Circuit Maximum Pressure, bar (psig)		1.39 (20)	1.39 (20)	1.39 (20)	1.39 (20)
Minimum Static Head, bar (psig)		0.5 (7)	0.5 (7)	0.5 (7)	0.5 (7)
LT Cooling Circuit					
LT Circuit Engine Coolant Volume, L (gal)		25 (6)	25 (6)	25 (6)	25 (6)
LT Coolant Flow @ max Restriction, m³/h (gal/min)		23 (110)	23 (110)	23 (110)	23 (110)
Maximum LT Coolant Inlet Temperature °C (°F)	9	48 (118)	48 (118)	48 (118)	48 (118)
LT Coolant Outlet Temperature °C (°F)	9	52 (126)	52 (126)	52 (126)	52 (126)
Max Pressure Drop in External LT Circuit, bar (psig)		0.5 (7)	0.5 (7)	0.5 (7)	0.5 (7)
LT Circuit Maximum Pressure, bar (psig)		1.89 (27)	1.89 (27)	1.89 (27)	1.89 (27)
Minimum Static Head, bar (psig)		0.5 (7)	0.5 (7)	0.5 (7)	0.5 (7)
Emissions					
NOx emissions (dry), ppm	5	151	161	148	153
NOx Emissions, mg/Nm³ (g/bhp-hr)	5	482 (1.13)	505 (1.19)	451 (1.10)	446 (1.19)
THC emissions (wet), ppm	13	2265	2312	2392	2374
THC Emissions mg/Nm³ (g/bhp-hr)	13	2135 (4.99)	2151 (5.08)	2174 (5.28)	2067 (5.48)
CO emissions (dry), ppm	13	499	502	507	495
CO Emissions, mg/Nm³ (g/bhp-hr)	13	874 (2.04)	914 (2.16)	900 (2.19)	840 (2.22)
O2 emissions (dry), %	13	9.48	9.33	9.05	8.53
Particulates PM10, g/bhp-hr	13	< 0.03	< 0.03	< 0.03	< 0.03

**Table A - Altitude Derate Multiplication factor
(Off Grid – Island Mode Application)**

Barometer		Altitude										
In Hg	mbar	Feet	Meters									
20.7	701	9840	3000	0.75	0.75	0.75	0.75	0.71	0.69	0.66	0.63	
21.4	723	9020	2750	0.79	0.79	0.79	0.79	0.74	0.71	0.69	0.66	
22.1	747	8200	2500	0.82	0.82	0.82	0.82	0.78	0.73	0.71	0.68	
22.8	771	7380	2250	0.86	0.86	0.86	0.86	0.82	0.77	0.73	0.70	
23.5	795	6560	2000	0.89	0.89	0.89	0.89	0.87	0.83	0.75	0.72	
24.3	820	5740	1750	0.93	0.93	0.93	0.93	0.91	0.88	0.81	0.74	
25.0	846	4920	1500	0.96	0.96	0.96	0.96	0.95	0.94	0.88	0.78	
25.8	872	4100	1250	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.85	
26.6	899	3280	1000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92	
27.4	926	2460	750	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
28.3	954	1640	500	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
29.1	983	820	250	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
29.5	995	490	150	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
30.0	1012	0	0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
				°C	0	15	20	25	30	35	40	45
				°F	32	59	68	77	86	95	104	113
Air Filter Inlet Temperature												
* Based on SAE standard ambient pressure vs. altitude. Assumes LT return temperature is 10C above air filter inlet.												

Temperature & Altitude Derate

1. Determine derate multiplier vs. temperature and altitude in Table A depending upon your operating condition.
2. Assumes the LT return temperature is 10 deg C above the air filter inlet with a maximum LT temperature of 52 deg C.
3. If the LT temperature exceeds 52 deg C, consult factory for recommendations.
4. Altitude is based upon SAE standard ambient pressure vs. altitude. For low barometric conditions add 150m (500 ft) to site altitude.

**Table B : Heat Rejection Factor (Altitude and Ambient)
for HT and LT Circuits**

Barometer		Altitude		Table B						
In Hg	mbar	Feet	Meters	Multiplier for HT & LT Heat Rejection						
20.7	701	9843	3000	1.11	1.13	1.14	1.15	1.17	1.18	
21.4	723	9022	2750	1.10	1.12	1.13	1.14	1.15	1.17	
22.1	747	8202	2500	1.09	1.10	1.12	1.13	1.14	1.16	
22.8	771	7382	2250	1.08	1.09	1.11	1.12	1.13	1.14	
23.5	795	6562	2000	1.07	1.08	1.09	1.11	1.12	1.13	
24.3	820	5741	1750	1.06	1.07	1.08	1.10	1.11	1.12	
25.0	846	4921	1500	1.05	1.06	1.07	1.09	1.10	1.11	
25.8	872	4101	1250	1.04	1.05	1.06	1.07	1.09	1.10	
26.6	899	3281	1000	1.02	1.04	1.05	1.06	1.08	1.09	
27.4	926	2461	750	1.01	1.03	1.04	1.05	1.07	1.08	
28.3	954	1640	500	1.00	1.02	1.03	1.04	1.05	1.07	
29.1	983	820	250	0.99	1.00	1.02	1.03	1.04	1.06	
29.5	995	492	150	0.99	1.00	1.01	1.03	1.04	1.05	
30.0	1012	0	0	0.98	0.99	1.01	1.02	1.03	1.05	
				°C	20	25	30	35	40	45
				°F	68	77	86	95	104	113
Air Filter Inlet Temperature										

LT & HT Circuit Heat Rejection Calculation

1. Determine derate multiplier vs. temperature derate per above.
2. Using the multiplier from #1 above as the percent load factor determine the Heat rejection from the previous page.
3. From Table C find the HT and LT circuit multiplier.
4. Multiply the result of step 2 by the result of step 3 to obtain the heat rejection at your altitude and temperature.

Methane Number Capability

Load (Percent of Rated)			
100%	90%	75%	50%
75	69	61	46



Power Generation

Continuous Duty Definition

Applicable for supplying power continuously for a constant load up to the full output rating for unlimited hours. No sustained overload capability is available for this rating. Consult authorized distributor for rating. (Equivalent to Continuous Power in accordance with ISO 8528, ISO 3046, AS 2789, DIN 6271 & BS 5514). This rating is not applicable all generating set models.

Notes

- 1) Weight and dimensions represent a generator set with standard features only.
- 2) At ISO3046 reference conditions, altitude 1013 mbar (30 in Hg), air inlet temperature 25°C (77°F)
- 3) Nominal performance + 2.5%
- 4) According to ISO 3046/1 with a fuel tolerance of +5%-0% or efficiency tolerance of +0% -5%.
- 5) Production variation / tolerance +5%.
- 6) With intake air at 25°C (77°F). Tolerance +5°F.
- 7) Tested using natural gas with LHV of 33.44mJ/Nm³ (980 BTU/CFT).
- 8) Outlet temperature controlled by thermostat. Inlet temperature for reference only.
- 9) Inlet temperature controlled by thermostat. Outlet temperature for reference only.
- 10) With engine driven cooling water pump.
- 11) Tolerance ±15%
- 12) Exhaust back pressure is at rated load and will decrease at lower loads.
- 13) All data declared at 1.0 power factor at steady state single point load