



Fuel Consumption (ISO3046/1)	100% of Rated Load	90% of Rated Load	75% of Rated Load	50% of Rated Load
Fuel Consumption (LHV) ISO3046/1, kW (MMBTU/h) * 1,2,3,4	2962 (10.11)	2694 (9.20)	2293 (7.8)	1642 (5.6)
Mechanical Efficiency ISO3046/1, percent 1,2,4	40.7%	40.3%	39.5%	36.8%
Electrical Efficiency ISO3046/1, percent 1,2,3,4	39.2%	38.7%	37.9%	35.3%
Thermal Efficiency ISO3046/1, percent 2,3,4,11	57.7%	58.0%	58.4%	60.5%

* LT&HT pumps power included

Engine Data

Engine Manufacturer	Cummins
Engine Model	QSK60G5 / FR60189 – V16
Fuel Type	Natural Gas (Pipeline)
Displacement, L (cu.in)	60 (3683)
Aspiration	Turbocharged and Aftercooled
Compression Ratio	11.4:1
Bore, mm (in)	159 (6.26)
Stroke, mm (in)	190 (7.48)
Rated Speed, rpm	1500
Lube Oil Capacity, L (gal)	380 (100)
Full Load Lubricating oil consumption, g/kWe-hr (g/hp-hr)	0.15 (0.11)
Electric starter voltage, V	24

Fuel System

Gas supply pressure to engine inlet, bar (psi) 4	0.20 (2.9)
Min. Methane Index	71

Methane Number Capability

Load (Percent of Rated)			
100%	90%	75%	50%
71	71	71	71

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Genset Dimensions

Genset Length, mm (ft) ⁵	4730 (15,5)
Genset Width, mm (ft) ⁵	2099 (6,9)
Genset Height, mm (ft) ⁵	2972 (9,8)
Genset Weight, kg (lbs) ⁵	TBD

Notes:

1. At ISO3046 reference conditions, altitude 1013 mbar (30 in Hg), air inlet temperature 25°C (77°F).
2. According to ISO 3046/I with fuel consumption tolerance of +5% -0%.
3. With air intake at 25°C (77°F). Tolerance $\pm 5^\circ\text{F}$.
4. Tested using pipeline natural gas with LHV of 33.44 MJ/Nm³ (905 BTU/ft³).
5. Weights and set dimensions are just for reference only.

Energy Data

	100% of Rated Load	90% of Rated Load	75% of Rated Load	50% of Rated Load
Continuous Generator Electrical Output kWe@1.0pf ¹	1160	1044	870	580
Total Heat Rejected in LT Circuit, kW (BTU/min) ³	103 (5853)	95,8 (5444)	85 (4841)	68 (3868)
Total Heat Rejected in HT Circuit, kW (BTU/min) ³	686 (39067)	619,5 (35280)	520 (29620)	382 (21747)
Heat Radiated to Ambient, kW (BTU/min) ⁴	125 (7109)	117,4 (6677)	106 (6028)	87 (4948)
Available Exhaust heat, 105°C kW (BTU/min) ³	920 (52319)	848 (48224)	733 (41684)	544 (30936)

Intake Air Flow

	100% of Rated Load	90% of Rated Load	75% of Rated Load	50% of Rated Load
Intake Air Flow, ft ³ /min (L/s) ⁵	3612 (1705)	3233 (1526)	2667 (1259)	1826 (862)

Exhaust Air Flow

	100% of Rated Load	90% of Rated Load	75% of Rated Load	50% of Rated Load
Exhaust Gas Flow, ft ³ /min (L/s) ⁵	8531 (4026)	7845 (3702)	6818 (3217)	4928 (2326)
Exhaust Gas Flow, kg/s (lb/h) ⁵	1,94 (15397)	1,75 (13889)	1,47 (11667)	1,02 (8095)
Exhaust Temperature After Turbine, °C (°F) ⁶	469 (876)	482 (900)	491 (916)	508 (946)
Max Exhaust System Back Pressure, in-Hg (kPa) ^{6,7}	1,5 (5,1)	1,5 (5,1)	1,5 (5,1)	1,5 (5,1)

HT Cooling Circuit

	100% of Rated Load	90% of Rated Load	75% of Rated Load	50% of Rated Load
HT Circuit Engine Coolant Volume, l (gal)	181,7 (48)	181,7 (48)	181,7 (48)	181,7 (48)
HT Coolant Flow @ Max Ext Restriction, m ³ /h (gal/min)	70 (310)	70 (310)	70 (310)	70 (310)
Max HT Engine Coolant Inlet Temp, °C (°F) Reference ⁸	80 (176)	80 (176)	80 (176)	80 (176)
HT Coolant Outlet Temp, °C (°F) ⁸	90 (194)	90 (194)	90 (194)	90 (194)
Max Pressure Drop in External HT Circuit, kPa (psi)	101 (14,7)	101 (14,7)	101 (14,7)	101 (14,7)
Max Static Hd of Coolant Above Crst. Centerline, ft (m)	16,4 (5)	16,4 (5)	16,4 (5)	16,4 (5)

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LT Cooling Circuit

	100% of Rated Load	90% of Rated Load	75% of Rated Load	50% of Rated Load
LT Circuit Engine Coolant Volume, l (gal)	34 (9)	34 (9)	34 (9)	34 (9)
LT Coolant Flow @ Max Ext Restriction, m ³ /h (gal/min)	23 (100)	23 (100)	23 (100)	23 (100)
Max LT Coolant Inlet Temperature °C (°F) ⁹	50 (122)	50 (122)	50 (122)	50 (122)
LT Coolant Outlet Temperature °C (°F) ⁹	54 (129)	54 (129)	54 (129)	54 (129)
Max Pressure Drop in External LT Circuit, kPa (psi)	101 (14,7)	101 (14,7)	101 (14,7)	101 (14,7)
Max Static Hd. of Coolant Above Crsht Centerline, ft (m)	16,4 (5)	16,4 (5)	16,4 (5)	16,4 (5)

Emissions

	100% of Rated Load	90% of Rated Load	75% of Rated Load	50% of Rated Load
NO _x emissions, mg/Nm ³ @ 5% O ₂ (g/hp-h) ⁷	489 (1,06)	475 (1,04)	505 (1,13)	483 (1,15)
CO Emissions Rate mg/Nm ³ @5%O ₂ (g/hp-h) ⁸	676 (1,47)	671 (1,47)	650 (1,45)	633 (1,51)
THC Exhaust Emissions, mg/Nm ³ @ 5% O ₂ (g/hp-h) ⁸	1330 (2,91)	1352 (2,99)	1316 (2,97)	1371 (3,29)

Alternator Data ¹⁰

Manufacturer	Mecc Alte
Alternator Made and Model	ECO 46-1,5S/4A
Frequency (Hz)	50
Power (kVA)	1480
Voltage (V)	400
Phase 3	3
A.V.R.	DER1
Voltage Regulation	(+/-) 0.5%
Insulation System	H
Temperature Rise	F
Protection	IP23
Weight comp. Generator (kg)	3380
Cooling Air (m ³ /min)	135

Notes:

1. With engine driven coolant pump.
2. At ISO3046 reference conditions, altitude 1013 mbar (30 in Hg), air inlet temperature 25°C (77°F).
3. Production variation/tolerance ±10%.
4. Tolerance +/- 15%.
5. According to ISO 3046/l with fuel consumption tolerance of +5% -0%.
6. With air intake at 25°C (77°F). Tolerance ± 5°F
7. Exhaust system back pressure is a rated load and will decrease at lower loads.
8. Outlet temperature controlled by thermostat, inlet temperature for reference only.
9. Inlet temperature controlled by thermostat, outlet temperature for reference only.
10. Continuous (C)
11. Exhaust gas cooled to 105 °C.

Continuous rating definition

Applicable for supplying power continuously to 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 ISO8528, ISO3046, AS2789, DIN6271, and BS5514). This rating is not applicable to all generator set models.

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