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UG14P1/UG16.5E1

Output Ratings

Generating Set Model	UG14P1/UG16.5E1	
LPG	Prime	Standby
380 – 415V. 50 Hz	14.0kVA / 11.2 kW	16.5 kVA / 13.2 kW
220/127V. 60 Hz	16.9 kVA / 13.5 kW	20.0 kVA / 16 kW
Natural Gas		
380 – 415V. 50 Hz	12.5 kVA / 10.0 kW	16.8 kVA / 13.4 kW
220/127V. 60 Hz	15.0 kVA / 12.0 kW	18.8 kVA / 15.0 kW

Ratings at 0.8 pf

Definitions

Standby Rating

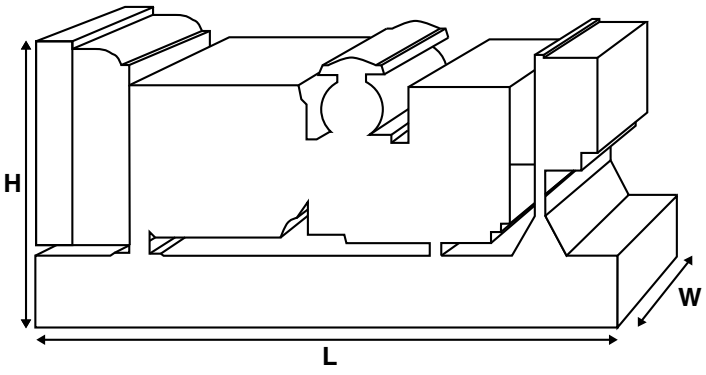
These ratings are applicable for supplying continuous electrical power (at variable load) in the event of a utility power failure. No overload is permitted on these ratings. The alternator on this model is peak continuous rated (as defined in ISO 8528-3).

Prime Rating

These ratings are applicable for supplying continuous electrical power (at variable load) in lieu of commercially purchased power. There is no limitation to the annual hours of operation and this model can supply 10% overload power for 1 hour in 12 hours.

Standard Reference Conditions

Ratings in accordance with ISO 8528. All engine performance data based on the above mentioned maximum continuous ratings. Fuel Consumption data assumes complete combustion of LPG fuel with a calorific value of 95MJ/m^3 and of Natural gas with a calorific value of 34.4MJ/m^3.



Ratings and Performance Data

Engine Make and Model	HM 1.8L	
Alternator manufacturer for FG Wilson by:	Leroy Somer	
Alternator Model:	LUA1014NX	
Control Panel:	PowerWizard 1.0	
Base Frame:	Heavy Duty Fabricated Steel	
Frequency:	**50 Hz**	**60 Hz**
Engine Speed: RPM:	1500	1800
Fuel Consumption LPG: m^3/hr (ft^3/hr)		
– Prime:	1.9 (67.1)	2.2 (77.7)
– Standby:	2.2 (77.7)	2.6 (91.8)
Natural Gas: m^3/hr (ft^3/hr)		
– Prime:	4.3 (151.9)	5.6 (197.8)
– Standby:	5.1 (180.1)	6.3 (222.5)

Available Options

FG Wilson offer a range of optional features to tailor our generating sets to meet your power needs. Options include:

- Upgrade to CE Certification
- A wide range of Sound Attenuated Containers
- A variety of generating set control and synchronising panels
- Additional alarms and shutdowns
- A selection of exhaust silencer noise levels

For further information on all of the standard and optional features accompanying this product please contact your local Dealer or visit: www.FGWilson.com

Dimensions and Weights

Length (L) mm (in)	Width (W) mm (in)	Height (H) mm (in)	Dry kg (lb	Wet kg (lb)
1350 (53.1)	715 (28.1)	1004 (39.5)	393 (866)	405 (893)

Dry = With Lube Oil Wet = With Lube Oil and Coolant

Ratings in accordance with ISO 8528, ISO 3046, IEC 60034, BS5000 and NEMA MG-1/22.
Generating set pictured may include optional accessories.

FG Wilson has manufacturing facilities in the following locations:

Northern Ireland • Brazil • China • India • USA

With headquarters in Northern Ireland, FG Wilson operates through a Global Dealer Network.
To contact your local Sales Office please visit the FG Wilson website at www.FGWilson.com

Engine Technical Data	
No. of Cylinders/Alignment:	4 in Line
Cycle:	4 Stroke
Bore/Stroke: mm (in)	84.0 (3.3) / 82.0 (3.2)
Induction:	Naturally Aspirated
Cooling Method:	Water
Governing Type:	Electronic
Governing Class:	ISO 8528 G2
Compression Ratio:	8.5:1
Displacement: l (cu.in):	1.8 (111)
Engine Electrical System:	
-Voltage/Ground	12/Negative
-Battery Charger Amps	45
Weight (includes lube oil): kg (lb)	143 (315)

Performance		50 Hz	60 Hz
Engine Speed: rpm		1500	1800
Gross Engine Power: kW (hp)	– Standby:	15.7 (21)	19.5 (26)
	– Prime:	13.4 (18)	16.6 (22)
BMEP: kPa (psi)	– Standby:	691 (100.2)	715 (103.7)
	– Prime:	590 (85.5)	609 (88.3)

Fuel Systems				
Fuel Filter Type:		Replaceable Element		
Permitted Fuel:		LPG / Natural Gas		
Fuel Consumption LPG: m³/hr (cfh)				
	110%	**100%**	**75%**	**50%**
Prime	**Load**	**Load**	**Load**	**Load**
50 Hz	2.2 (77.7)	1.9 (67.1)	1.4 (49.4)	1.0 (35.3)
60 Hz	2.6 (91.8)	2.2 (77.7)	1.7 (60.0)	1.2 (42.4)
Standby				
50 Hz	-	2.2 (77.7)	1.6 (56.5)	1.1 (38.8)
60 Hz	-	2.6 (91.8)	1.9 (67.1)	1.4 (49.4)
Fuel Consumption Natural Gas: m³/hr (cfh)				
	110%	**100%**	**75%**	**50%**
Prime	Load	Load	Load	Load
50 Hz	5.1 (180.1)	4.3 (151.9)	3.3 (116.5)	2.3 (81.2)
60 Hz	6.3 (222.5)	5.6 (197.8)	4.3 (151.9)	3.0 (105.9)
Standby				
50 Hz	-	5.1 (180.1)	3.9 (137.7)	2.7 (95.4)
60 Hz	-	6.3 (222.5)	4.7 (166.0)	3.3 (116.5)

Fuel consumption varies widely within each gas type stated. This is because these gases ar available (naturally or produced) with variances in their physical properties.

Air Systems		50 Hz	60 Hz
Combustion Air Flow LPG: m³/min (cfm)			
	– Standby:	1.3 (46)	1.6 (57)
	– Prime:	1.1 (39)	1.3 (46)
Combustion Air Flow Natural Gas:			
m³/min (cfm)	– Standby:	1.1 (39)	1.5 (53)
	– Prime:	1.0 (35)	1.3 (46)
Max. Combustion Air Intake Restriction: kPa (in H_2O)		1.5 (6)	1.5 (6)
Radiator Cooling Airflow: m³/min (cfm)		63 (2225)	75.6 (2670)
External Restriction to Cooling Airflow: kPa (in H_2O)		247 (1.0)	247 (1.0)

Cooling System		50 Hz	60 Hz
Cooling System Capacity: l (US gal)		6.1 (1.6)	6.1 (1.6)
Water Pump Type:		Centrifugal	
Heat Rejected to Water & Lube Oil: kW (Btu/min)	– Standby:	14.1 (804)	17.1 (970)
	– Prime:	12.1 (685)	14.6 (827)
Heat Radiation to Room: kW (Btu/min)			
	– Standby:	7.5 (424)	9.0 (512)
	– Prime:	6.4 (362)	7.7 (436)
Radiator Fan Load:		0.52 (0.7)	0.90 (1.21)

Lubrication System	
Oil Filter Type:	Spin-On, Full Flow
Total Oil Capacity: l (US gal)	4.5 (1.2)
Oil Pan: l (US gal)	4.0 (1.1)
Oil Type:	AP1CF4 15W-40
Oil Cooling Method:	Water

Exhaust System		50 Hz	60 Hz
Max. Allowable Back Pressure: kPa (in Hg)		17.3 (5.1)	17.3 (5.1)
Exhaust Gas Flow LPG: m³/min (cfm)			
	– Standby:	3.87 (137)	4.83 (171)
	– Prime:	3.23 (114)	4.00 (141)
Natural Gas: m³/min (cfm)	– Standby:	3.57 (126)	4.89 (173)
	– Prime:	2.90 (102)	4.36 (154)
Exhaust Gas Temperature LPG: °C (°F):			
	– Standby:	568 (1054)	600 (1112)
	– Prime:	552 (1026)	584 (1083)
Natural Gas °C (°F):	– Standby:	580 (1076)	612 (1134)
	– Prime:	557 (1035)	605 (1121)

Alternator Physical Data

Manufactured for FG Wilson by:	Leroy Somer
Model:	LUA1014NX
No. of Bearings:	Single
Insulation Class:	H
Winding Pitch Code:	2/3 (6)
Wires:	12
Ingress Protection Rating:	IP23
Excitation System:	SHUNT
AVR Model:	R250

Alternator Operating Data

Overspeed: RPM		2250
Voltage Regulation (steady state)**:**		+/- 0.5%
Wave Form NEMA = TIF:		<50
Wave Form IEC = THF:		<2%
Total Harmonic Content LL/LN:		<4.0%
Radiant Heat: kW (Btu/min)	50 Hz:	1.8 (102)
	60 Hz:	2.2 (125)

Alternator Performance Data:

Data Item		50 Hz 380/220	50 Hz 400/230	50 Hz 415/240	50 Hz 220/127	60 Hz 380/220 220/110	60 Hz 230/115	60 Hz 240/120 208/120	60 Hz 440/254 220/127	60 Hz 480/277 240/139
Motor Starting Capability* kVA		39	43	46	50	34	37	39	43	50
Reactances:										
Per Unit	**Xd**	1.45	1.31	1.22	1.08	2.11	1.90	1.76	1.57	1.32
	X'd	0.09	0.08	0.07	0.07	0.13	0.12	0.11	0.11	0.08
	X"d	0.045	0.040	0.037	0.033	0.065	0.058	0.054	0.048	0.040

Reactances shown are applicable to prime ratings using LPG fuel. *Based on 30% voltage dip at 0.9 power factor and shunt excitation system

Voltage Technical Data

50 Hz					60 Hz				
	UG14P1 Prime		UG16.5E1 Standby			UG14P1 Prime		UG16.5E1 Standby	
	kVA	kW	kVA	kW		kVA	kW	kVA	kW
380/220	14.0	11.2	16.5	13.2	380/220	16.9	13.5	20.0	16.0
400/230	14.0	11.2	16.5	13.2	220/110	16.9	13.5	20.0	16.0
415/240	14.0	11.2	16.5	13.2	230/115	16.9	13.5	20.0	16.0
220/127	14.0	11.2	16.5	13.2	240/120	16.9	13.5	20.0	16.0
					208/120	16.9	13.5	20.0	16.0
					440/254	16.9	13.5	20.0	16.0
					220/127	16.9	13.5	20.0	16.0
					480/277	16.9	13.5	20.0	16.0
					240/139	16.9	13.5	20.0	16.0

These ratings are based on generating set performance using LPG fuel.

Voltage Technical Data

50 Hz					60 Hz				
	UG14P1 Prime		UG16.5E1 Standby			UG14P1 Prime		UG16.5E1S Standby	
	kVA	kW	kVA	kW		kVA	kW	kVA	kW
380/220	12.5	10.0	15.0	12.0	220/110	16.7	13.4	18.8	15.0
400/230	12.5	10.0	15.0	12.0	230/115	16.8	13.4	18.8	15.0
415/240	12.5	10.0	15.0	12.0	240/120	16.8	13.4	18.8	15.0
220/127	12.5	10.0	15.0	12.0	208/120	16.8	13.4	18.8	15.0
					440/254	16.8	13.4	18.8	15.0
					220/127	16.8	13.4	18.8	15.0
					480/277	16.9	13.5	18.8	15.0
					240/139	16.9	13.5	18.8	15.0

These ratings are based on generating set performance using Natural Gas fuel.

General Information

Documentation

A full set of operation and maintenance manuals and circuit wiring diagrams.

Generating Set Standards

The equipment meets the following standards: BS5000, ISO 8528, ISO 3046, IEC 60034, NEMA MG-1.22.
FG Wilson is a fully accredited ISO 9001 company.

Warranty

All equipment carries full manufacturer's warranty. Extended warranty terms available. For details on warranty cover please contact your local dealer, or visit our website: www.FGWilson.com

Dealer Contact Details:

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In line with our policy of continuous product development, we reserve the right to change specification without notice.

UG14P1/UG16.5E1/4PP/0111/GB