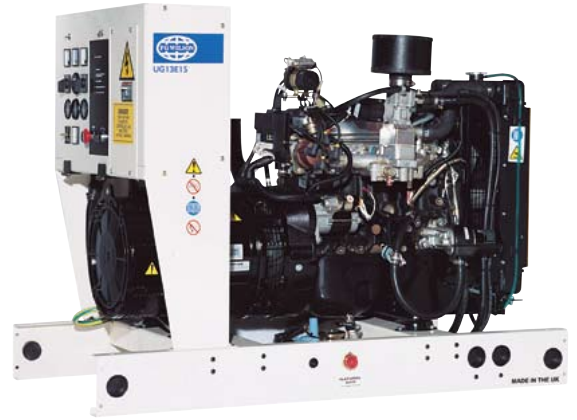




www.FGWilson.com

# UHG24E1S



## Output Ratings

| Generating Set Model     | UHG24E1S           |
|--------------------------|--------------------|
| <b>LPG</b>               | <b>Standby</b>     |
| 220 – 240V, 50 Hz        | 24.0 kVA / 24.0 kW |
| 240/120V, 220/110V 60 Hz | 25.0 kVA / 25.0 kW |
| <b>Natural Gas</b>       |                    |
| 220 – 240V, 50 Hz        | 24.0 kVA / 24.0 kW |
| 240/120V, 220/110V 60 Hz | 25.0 kVA / 25.0 kW |

Ratings at 1.0 pf

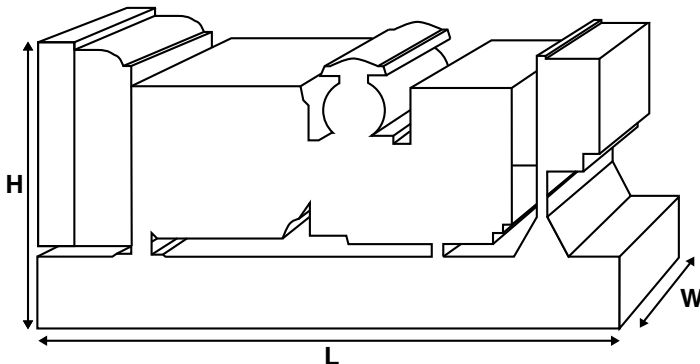
## Definitions

### 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).

### 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<sup>3</sup> and of Natural gas with a calorific value of 34.4MJ/m<sup>3</sup>.



## Ratings and Performance Data

|  |                             |                           |
|--|-----------------------------|---------------------------|
| Engine Make and Model  | HM 1.8L                     |                           |
| Alternator manufacturer for FG Wilson by:                      | Leroy Somer                 |                           |
| Alternator Model:  | LUB1012NX                   |                           |
| Control Panel:   | PowerWizard 1.0             |                           |
| Base Frame:  | Heavy Duty Fabricated Steel |                           |
| Circuit Breaker Type/Rating:                                   | 3 Pole MCCB                 |                           |
| Frequency:   | <b>50 Hz</b>                | <b>60 Hz</b>              |
| Engine Speed: RPM:   | 3000                        | 3600                      |
| Fuel Consumption: LPG m <sup>3</sup> /hr (ft <sup>3</sup> /hr) |                             |                           |
|  | – Standby:                  | 4.5 (158.9) 4.9 (173.0)   |
| Fuel Consumption: NG m <sup>3</sup> /hr (ft <sup>3</sup> /hr)  |                             |                           |
|  | – Standby:                  | 11.5 (406.1) 12.5 (441.4) |

## 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](http://www.FGWilson.com)

## Dimensions and Weights

| Length (L)<br>mm (in) | Width (W)<br>mm (in) | Height (H)<br>mm (in) | Dry<br>kg (lb) | Wet<br>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](http://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 (111.1)             |
| 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                      | 3000         | 3600         |
| Gross Engine Power: kW (hp) – Standby: | 33.0 (44)    | 36.4 (49)    |
| BMEP: kPa (psi) – Standby:             | 1453 (210.7) | 1335 (193.6) |

## Fuel Systems

|   |                     |              |             |             |
|---|---------------------|--------------|-------------|-------------|
| Fuel Filter Type:   | Replaceable Element |              |             |             |
| Permitted Fuel:   | LPG / Natural Gas   |              |             |             |
| <b>Fuel Consumption LPG: m<sup>3</sup>/hr (cfh)</b>         |                     |              |             |             |
|   | 110%                | 100%         | 75%         | 50%         |
| Standby   | Load                | Load         | Load        | Load        |
| 50 Hz   | -                   | 4.5 (158.9)  | 3.4 (120.1) | 2.4 (84.8)  |
| 60 Hz   | -                   | 4.9 (173.0)  | 3.7 (130.7) | 2.6 (91.8)  |
| <b>Fuel Consumption Natural Gas: m<sup>3</sup>/hr (cfh)</b> |                     |              |             |             |
|   | 110%                | 100%         | 75%         | 50%         |
| Standby   | Load                | Load         | Load        | Load        |
| 50 Hz   | -                   | 11.5 (406.1) | 8.7 (307.2) | 6.2 (219.0) |
| 60 Hz   | -                   | 12.5 (441.4) | 9.5 (335.5) | 6.8 (240.1) |

## Air Systems

|   | 50 Hz      | 60 Hz      |
|---|------------|------------|
| Combustion Air Flow LPG: m <sup>3</sup> /min (cfm)  |            |            |
| – Standby:  | 2.6 (92)   | 3.2 (113)  |
| Combustion Air Flow Natural Gas:                    |            |            |
| m <sup>3</sup> /min (cfm) – Standby:                | 2.5 (88)   | 3.03 (107) |
| Max. Combustion Air Intake                          |            |            |
| Restriction: kPa (in H <sub>2</sub> O)              | 1.5 (6)    | 1.5 (6)    |
| Radiator Cooling Airflow: m <sup>3</sup> /min (cfm) | 102 (3602) | 124 (4379) |
| External Restriction to Cooling Airflow:            |            |            |
| kPa (in H <sub>2</sub> O)                           | 247 (0.99) | 247 (0.99) |

## 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:    | 28.4 (1616) | 30.8 (1748) |
| Heat Radiation to Room: kW (Btu/min) |             |             |
| – Standby:                           | 15.0 (853)  | 16.2 (922)  |
| Radiator Fan Load:                   | 1.62 (2.17) | 2.80 (3.75) |

## 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: m <sup>3</sup> /min (cfm)   |            |            |
| – Standby:  | 8.3 (293)  | 10.4 (367) |
| Natural Gas: m <sup>3</sup> /min (cfm) – Standby: | 8.4 (297)  | 10.5 (371) |
| Exhaust Gas Temperature LPG: °C (°F):             |            |            |
| – Standby:  | 625 (1157) | 668 (1234) |
| Natural Gas °C (°F):                              |            |            |
| – Standby:  | 635 (1175) | 675 (1247) |

### Alternator Physical Data

|                                |             |
|--------------------------------|-------------|
| Manufactured for FG Wilson by: | Leroy Somer |
| Model:                         | LUB1012NX   |
| No. of Bearings:               | Single      |
| Insulation Class:              | H           |
| Winding Pitch Code:            | 2/3 (M)     |
| Wires:                         | 4           |
| Ingress Protection Rating:     | IP23        |
| Excitation System:             | SHUNT       |
| AVR Model:                     | R250        |

### Alternator Operating Data

|                                    |   |
|------------------------------------|---|
| Overspeed: RPM                     | 4500  |
| Voltage Regulation (steady state): | +/- 1%  |
| Wave Form NEMA = TIF:              | <50   |
| Wave Form IEC = THF:               | <2%   |
| Total Harmonic Content LL/LN:      | <4%   |
| Radio Interference:                | Suppression is in line with European Standard EN61000-6 |
| Radiant Heat: kW (Btu/min)         | 50 Hz: 3.9 (222)<br>60 Hz: 4.2 (239)                    |

### Alternator Performance Data:

| Data Item                             | 50 Hz |       |       | 60 Hz   |         |
|---------------------------------------|-------|-------|-------|---------|---------|
|                                       | 220   | 230   | 240   | 220/110 | 240/120 |
| <b>Motor Starting Capability* kVA</b> | 34    | 36    | 38    | 31      | 34      |
| <b>Reactances:</b>                    |       |       |       |         |         |
| <b>Per Unit</b>                       |       |       |       |         |         |
| <b>X<sub>d</sub></b>                  | 3.18  | 2.90  | 2.67  | 3.97    | 3.33    |
| <b>X'<sub>d</sub></b>                 | 0.16  | 0.15  | 0.13  | 0.20    | 0.17    |
| <b>X''<sub>d</sub></b>                | 0.080 | 0.073 | 0.066 | 0.099   | 0.083   |

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            |      |
|-----|------------------|------|------------------|------|
|     | UHG24E1S Standby |      | UHG24E1S Standby |      |
|     | kVA              | kW   | kVA              | kW   |
| 240 | 24.0             | 24.0 | 25.0             | 25.0 |
| 230 | 24.0             | 24.0 | 25.0             | 25.0 |
| 220 | 24.0             | 24.0 |                  |      |

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

### Voltage Technical Data

|     | 50 Hz            |      | 60 Hz            |      |
|-----|------------------|------|------------------|------|
|     | UHG24E1S Standby |      | UHG24E1S Standby |      |
|     | kVA              | kW   | kVA              | kW   |
| 240 | 24.0             | 24.0 | 25.0             | 25.0 |
| 230 | 24.0             | 24.0 | 25.0             | 25.0 |
| 220 | 24.0             | 24.0 |                  |      |

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](http://www.FGWilson.com)

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