P30P1 / P33E1

Output Ratings		
Generating Set Model	P30P1	P33E1
	Prime*	Standby*
380-415V, 50 Hz	30.0 kVA	33.0 kVA
	24.0 kW	26.4 kW
480V, 60 Hz	33.8 kVA	37.5 kVA
	27.0 kW	30.0 kW

* Refer to ratings definitions on page 4.
Ratings at 0.8 pf

Technical Data		
Engine Make & Model	Perkins 1103A-33G1	
Alternator Model	LL1014S	
Base Frame Type	Heavy Duty Fabricated Steel	
Circuit Breaker Type/Rating	3 Pole MCB < 160 Amps	
Frequency	50 Hz	60Hz
Engine Speed	1500	1800
Fuel Tank Capacity: Litres (US Gal)	144 (38.0)	
Fuel Consump, P30P1: L/hr (US Gal/hr)	6.9 (1.8)	8.0 (2.1)
Fuel Consump, P33E1: L/hr (US Gal/hr)	7.6 (2.0)	8.9 (2.4)

Engine Technical Data

Physical Data

Manufacturer:	Perkins
Model:	1103A-33G1
No. of Cylinders/Alignment:	3 in-line
Cycle:	4 Stroke
Induction:	Naturally Aspirated
Cooling Method:	Water
Governing Type:	Mechanical
Governing Class:	ISO 8528 G2
Compression Ratio:	19.25:1
Displacement: L (cu.in):	3.3 (201.4)
Bore/Stroke: mm (in)	105.0 (4.1)/127.0 (5.0)
Moment of Inertia: kg m² (lb/in²)	1.14 (3896)
Engine Electrical System:	
-Voltage/Ground	12 / Negative
-Battery Charger Amps	65
Weight: kg (lbs) -Dry	365 (805)
-Wet	383 (844)

Performance

	50Hz	60Hz
Engine Speed: rpm	1500	1800
Gross Engine Power:		
kW (hp) -Standby	31.0 (42.0)	36.5 (49.0)
-Prime	28.2 (38.0)	33.1 (44.0)
BMEP: kPa (psi)		
-Standby	752.0 (109.0)	738.0 (107.0)
-Prime	684.0 (99.2)	669.0 (97.0)
Regenerative Power: kW	7.0	9.0

Fuel System

Fuel Filter Type: Replaceable Element

Recommended Fuel: Class A2 Diesel

Fuel Consumption: L/hr (US Gal/hr)

	110% Load	100% Load	75% Load	50% Load
P30P1				
50 Hz	7.6 (2.0)	6.9 (1.8)	5.2 (1.4)	3.8 (1.0)
60 Hz	8.9 (2.4)	8.0 (2.1)	6.2 (1.6)	4.7 (1.2)
P33E1				
50 Hz	-	7.6 (2.0)	5.7 (1.5)	4.1 (1.1)
60 Hz	-	8.9 (2.4)	6.8 (1.8)	5.0 (1.3)

(based on diesel fuel with a specific gravity of 0.84 and conforming to BS2869, Class A2)

Air System

	50 Hz	60 Hz
Air Filter Type:	Replaceable Element	
Combustion Air Flow:		
m³/min (cfm) -Standby:	2.5 (88)	3.0 (106)
-Prime:	2.5 (88)	2.9 (102)
Max. Combustion Air Intake		
Restriction: kPa (in H_2O)	6.5 (26.1)	6.5 (26.1)
Radiator Cooling Airflow:		
m³/min (cfm)	69.6 (2458)	90.6 (3200)
External Restriction to		
Cooling Airflow: Pa (in H_2O)	120 (0.5)	120 (0.5)

Cooling System

	50 Hz	60 Hz
Cooling System Capacity:		
L (US Gal)	10.2 (2.7)	10.2 (2.7)
Water Pump Type:	Centrifugal	
Heat Rejected to Water &		
Lube Oil: kW (Btu/min)		
-Standby:	15.2 (864)	21.6 (1228)
-Prime:	13.6 (773)	19.2 (1092)
Heat Radiation to Room:		
kW (Btu/min) -Standby:	9.2 (523)	9.7 (552)
-Prime:	8.2 (466)	8.4 (478)
Radiator Fan Load: kW (hp)	0.3 (0.4)	0.5 (0.7)

Lubrication System

Oil Filter Type:	Spin-On, Full Flow
Total Oil Capacity L (US Gal):	8.3 (2.2)
Oil Pan L (US Gal):	7.8 (2.1)
Oil Type:	AP1 CG4 15W-40
Cooling Method:	Water

Exhaust System

	50 Hz	60 Hz
Silencer Type:	Level 1	
Silencer Model & Qty:	SD50 (1)	
Pressure Drop Across		
Silencer System: kPa (in Hg)	1.8 (0.5)	2.0 (0.6)
Silencer Noise Reduction		
Level: dB	20.0	19.0
Max. Allowable Back		
Pressure: kPa (in Hg)	15.0 (4.4)	15.0 (4.4)
Exhaust Gas Flow: m³/min (cfm)		
-Standby:	6.2 (219)	7.5 (265)
-Prime:	5.2 (184)	6.3 (222)
Exhaust Gas		
Temperature:°C (°F):		
-Standby:	490 (914)	510 (950)
-Prime:	472 (882)	501 (934)

Alternator Performance Data

Data Item	50 Hz				60 Hz				
	415/240V	400/230V 230/115V 200/115V	380/220V 220/110V	220/127V	480/277V 240/139V	380/220V 220/110V	240/120V 208/120V	230/115V	440/254V 220/127V
Motor Starting Capability* kVA	64	60	55	71	70	47	55	52	61
Reactances: Per Unit									
Xd	1.97	2.12	2.35	1.75	1.99	3.17	2.65	2.86	2.37
X'd	0.10	0.11	0.12	0.09	0.11	0.17	0.14	0.15	0.13
X"d	0.052	0.056	0.062	0.046	0.053	0.084	0.070	0.076	0.063

Reactances shown are applicable to prime ratings

* Motor starting capability based on 30% voltage dip at 0.6 power factor.

Alternator Technical Data

Physical Data		Operating Data	
Manufacturer:	FG Wilson	**Overspeed:** RPM	2250
Model:	LL1014S	**Voltage Regulation (steady state)**	+/- 0.5
No. of Bearings:	1	**Wave Form NEMA =TIF**	<50
Insulation Class:	H	**Wave Form IEC=THF**	<2%
Winding Pitch Code:	2/3 (No. 6)	**Total Harmonic Content LL/LN**	<4%
Wires:	12	**Radio Interference**	Suppression is in line with European Standard EN61000-6
Ingress Protection Rating:	IP23	**Radiant Heat:** kW (Btu/min)	
Excitation System:	Shunt	-50 Hz:	3.3 (188)
AVR Model:	R230	-60 Hz:	3.8 (216)

Technical Data

3 Phase Ratings and Performance at 50 Hz, 1500 RPM

Voltage	Model: P30P1 Prime		Model: P33E1 Standby	
	kVA	kW	kVA	kW
415/240	30.0	24.0	33.0	26.4
400/230	30.0	24.0	33.0	26.4
380/220	30.0	24.0	33.0	26.4
230/115	30.0	24.0	33.0	26.4
220/127	30.0	24.0	33.0	26.4
220/110	30.0	24.0	33.0	26.4
200/115	30.0	24.0	33.0	26.4

3 Phase Ratings and Performance at 60 Hz, 1800 RPM

Voltage	Model: P30P1 Prime		Model: P33E1 Standby	
	kVA	kW	kVA	kW
480/277	33.8	27.0	37.5	30.0
440/254	33.8	27.0	37.5	30.0
380/220	33.8	27.0	37.4	29.9
240/139	33.8	27.0	37.5	30.0
240/120	33.8	27.0	37.5	30.0
230/115	33.8	27.0	37.5	30.0
220/127	33.8	27.0	37.5	30.0
220/110	33.8	27.0	37.4	29.9
208/120	33.8	27.0	37.5	30.0

Definitions

Standby Rating

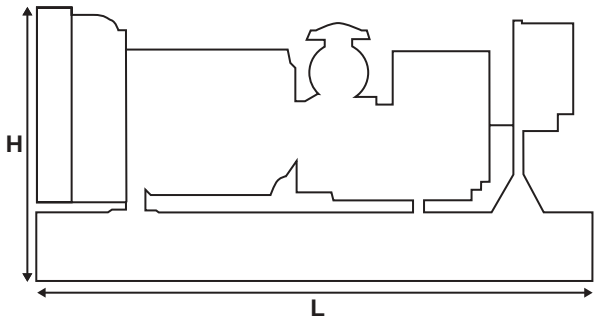
These ratings are applicable for supplying continuous electrical power (at variable load) in the event of a utility power failure. No overload is permitted on these ratings. The alternator on this model is peak continuous rated (as defined in ISO8528-3).

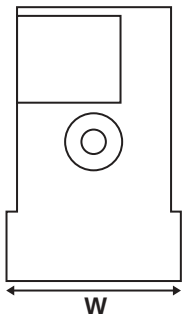
Prime Rating

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

Note: Standard reference conditions 27˚C (80˚F) Air Inlet Temp, 152.4m (500ft) A.S.L. 60% relative humidity. All engine performance data based on the above mentioned maximum continuous ratings. Fuel consumption data at full load with diesel fuel with specific gravity of 0.85 and conforming to BS2869: 1998, Class A2.





Weights & Dimensions

Weights: kg (lbs)		Dimensions: mm (in)	
Net (+ lube oil)	790 (1742)	Length	1770 (69.7)
Wet (+ lube oil & coolant)	810 (1786)	Width	714 (28.1)
Fuel, lube oil & coolant	930 (2050)	Height	1368 (53.9)

General Data

Documents

A full set of operation and maintenance manuals, circuit wiring diagrams, and commissioning/fault finding instruction leaflets.

Generating Set Standards

The equipment meets the following standards: BS5000, ISO 8528, ISO 3406, IEC 60034, VDE 0530, NEMA MG-1.22.

Warranty

All equipment carries full manufacturer's warranty. Extended warranty terms available. For details on warranty cover please contact your local dealer.