you can depend on TAYLOR POWER SYSTEMS

Model: TA80

Unit Ratings

		60Hz
Standby:	kW/kva	80
Prime:	kW/kva	72

Alternator Ratings at 1.0 Power Factor

Features

- Single source responsibility for the generator set and accessories.
- Prototype and production tested to insure one step load acceptance per NFPA 110.
- Two year limited warranty on generator sets and accessories.
- Unit conforms to CSA, NEMA, EGSA, ANSI and other standards.
- Heavy duty 4 cycle industrial engine for reliability and fuel efficiency.
- Brushless rotating field generator with class H insulation.
- Heavy duty steel base with integral vibration isolators.
- Analog Control system with an ECU-CAN76 providing metering and monitoring.
- EPA Tier 3 Certified Engine.

Perkins Diesel Engine

Model 1104D-E44TAG1

Basic technical data

Number of cylinders	4
Cylinder arrangement	Vertical in-line
Cycle	Four stroke
Induction system	Turbocharged, air to air charge cooled
Compression ratio	16.2:1
Bore	4.13 in. (105 mm)
Stroke	5.0 in. (127 mm)
Cubic capacity	268.5 cu in. (4.4 L)
Direction of rotation	Anti-clockwise when viewed from flywheel
Firing order	1,3,4,2

Cooling system

Cooling pack

Overall face area of matrix	666.5 in² (0.43 m²)
Width of matrix	24.7 in. (629 mm)
Height of matrix	27.1 in. (690 mm)

Radiator

Face area	465 in² (0.3 m²)
Number of rows and material	38, Aluminum
Matrix density and material	10.0, Aluminum fins per inch
Width of matrix	17.2 in. (438 mm)
Height of matrix	27.1 in. (690 mm)
Pressure cap setting	14.5 psi (100 kPa)

Charge cooler

Face area	201.5 in² (0.13 m²)
Number of rows and material	9, Aluminum
Matrix density and material	7.5, Aluminum
Width of matrix	7.5 in. (191 mm)
Height of matrix	27.1 in. (690 mm)

Fan

diameter	22 in. (559 mm)
Drive ratio	1.25:1
Number of blades	7
Material	Composite
Type	Pusher

Coolant

Total system capacity	
With radiator	4.5 gal (17 L)
Without radiator	1.8 gal (7.0 L)
Coolant pump drive	Gear
Coolant pump drive ratio	2:1
Maximum top tank temperature	233° F (112° C)
Temperature rise across engine (rating dependent)	43.9-44.6° F (6.6-7.0 °C)
Thermostat operation range	185-203° F (85-95 °C)
Recommended coolant:	50% ethylene glycol with a corrosion Inhibitor (BS 658 : 1992 or MOD AL39) and 50% clean fresh water.

Designation	Units	Prime	Standby
		60 Hz	
Gross engine power	hp (kWb)	118 (88.0)	130 (96.8)
Electropak net engine power	hp (kWm)	110 (82.0)	122 (90.8)
Brake mean effective pressure	psi (kPa)	234 (1612)	257 (1771)
Engine coolant flow (against 5 psi (35 kPa) restriction)	gal/min (L/min)	37 (169)	37 (169)
Cooling fan air flow (29 psi (200 kPa) external restriction)	cfm (m³/min)	7,924 (224.4)	7,924 (224.4)
Combustion air flow (at rated speed)	cfm (m³/min)	268 (7.6)	272 (7.7)
Exhaust gas flow (max.)	cfm (m³/min)	600 (17.0)	632 (17.9)
Exhaust gas mass flow (max.)	lb/min. (Kg/ min)	20.1 (9.1)	20.5 (9.3)
Exhaust gas temperature in manifold Max.	°F (°C)	878 (470)	918 (492)
Boost pressure ratio	-	2.5	2.6
Overall thermal efficiency (net)	%	34.6	35.4

Exhaust system

Maximum back pressure	2.1 psi (15 kPa)
Exhaust outlet size	2.5 in. (64 mm)

Fuel system

Type of injection	Direct
Fuel injection pump	Common rail
Fuel atomizer	Unit injector / multi-hole

Fuel lift pump

Max flow through customer filter	34.3 gal/hour (130 L/hr.)
Max fuel supply restriction at lift pump	5.8 psi (40 kPa)
Max fuel return restriction at low idle	7.2 psi 50 kPa)
Max fuel return flow	28.2 cfm (0.8 m³min)
Maximum suction head	17 kPa (1.7 m)
Maximum static pressure head	10 kPa (1.0 m)
Governor type	Control by ECM
Speed control to	ISO 8528, G3

Fuel Consumption gal/hr (L/hr.)

Power Rating				
Speed	110%	100%	75%	50%
60Hz	6.75 (25.55)	6.26 (23.69)	4.95 (18.74)	3.58 (13.55)

Lubrication system

Lubricating oil capacity total system	2.1 gal (8.0 L)
Maximum sump capacity	1.8 gal (7.0 L)
Minimum sump capacity	1.4 gal (5.5 L)
Maximum engine operating angles	
Front up, front down, right side or left side	25°

Lubricating oil pressure

Relief valve opens	65 psi (450 kPa)
At maximum no-load speed	40-49 psi (280-340 kPa)
Oil temperature (continuous operation)	257° F (125° C)
Oil temperature (maximum intermittent operation)	275° F (135 ° C)
Oil consumption at full load as a % of fuel consumption	0.15%

Electrical system

Type	12 volt negative earth
Alternator type	Denso A115i
Alternator voltage	12V
Alternator output	65A
Starter motor type	Denso P95
Starter motor voltage	12V
Starter motor power	4.0 hp (3.0 kW)
Number of teeth on flywheel	115
Number of teeth on starter pinion	10
Minimum cranking speed	80 rev/min

Induction system

Maximum air intake restriction

Clean filter	.73 psi (5 kPa)
dirty filter	1.2 psi (8 kPa)
Air filter type	2 stage cyclonic/ paper element

Duct allowance with 50% glycol			
Rev/min	°F (°C)	psi (kPa)	cfm (m³/min)
1800	127 (53)	17.4 (120)	6,427 (182)
1800	114 (46)	29 (200)	5,438 (154)

Generator Controller

Analog Top Mount Controller
This Generator control panel has analog instruments to monitor AC voltage, AC frequency, percent of load and, run time/hour meter. Safety shutdowns provide red LED indication for overspeed, overcrank, low oil pressure, and high coolant temperature. Provide green LED indication of engine running. Control switch is provided for local and remote starting with 3 position run/off/remote switch.
There is also an engine mounted emergency by-pass key switch with mechanical oil pressure and coolant temperature gauge.

AC Alternator Specifications

Taylor Power Systems uses Full Output Rated 4 Lead design Single Phase Generators, which provide superior motor starting, and generator efficiency.

STANDARDS
Stamford industrial generators meet the requirements of BS EN 60034 and the relevant section of other international standards such as B55000, VDE 0530, NEMA MG1-32, 1EC34, CSA C22.2-100, A51359.
Other standards and certifications can be considered on request.

VOLTAGE REGULATORS
MX341 AVR
This sophisticated AVR is incorporated into the Stamford Permanent Magnet Generator (PMG) control system.
The PMG provides power via the AVR to the main exciter, giving a source of constant excitation power independent of generator output. The main exciter output is then fed to the main rotor, through a full wave bridge, protected by a surge suppressor. The AVR has in-built protection against sustained over-excitation, caused by internal or external faults. This de-excites the machine after a minimum of 5 seconds.
An engine relief load acceptance feature can enable full load to be applied to the generator in a single step.
If three-phase sensing is required with the PMG system the MX321 AVR must be used.
We recommend three-phase sensing for applications with greatly unbalanced or highly non-linear loads.

(Optional) MX321 AVR
The most sophisticated of all our AVRs combines all the features of the MX341 with, additionally, three-phase rms sensing, for improved regulation and performance. Over voltage protection is built-in and short circuit current level adjustments is an optional facility.

WINDINGS & ELECTRICAL PERFORMANCE
All generator stators are wound to *2/3* pitch. This eliminates triplen (3rd, 9th, 15th **...)** harmonics on the voltage waveform and is found to be the optimum design for trouble-free supply of non-linear loads. The *2/3* pitch design avoids excessive neutral currents sometimes seen with higher winding pitches, when in parallel with the mains. A frilly connected damper winding reduces oscillations during paralleling. This winding, with the 2/3 pitch and carefully selected pole and tooth designs, ensures very low waveform distortion.

SHAFT
The generator rotor is dynamically balanced to better than B56861:Part 1 Grade 2.5 for minimum vibration in operation.

INSULATION/IMPREGNATION
The insulation system is class H.
All wound components are impregnated with materials and processes designed specifically to provide the high build required for static windings and the high mechanical strength required for rotating components.

QUALITY ASSURANCE
Generators are manufactured using production procedures having a quality assurance level to BS EN ISO 9001.

Standard Features and Optional Accessories

Standard Features

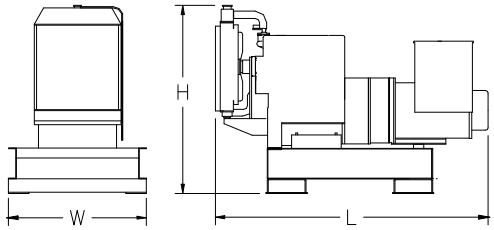
- **Heavy duty steel base**
- **Vibration isolators**
- **Battery**
- **Battery rack**
- **Battery cables**
- **Battery Charger**
- **Spark arresting muffler**
- **Flexible fuel lines**
- **PMG Exciter**
- **Water jacket heater**
- **Electronic Isochronous Governor**
- **Owners manual**

Optional Accessories

- ☐ Exhaust Silencer
- ☐ Sub-Base Fuel Tank
- ☐ Above ground fuel tank
- ☐ Oil pan heater
- ☐ Battery heater
- ☐ Generator strip heater
- ☐ Line circuit breaker
- ☐ Automatic transfer switch
- ☐ Elevated base

WEIGHTS AND DIMENSIONS

OVERALL SIZE, L x W x H, in.: 78 in. x 33 in. x 50 in.
WEIGHT (WET): 2,055 lbs.
Note: Dim and weights reflect standard open unit with no options



Note: This drawing is provided for reference only and should not be used for planning installation. Contact your local distributor for more detailed information.

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