



MTU Detroit Diesel Series

Specification & Application Data



Generator depicted with sound attenuated option, some accessories for display only.

60Hz Power Ratings kW (kVA)

* Prime power rating for reference only.

Voltage VAC	Phase	PF	Standby		Prime	
			kW	kVA	kW	kVA
120/240	1	N/A	N/A	N/A	N/A	N/A
120/208	3	0.8	270	337.5	243	321
120/240 Delta	3	0.8	270	337.5	243	300
277/480	3	0.8	270	337.5	243	300
347/600**	3	0.8	N/A	N/A	N/A	N/A

Rating Definitions: (N/A = Not available for model designated)

Standby - All Industrial Sets are Standby Rated, applicable for a varying emergency load for the duration of a utility power outage with no overload capability. Alternator winding temperature rise is 120 °C.

Prime - Prime rating is applicable for supplying power to a varying load in lieu of utility for an unlimited amount of running time. (Max. load factor = 80%) A 10% overload capacity is available for 1 out of every 12 hours.

** 600 Volt configuration not available as UL2200 certified generator set.

Overview of the HIPOWER® MTU Detroit Diesel Series of Industrial Generator Sets:

HIPOWER® Industrial generators are factory-built in facilities that utilize the latest technology in sheet metal fabrication, mechanical and electrical component assembly, production and testing.

Each model is the result of computer aided design and modeling backed up by exhaustive prototype-testing. Our development technology results in a unique range of innovative designs for highly reliable generator sets backed-up by a limited warranty covering all components.

Standard Configuration of Industrial Sets:

- **MTU Detroit Diesel Engine:** Long-life, heavy-duty, 4-cycle, direct injection engine from a world renowned manufacturer for economy of operation and maximum reliability and durability. Capable of full rated load acceptance in one step.
- **Cooling:** Radiator with belt driven pusher fan.
- **Filtration:** Heavy duty replaceable element air-cleaner
- **Alternator:** Single bearing, 4-pole, rotating field, self-excited, self-ventilated, 12-wire re-connectable, 60Hz brushless alternator with Class H insulation. Automatic voltage regulator (AVR) providing close voltage regulation.
- **Certification:** Generator set is CSA certified and meets ISO 8528-5.
- **Arrangement:** Open skid with engine and alternator units closed coupled together and with resilient anti-vibration isolators mounted between the assembly and a heavy-duty steel base. The sturdy base frame has openings allowing for winching, slinging and forklift pockets for ease of handling
- **Auto Start Control Panel:** Digital auto-start microprocessor based control panel with remote start capability.
- **Starting System:** 24 volt starter motor, battery cables, battery and belt driven charging alternator.

Standard Features of Industrial Sets:

- HIPOWER® is a single source for all the generator system
- Generators are produced in a facility dedicated to generator set manufacture
- The generator set can accept rated load in one step
- 2 years or 1000 hours limited warranty given as standard. Extended warranties offered as options to the standard
- Base set meets NFPA 110, Level 1, when accessorized with the required equipment and installed per NFPA standards
- Test certificates available for the fully factory tested industrial generator sets
- HIPOWER® generator sets are designed to fit a full range of options for complying with many diverse applications
- Full range of safety features to ensure full protection of the generator system. (See back-page for details).



Industrial Generator Set Specification:

Governor regulation class	ISO 8528 Part 1 Class G3
Voltage regulation, no load to full load	plus or minus 1%
Frequency regulation	Ischronous
Radio frequency emissions compliance	Meets requirements of most industrial and commercial applications
skVA at 480 volts with 30% voltage dip	1100
Main Line Circuit breaker – amps capacity	1200A (208V) - 800A (240V) - 400A (480V - 600V)

Engine Specification:

Manufacturer	MTU Detroit Diesel
Model	6R 1600 G70S
EPA certified	Tier 3
Crankshaft speed	1,800 rpm
Type	Diesel, 4-stroke
Injection	Direct
Aspiration	Turbocharged, aftercooled
Number of cylinders	6
Cylinder arrangement	In line
Displacement CID (liters)	640.7 (10.5)
Bore and Stroke ins (mm)	4.8 x 5.9 (122 x 150)
Nominal h.p. power	418 hp
Cooling	Liquid
Governor	Electrical
Starting motor and alternator	24 V
Compression ratio	17.5:1
Air cleaner type	Medium duty - double cartridge
Exhaust gas flow cu. ft/min (cu. m/min)	2330 (66)
Max. exhaust gas temp at full load ° F (° C)	804 (429)
Max. permissible back pressure - ins H2O (mbar)	60.2(15)

Cooling system:

Engine cooling air flow - cu.ft/sec (cu. m/sec)	289.5 (8.2)
Alternator cooling flow - cu. ft/sec (cu. m/sec)	34.96 (0.99)
Total cooling air flow (eng, alt, combustion) cu. ft/min (cu. m/min)	21788 (617)
Total cooling capacity - US gallons (liters)	22.2 (84)

Lubricating system:

Oil pan capacity - US gallons (liters)	7.7 (29.0)
Oil pan capacity with filter - US gallons (liters)	12.2 (46)
Oil cooler cooling	Liquid
Recommended lubricating oil grade	S10 W40
Oil consumption at full load	0.5 % of fuel consumption
Oil pressure - psi (kPa)	63.8 (439.9)

Engine electrical system:

Starting motor voltage	24 V
Battery capacity	2 x 75 Ah
Cold cranking amps - minimum	800 Amp

Fuel System:

Recommended fuel	# 2 Diesel - ULSD
Fuel supply line, min. ID mm(in.)	11.0 (0.44)
Fuel return line, min. ID, mm (in.)	6.0 (0.25)
Max. lift, fuel pump, type, m (ft)	Engine-Driven, 1.8 (6.0)
Fuel filter	Secondary 8 Microns @ 98% Efficiency

Fuel consumption:

	Standby Power Rating	Prime Power Rating
100% load – US gallons/hour	18.9	17.01
75% load - US gallons/hour	14.6	12.76
50% load - US gallons/hour	10.8	9.57
25% load - US gallons/hour	7.9	7.18

Alternator Specification:

Manufacturer	Stamford
Model	HCI 444 E
Voltages	120/208V - 277/480V
Alternator Type	Four pole, rotating field
Excitation System	Brushless, self-exciting
Power factor	0.8
Number of leads	12 leads, reconnectable
Stator Pitch	2/3
Insulation	Class H
Windings – Temperature Rise	150° C
Enclosure (IEC-34-S)	IP23
Bearing	Single, sealed
Coupling	Flexible disc
Amortisseur windings	Full
Voltage regulation – no load to full load	plus or minus 1%
TIF	<50
Line harmonics	5% maximum

Standard Features: *(see back-9page for control panel details)*

● Radiator with pusher fan	● Standard fuel filter
● Medium - duty, two-stage dry element	● All rotating components (i.e. fan) protected with metal guards
● Heavy-duty engine start batteries in rack with cables	● All hot components (i.e. exhaust) protected with metal guards
● External emergency stop switch	● Ground connection prepared for ground spike (not supplied)
● Control Panel DSE 7310 (See over for details)	● Main line ABB UL listed circuit breaker for overload protection
● Oil drain extension	● Operation and installation literature
● Steel base for mounting on fuel tank and/or concrete surface	● UL/CSA certified

Available Options:

<input type="checkbox"/> Sound attenuated canopy with rock-wool insulation, silencer, rounded corners for rigidity and weather protection & stainless steel fixtures	
<input type="checkbox"/> Electric actuator & louvers for air intake and exhaust (for above)	<input type="checkbox"/> Alternator anti-condensation heaters
<input type="checkbox"/> Residential silencer -35dBA (for open skid only)	<input type="checkbox"/> Murphy oil make-up tank 2 or 4 gallon
Fuel Tank Options:	<input type="checkbox"/> 24-hr UL142 <input type="checkbox"/> 48-hr UL142
<input type="checkbox"/> Static battery charger 2.5A UL	<input type="checkbox"/> Static battery charger 10A UL
<input type="checkbox"/> Engine block heater	<input type="checkbox"/> Control panel heater
<input type="checkbox"/> Racor water-separator filter	<input type="checkbox"/> Battery blanket
<input type="checkbox"/> PMG AVR for Stamford Alternator only	<input type="checkbox"/> Remote annunciator
Auto Transfer Switch (ATS) Options:	<input type="checkbox"/> Open transition ATS <input type="checkbox"/> Closed transition ATS
	<input type="checkbox"/> Delayed transition ATS <input type="checkbox"/> Service entrance ATS

HIPOWER DSE 7310 Control Panel: HIPOWER's auto-start control panel DSE 7310 is supplied by Deep Sea Electronics with a manual or auto start selection switch with push button reset. Displays with indication of: phase to neutral voltage, voltage between phases, current (amps) per phase, frequency, power factor, kW and kVA outputs, fuel level, engine speed, hours run, battery voltage and battery charge voltage.

Engine and generator alarms for: battery charge failure, emergency stop activated, over-speed, under-speed, low oil pressure, high coolant temperature, low coolant level, low fuel level, overload, unbalanced voltage, over and under voltage, over frequency, short circuit, inverse power and incorrect phase sequence.

All protections are programmable to: Warning alarm without engine shutdown or alarm with engine shutdown, with or without cooling period. Warning alarms for: low fuel level, battery voltage failure and battery charging alternator failure



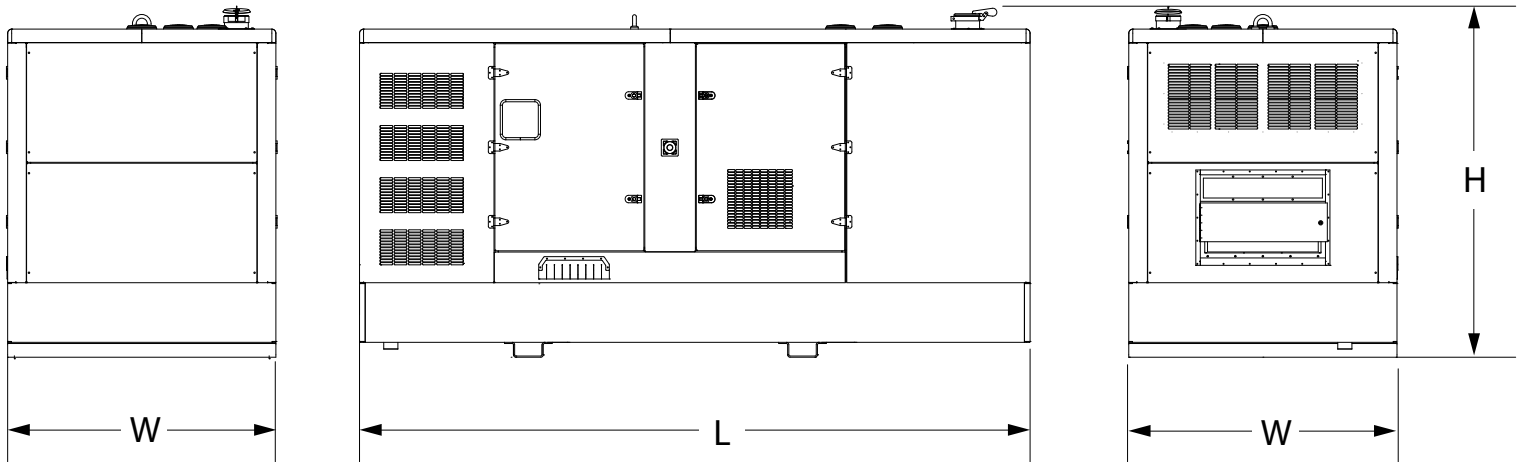
Alternator alarms included: Overload, unbalanced voltage, over voltage, under voltage, over frequency, under frequency, short circuit, reverse power, and incorrect phase sequence.



Pictures of Control Panel RH and Distribution Panel LH may include optional equipment and/or accessories

Model HMW 270 T6 Enclosed Set

key dimensions and sound levels



Configuration	Fuel Tank Data (base option)		Generator Data *				
	Run Time Hours	Capacity (Gals)	L = Length	W = Width	H = Height	Weight lbs	dBA
Enclosed Set (as diagram)	8.34	157.7	161.4"	63.0"	86.6"	9790	73
Open Set (not shown)	TBA	TBA	130.6"	54.7"	81.2"	6613	TBA

* All measurements are approximate and for estimation purposes only. Weights are without fuel tank. Sound levels measured at 23ft (7m) and does not account for ambient site conditions.

Codes and Standards Compliances used where applicable



- NFPA 99
- NFPA 110
- ISO 8528-5
- ISO 1708A.5
- ISO 3046
- BS5514
- SAE J1349
- DIN6271
- IEE C62.41 TESTING
- NEMA ICS 1

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