



Model: 1350DSEB

380-4160 V

Diesel



Ratings Range

		60 Hz	50 Hz
Standby:	kW	940-1370	968-1232
	kVA	1175-1713	1210-1540
Prime:	kW	860-1250	880-1120
	kVA	1075-1563	1100-1400

Generator Set Ratings



Standard Features

- Your DDC/MTU Power Generation product distributor provides one-source responsibility for the generating system and accessories.
- The generator set and its components are prototype-tested, factory-built, and production-tested.
- The 60 Hz generator set offers a UL 2200 listing.
- At 60 Hz, the generator set accepts rated load in one step.
- The generator set complies with ISO 8528-5, Class G3, requirements for transient performance.
- A one-year limited warranty covers all systems and components. Two-, five-, and ten-year extended warranties are also available. Alternator features:
 - 0 The brushless, rotating-field alternator has broadrange reconnectability.
 - The pilot-excited, permanent-magnet (PM) alternator provides superior short-circuit capability.
- Other features:
 - Controllers are available for all applications. See controller features inside.
 - 0 The generator set-to-skid mounting options are either integral vibration isolation or direct mounting with spring isolators.
 - Electronic engine controls manage the engine.

150°C Rise 130°C Rise 125°C Rise 105°C Rise Standby Rating Standby Rating Prime Rating Prime Rating kW/kVA Ph kW/kVA kW/kVA kW/kVA Alternator Voltage Hz Amps Amps Amps Amps 940/1175 860/1075 860/1075 220/380 3 60 1785 940/1175 1785 1633 1633 240/416 З 60 1180/1475 2047 1110/1388 1926 1090/1363 1891 1020/1275 1770 1804 з 60 1834 277/480 1250/1563 1879 1220/1525 1200/1500 1120/1400 1684 7M4046 220/380 3 50 1040/1300 1975 968/1210 1838 960/1200 1823 900/1125 1709 230/400 3 50 1064/1330 1920 1000/1250 1804 980/1225 1768 920/1150 1660 240/416 З 50 1020/1275 1770 968/1210 1679 944/1180 1638 880/1100 1527 220/380 3 60 1030/1288 1956 1030/1288 1956 940/1175 1785 940/1175 1785 240/416 3 60 1250/1563 2169 1180/1475 2047 1160/1450 2012 1100/1375 1908 277/480 з 60 1300/1625 1955 1300/1625 1955 1230/1538 1849 1200/1500 1804 7M4048 1064/1330 1008/1260 220/380 3 50 2021 1914 1000/1250 1899 944/1180 1793 230/400 З 50 1088/1360 1963 1024/1280 1848 1024/1280 1848 960/1200 1732 240/416 3 50 1040/1300 1804 968/1210 1679 968/1210 1679 904/1130 1568 220/380 1160/1450 1160/1450 1060/1325 1060/1325 З 60 2203 2203 2013 2013 60 240/416 3 1360/1700 2359 1360/1700 2359 1240/1550 1240/1550 2151 2151 277/480 З 60 1360/1700 2045 1360/1700 2045 1240/1550 1864 1240/1550 1864 7M4050 220/380 З 50 1224/1530 2325 1200/1500 2279 1112/1390 2112 1088/1360 2066 З 50 2208 230/400 1224/1530 1216/1520 2194 1112/1390 2006 1104/1380 1992 240/416 1224/1530 2123 1216/1520 2110 1112/1390 1929 1104/1380 1915 3 50 220/380 З 60 1370/1713 2602 1370/1713 2602 1250/1563 2374 1250/1563 2374 З 240/416 60 1370/1713 2377 1370/1713 2377 1250/1563 2169 1250/1563 2169 277/480 З 60 1370/1713 2060 1370/1713 2060 1250/1563 1879 1250/1563 1879 7M4052 220/380 З 50 1232/1540 2340 1224/1530 2325 1120/1400 2127 1112/1390 2112 230/400 з 50 1232/1540 2223 1224/1530 2208 1120/1400 2021 1112/1390 2006 240/416 З 50 1232/1540 2137 1224/1530 2123 1120/1400 1943 1112/1390 1929 7M4172 220/380 З 60 1300/1625 2469 1260/1575 2393 1180/1475 2241 1200/1500 2279 7M4174 220/380 2583 2583 2355 2355 3 60 1360/1700 1360/1700 1240/1550 1240/1550 7M4288 1624 1624 1479 1479 347/600 З 60 1350/1688 1350/1688 1230/1538 1230/1538 1350/1688 234 1350/1688 234 1230/1538 1230/1538 2400/4160 3 60 213 213 7M4366 1905/3300 3 50 1224/1530 268 1216/1520 266 1112/1390 243 1104/1380 241 2400/4160 3 60 1360/1700 236 1360/1700 1240/1550 215 1240/1550 215 236 7M4368 1905/3300 З 50 1232/1540 269 1224/1530 268 1120/1400 245 1112/1390 243

RATINGS: All three-phase units are rated at 0.8 power factor. Standby Ratings: Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. There is no overload capability for this rating. Ratings are in accordance with ISO-3046/1, BS 5514, AS 2789, and DIN 6271. *Prime Power Ratings:* Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO-3046/1, BS 5514, AS 2789, and DIN 6271. For limited running time and base load ratings, consult the factory. Obtain the technical information bulletin (TIS-101) on ratings guidelines for the complete ratings definitions. The generator set manufacturer reserves the right to change the design or specifications without notice and without any obligation or liability whatsoever. GENERAL GUIDELINES FOR DERATION: *ALTITUDE*: Derate 1% per 100 m (328 ft.) elevation above 400 m (1312 ft.). *TEMPERATURE*: Derate 2.0% per 5°C (9°F) temperature above 40°C (104°F). M5-228 (1350DSEB) 12/05h M5-228 (1350DSEB) 12/05h

Alternator Specifications

Specifications		Alternator		
Туре		4-Pole, Rotating-Field		
Exciter type		Brushless, Permanent-		
		Magnet		
Voltage regulate	or	Solid State, Volts/Hz		
Insulation:		NEMA MG1		
Material		Class H, Synthetic, Nonhygroscopic		
Temperature rise		130°C, 150°C Standby		
Bearing: quantity, type		1, Sealed		
Coupling		Flexible Disc		
Amortisseur windings		Full		
Rotor balancing		125% 60 Hz, 150% 50 Hz		
Voltage regulati	on, no-load to full-load			
(with <0.5% drift due to temp. variation)		3-phase sensing, ±0.25%		
One-step load acceptance at 60 Hz		100% of Rating		
Unbalanced load capability		100% of Rated		
		Standby Current		
Peak motor starting kVA:		(35% dip for voltages below)		
480 V, 380 V	7M4046 (4 bus bar)	3900(60 Hz), 2650 (50 Hz)		
480 V, 380 V	7M4048 (4 bus bar)	3700(60 Hz), 2150 (50 Hz)		
480 V, 380 V	7M4050 (4 bus bar)	4500(60 Hz), 2900 (50 Hz)		
480 V, 380 V	7M4052 (4 bus bar)	5500(60 Hz), 4000 (50 Hz)		
380 V	7M4172 (4 bus bar)	2600(60 Hz)		
380 V	7M4174 (4 bus bar)	4200(60 Hz)		

7M4288 (4 bus bar)

4160 V, 3300 V 7M4366 (6 lead)

4160 V, 3300 V 7M4368 (6 lead)

600 V

Engine

mm (in.)

5400(60 Hz)

3900(60 Hz), 2400 (50 Hz)

4900(60 Hz), 2900 (50 Hz)

- NEMA MG1, IEEE, and ANSI standards compliance for temperature rise and motor starting.
- Sustained short-circuit current of up to 300% of the rated current for up to 10 seconds.
- Sustained short-circuit current enabling downstream circuit breakers to trip without collapsing the alternator field.
- Self-ventilated and dripproof construction.
- Superior voltage waveform from two-thirds pitch windings and skewed stator.
- Digital solid-state, volts-per-hertz voltage regulator with ±0.25% no-load to full-load regulation.
- Brushless alternator with brushless pilot exciter for excellent load response.

Application Data

Engine Electrical

Engine Specifications	60 Hz	50 Hz	Engine Electrical System	60 Hz	50 Hz
Manufacturer	Detroit Di	esel/MTU	Battery charging alternator:		
Engine: model	12V4000	12V4000	Ground (negative/positive)	Nega	ative
	(1123-7M36)	(1123-7M35)	Volts (DC)	2	4
Engine: type	4-C	ycle, d. Intoropolod	Ampere rating	7	0
Cylinder arrangement	12		Starter motor rated voltage (DC)	Dua	l, 24
Displacement, L (cu. in.)	49 (2	2975)	Battery, recommended cold cranking		
Bore and stroke. mm (in.)	165 (6.5)	x 190 (7.5)	amps (CCA):		
Compression ratio	15.	5:1	Quantity, CCA rating each	Four,	1150
Piston speed, m/min. (ft./min.)	684 (2244)	570 (1870)	Battery voltage (DC)	1	2
Rated rpm	1800	1500	Fuel		
Max. power at rated rpm, kWm (BHP)	1490 (2000)	1330 (1784)	Fuel System	60 Hz	50 Hz
Cylinder head material	Cast Iron Forged Steel		Fuel supply line min ID mm (in)	20 (() 79)
Crankshaft material			Fuel return line min ID mm (in)	20 (0) 79)
Valve (exhaust) material	High All	oy Steel	Mox fuel flow Lpb (gpb)	1009 (200)	000 (262)
Governor: type, make/model	MDEC Elect	ronic Control	Max. ruer now, Lpn (gpn)	1096 (290)	990 (202)
Frequency regulation, no-load to full-load	Isochi	onous	Min./max. fuel pressure at engine	10 (3)/*	150(44)
Frequency regulation, steady state	±0.2	25%	Supply connection, ki a (in. rig)		loondary
Frequency	Fix	ced		Une, 3e	ionaly
Air cleaner type, all models	D	ry	Recommended fuel	#2 D	lesei
Exhaust			Lubrication		
Exhaust System	60 Hz	50 Hz	Lubricating System	60 Hz	50 Hz
Exhaust manifold type	D	ry	Туре	Full Pre	essure
Exhaust flow at rated kW, m ³ /min. (cfm)	342 (12077)	270 (9534)	Oil pan capacity, dipstick mark max.,	200	(011)
Exhaust temperature at rated kW, dry			L (qt.)	200 ((211)
exhaust, °C (°F)	450 (842)	485 (905)	Engine oli capacity, initiai filling, L (qt.)	260 ((275)
Maximum allowable back pressure,			Oil filter: quantity, type	4, Spi	in-On Os alast
кРа (in. Hg)	5.1	(1.5)	UII cooler	Water-0	Cooled
Exhaust outlet size at engine hookup,					

2 @ 254 (10)

Application Data

Cooling

Radiator System	60 Hz	50 Hz	
Ambient temp., standby rating, °C (°F)	40 (104)	50 (122)	
Ambient temp., prime rating, °C (°F)	45 (113)	50 (122)	
Engine water capacity, L (gal.)	212 (56)		
Radiator system capacity, including engine, L (gal.)	568 (150)	587 (155)	
Engine jacket water flow, Lpm (gpm)	1166 (308)	935 (247)	
Charge cooler water flow, Lpm (gpm)	647 (171)	485 (128)	
Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min.)	630 (35850)	590 (33553)	
Heat rejected to charge cooling water at rated kW, dry exhaust, kW (Btu/min.)	350 (19900)	250 (14217)	
Water pump type	Centrifugal		
Fan diameter, including blades, mm (in.)	1626 (64)	1829 (72)	
Fan, kWm (HP)	49 (66)	48 (64)	
Max. restriction of cooling air, intake and discharge side of radiator, kPa (in. $\rm H_2O)$	0.125 (0.5)		

High Ambient Radiator System	60 Hz	50 Hz
Ambient temperature, °C (°F)	50 (122)	—
Engine water capacity, L (gal.)	212 (56)	—
Radiator system capacity, including engine, L (gal.)	587 (155)	_
Engine jacket water flow, Lpm (gpm)	1166 (308)	—
Charge cooler water flow, Lpm (gpm)	647 (171)	
Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min.)	630 (35850)	_
Heat rejected to charge cooling water at rated kW, dry exhaust, kW (Btu/min.)	350 (19900)	_
Water pump type	Centrifugal	—
Fan diameter, including blades, mm (in.)	1829 (72)	—
Fan, kWm (HP)	60 (81)	—
Max. restriction of cooling air, intake and discharge side of radiator, kPa (in. $\rm H_2O)$	0.125 (0.5)	—

Remote Radiator System*	60 Hz	50 Hz
Connection sizes:	Class 150 A	NSI Flange
Water inlet, mm (in.)	191 (7.5) E	Bolt Circle
Water outlet, mm (in.)	191 (7.5) E	Bolt Circle
Intercooler inlet/outlet, mm (in.)	152 (6.0) Bolt Circle	
Static head allowable		
above engine, kPa (ft, H ₂ O)	149	(50)

* Contact your local distributor for cooling system options and specifications based on your specific requirements.

Operation Requirements

Air Requirements	60 Hz	50 Hz
Radiator-cooled cooling air, m ³ /min. (scfm)†	1597 (56400)	1716 (60600)
High ambient radiator-cooled cooling air, $m^3/min.~(scfm) \ensuremath{\dagger}$	1948 (68800)	_
Cooling air required for generator set when equipped with CWC or remote radiator, based on 14° C (25° F) rise, m ³ /min. (scfm)†	552 (19500)	504 (17800)
Combustion air, m ³ /min. (cfm)	132 (4662)	108 (3814)
Heat rejected to ambient air:		
Engine, kW (Btu/min.)	75 (4250)	
Alternator, kW (Btu/min.)	80 (4540)	66 (3753)
\ddagger Air density = 1.20 kg/m ³ (0.075 lbm/ft ³)		

Fuel Consumption	60 Hz	50 Hz	
Diesel, Lph (gph) at % load	Standby Rating		
100%	348.5 (92.1) 306.4 (80.9)	
75%	269.3 (71.1) 229.8 (60.7)	
50%	189.1 (50.0) 157.9 (41.7)	
25%	108.1 (28.6) 87.2 (23.0)	
Diesel, Lph (gph) at % load	Prime Rating		
100%	304.9 (80.5) 298.8 (78.9)	
75%	235.6 (62.2) 225.2 (59.5)	
50%	166.3 (43.9) 140.9 (37.2)	
25%	98.2 (25.9) 77.5 (20.5)	

Controllers



Digital 550 Controller

Audiovisual annunciation with NFPA 110 Level 1 capability. Programmable microprocessor logic and digital display features. Safeguard circuit protection standard.

12- or 24-volt engine electrical system capability.

Remote start, remote annunciation, and remote communication options. Refer to M6-46 for additional controller features and accessories.



Microprocessor-Plus, 16-Light Controller

Audiovisual annunciation with NFPA 110 Level 1 capability. Microprocessor logic, AC meters, and engine gauge features. 12- or 24-volt engine electrical system capability. Remote start, prime power, and remote annunciation options. Refer to M6-30 for additional controller features and accessories.

DETROIT DIESEL



Additional Standard Features

- Alternator Protection (standard with 550 controller)
- Oil Drain Extension
- Operation and Installation Literature

Available Accessories

Enclosed Unit

- Sound Enclosure and Subbase Fuel Tank Packages
- U Weather Enclosure and Subbase Fuel Tank Packages

Open Unit

- Exhaust Silencer, Critical 60 Hz Kit: PA-361617-SD 50 Hz Kit: PA-361618-SD
- Exhaust Silencer, Hospital 60 Hz Kit: PA-361626-SD 50 Hz Kit: -SDPA-361620-SD
- Flexible Exhaust Connector, Stainless Steel

Cooling System

- Block Heater; Recommended for Ambient Temperatures Below 10°C (50°F)
- City Water Cooling
- High Ambient Radiator
- Remote Radiator Cooling

Fuel System

- Flexible Fuel Lines
- G Fuel/Water Separator
- Subbase Fuel Tank with Day Tank

Electrical System

- Battery
- Battery Charger, Equalize/Float Type
- Battery Charger, Equalize/Float Type Installed
- Battery Heater
- Battery Rack and Cables

Engine and Alternator

- Air Cleaner, Heavy Duty
- Air Cleaner Restriction Indicator
- Bus Bar Kits (standard on 7M alternators, 380-600 volt only)
- Closed Crankcase Breather
- Direct Mounting
- Engine Fluids (oil and coolant) Added
- Alternator Strip Heater
- Integral Vibration Isolation Mounting
- Line Circuit Breaker (NEMA type 1 enclosure)
- Line Circuit Breaker with Shunt Trip (NEMA type 1 enclosure)
- Optional Alternators
- Rated Power Factor Testing
- Safeguard Breaker (not available with 550 controller)
- Spring Isolators

Paralleling System

- Load-Sharing Module
- Uvoltage Adjust Control

Maintenance and Literature

- General Maintenance Literature Kit
- Maintenance Kit
- NFPA 110 Literature
- Overhaul Literature Kit
- Production Literature Kit

Controller

- Common Failure Relay Kit
- Communication Products and PC Software (550 controller only)
- Customer Connection Kit
- Dry Contact Kit (isolated alarm)
- Prime Power Switch (550 controller only)
- Remote Annunciator Panel
- Remote Audiovisual Alarm Panel
- Remote Emergency Stop Kit
- Remote Mounting Cable
- Run Relay Kit

Miscellaneous Accessories

Dimensions and Weights

Overall Size, L x W x H, max., mm (in.):

Weight (radiator model), wet, max., kg (lb.):

5516 x 2232 x 2426 (217.17 x 87.88 x 95.52) 13608 (30000)



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

DISTRIBUTED BY:

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