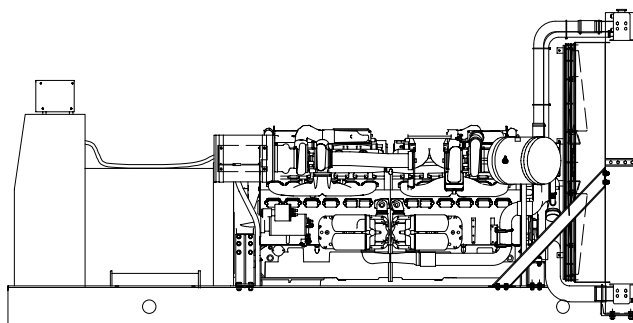


Standard Features

- Spectrum® product distributors provide one-source responsibility for the generating system and accessories.
- All generator sets and components are prototype tested, factory built, and production tested.
- Generator set provides one-step load acceptance per NFPA 110.
- A one-year limited warranty covers all systems and components. Two-, five-, and ten-year extended warranties are available.
- Generator features:
 - Brushless, rotating-field generator has four bus bar connections.
 - A permanent magnet pilot-excited generator (PMG) provides superior short-circuit capability.
- Other features:
 - Controllers are available to meet all applications. See controller features inside.
 - Low coolant level shutdown protects generator set from overheating.
 - Electronic, isochronous governor provides precise frequency regulation.

Ratings Range

		60 Hz	50 Hz
Standby:	kW	800-1000	820-880
	kVA	1038-1250	1055-1100
Prime:	kW	755-910	744-800
	kVA	944-1138	930-1000



Generator Ratings

Generator	Voltage	PH	Hz	130°C Rise Standby Rating kW/kVA	105°C Rise Prime Rating kW/kVA	150°C Rise Standby Rating kW/kVA	125°C Rise Prime Rating kW/kVA
5M4044	220/380	3	60	830/1038	755/944	830/1038	755/944
	240/416	3	60	975/1219	885/1106	1000/1250	910/1138
	277/480	3	60	1000/1250	910/1138	1000/1250	910/1138
	220/380	3	50	844/1055	768/960	880/1100	800/1000
	240/416	3	50	820/1025	744/930	844/1055	768/960
	230/400	3	50	848/1060	768/960	880/1100	800/1000
7M4046	220/380	3	60	945/1181	860/1075	945/1181	860/1075
	240/416	3	60	1000/1250	910/1138	1000/1250	910/1138
	277/480	3	60	1000/1250	910/1138	1000/1250	910/1138
	220/380	3	50	880/1100	800/1000	880/1100	800/1000
	240/416	3	50	880/1100	800/1000	880/1100	800/1000
	230/400	3	50	880/1100	800/1000	880/1100	800/1000
7M4170	220/380	3	60	1000/1250	910/1138	1000/1250	910/1138
7M4282	347/600	3	60	1000/1250	910/1138	1000/1250	910/1138
7M4284	347/600	3	60	1000/1250	910/1138	1000/1250	910/1138

RATINGS: Standby ratings are continuous for the duration of any power outage. No overload capacity is specified at this rating. Prime ratings are continuous per BS 5514, DIN 6271, ISO-3046, and IEC 34-1 with 10% overload capacity one hour in twelve hours. All single-phase units are rated at 1.0 power factor. All 3-phase units are rated at 0.8 power factor. Contact the factory for ratings of city water-cooled and remote radiator models. Larger alternators may be used to meet special application requirements. Availability is subject to change without notice. The manufacturer of Spectrum products reserves the right to change the design or specifications without notice and without any obligation or liability whatsoever. Contact your local Spectrum products distributor for availability. DERATION: Maximum altitude before generator set deration, ft. (m): 3300 (1006). Altitude deration factor, % per 1000 ft. (305 m): 1.5. Maximum intake air temperature before generator set deration, °F (°C): 105 (40). Temperature deration factor, % per 10°F (5.5°C): 2.75.

Alternator Specifications

Type	4-Pole, Rotating Field
Exciter type	Brushless Permanent Magnet Pilot Exciter
Voltage regulator	Solid State, Volts/Hz
Insulation: NEMA MG1-1.66	
Material	Class H, Synthetic, Nonhygroscopic
Temperature rise	130°C, 150°C Standby
Bearing, number, type	1, Sealed
Coupling	Flexible Disc
Amortisseur windings	Full
Rotor balancing	125% (60Hz) 150% (50Hz)
Voltage regulation, no load to full load (with <0.5% drift due to temp. variation) . . .	±0.25%
One-step load acceptance per NFPA 110 .	100% of Rating
Peak motor starting kVA:	(35% dip for voltages shown below)
480 V, 416 V	5M4044 (4 bus bar) . . 3900 (60Hz), 3000 (50Hz)
480 V, 416 V	7M4046 (4 bus bar) . . 3900 (60Hz), 3000 (50Hz)
380 V	7M4170 (4 bus bar) . . 2500 (60Hz)
600 V	7M4282 (4 bus bar) . . 1850 (60Hz)
600 V	7M4284 (4 bus bar) . . 3200 (60Hz)

- Compliance with NEMA, IEEE, and ANSI standards for temperature rise.
- Sustained short-circuit current up to 300% of rated current for up to 10 seconds.
- Sustained short-circuit capability enabling downstream circuit breakers to trip without collapsing the generator field.
- Self-ventilation and drip-proof construction.
- Superior voltage waveform from two-thirds pitch windings and skewed stator.
- A digital solid-state, volts-per-hertz voltage regulator with ±0.25% no-load to full-load regulation.
- A brushless alternator with brushless pilot exciter for excellent load response.

Application Data

Engine

Engine Specifications	60 Hz	50 Hz
Manufacturer	Detroit Diesel	
Engine, Model, Type	24V-71TA, (7243-7406) 2-Cycle, Quad Turbocharged	
Cylinder arrangement	24-V	
Displacement, cu. in. (L)	1702 (27.9)	
Bore and stroke, in. (mm)	4.25 (108) x 5.00 (127)	
Compression ratio	17.0:1	
Piston speed, ft/min. (m/sec.)	1500 (7.6)	1250 (6.3)
Main bearings: number, type	8, Precision Half Shells	
Rated rpm	1800	1500
Max. power at rated rpm, hp (kW)	1550 (1156)	1320 (985)
Cylinder head material	Cast Iron	
Crankshaft material	Forged Steel	
Valve (exhaust) material	Cast Iron	
Governor, type, make/model	Electronic, Barber-Colman, Dyna 8200	
Frequency regulation, no load to full load	Isochronous	
Frequency regulation, steady state	±0.25%	
Air cleaner type, all models	Dry	

Exhaust

Exhaust System	60 Hz	50 Hz
Exhaust flow, cfm (m³/min.)	10120 (287)	8950 (253)
Exhaust temperature, dry exhaust, °F (°C)	765 (407)	750 (399)
Maximum allowable back pressure, in. Hg (kPa)	2.0 (6.8)	1.5 (5.0)
Exhaust outlet size at hookup, in. (mm)	Dual, 10 (254)	

Engine Electrical

Engine Electrical System	60 Hz	50 Hz
Battery charging alternator:		
Ground (negative/positive)	Negative	
Volts (DC)	24	
Ampere rating	65	
Starter motor rated voltage (DC)	Dual, 24	
Recommended battery cold cranking amps (CCA) rating	950 above 32°F 1250 below 32°F	
Quantity of batteries	4 above 32°F, 8 below 32°F	
Battery voltage (DC)	12	
Rolling current at 32°F	-	

Fuel

Fuel System	60 Hz	50 Hz
Fuel supply line, min. ID, in. (mm)	0.63 (16)	
Fuel return line, min. ID, in. (mm)	0.38 (10)	
Max. lift, engine-driven fuel pump, ft. (m)	6.8 (2.1)	
Max. fuel flow, gph (Lph)	280 (1059)	234 (885)
Fuel prime pump	N/A	
Fuel filter	2, Primary/Secondary	
Recommended fuel	#2 Diesel	

Lubrication

Lubricating System	60 Hz	50 Hz
Type	Full Pressure	
Oil pan capacity, qts. (L)	110 (104)	
Oil pan capacity with filter, qts. (L)	114 (108)	
Oil filter, quantity, type	4, Cartridge	
Oil cooler	Water-Cooled	

Application Data

Cooling (Standard Radiator)

Cooling System	60 Hz	50 Hz
Ambient temperature °F (°C)	105 (41)	
Engine jacket water capacity, gal. (L)	30 (113)	
Radiator system capacity, including engine, gal. (L)	66.5 (252)	
Engine jacket water flow, gpm (Lpm)	380 (1438)	310 (1173)
Heat rejected to cooling water, dry exhaust Btu/min.	43925	39820
Water pump type	Centrifugal	
Fan diameter, including blades, in. (mm)	64 (1625)	
Fan hp (kW)	58 (43)	34 (25)
Max. restriction of cooling air, intake and discharge side of rad., in. H ₂ O (in. Hg)	0.5 (0.037)	

Cooling (Optional Systems)

Remote Radiator System	60 Hz	50 Hz
Exhaust manifold type	Dry	
Connection Sizes:		
Water inlet, in. (mm)	4.0 (102) ID Hose	
Water outlet, in. (mm)	(2) 3.0 (76) ID Hose	
Remote radiator:		
Make	Modine	
Model	M40VR20	
Mounting	Vertical	
Discharge	Horizontal	
Fan motor: phase, hp (kW) [†]	3, 20 (14.9)	
Radiator capacity, gal. (L)	42 (159)	
Static head allowable above engine, ft. (m)	50 (15.25)	
Tank top (inlet), in.	5.0 NPT	
Bottom tank (outlet), in.	5.0 NPT	
Dry weight, lb. (kg)	2800 (1270)	

[†] Motors with multiple voltages are available.

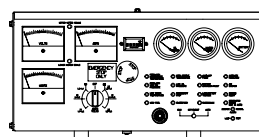
City Water Cooling System	60 Hz	50 Hz
Exhaust manifold type	Dry	
System capacity, gal. (L)	40 (151) approx.	
City water consumption,* gpm (Lpm) at 50°F (10°C)	95 (360)	82 (310)
Connection sizes:		
Water inlet, in.	2.5 NPT	
Water outlet, in.	2.5 NPT	

* Data based on (2) Modine C-820-122 heat exchangers with thermostatically controlled water-saver valve, electric solenoid valve, and surge tank.

Operation Requirements

Air Requirements	60 Hz	50 Hz
Radiator-cooled cooling air, cfm (m ³ /min.)	45500 (1289)	40500 (1147)
Cooling air required for gen. set when equipped with CWC or remote radiator, based on 25°F (14°C) rise and ambient temp. of 85°F (29°C), cfm (m ³ /min.)	21200 (600)	19000 (538)
Combustion air, cfm (m ³ /min.)	4350 (123)	3900 (110)
Heat rejected to ambient air:		
Engine BTU/min.	6250	5550
Generator BTU/min.	3000	2750
Fuel Consumption	60 Hz	50 Hz
Diesel, gph (Lph) at % load		
100%	74.7 (282.8)	66.0 (249.8)
75%	56.4 (213.5)	49.5 (187.4)
50%	40.5 (153.3)	35.8 (135.5)
25%	25.7 (97.3)	21.9 (82.9)

Controllers



Standard Controller

Microprocessor-Plus, 16-Light Controller

Audio/visual annunciation with NFPA-110, Level 1 capability
Microprocessor logic with AC meters and engine gauges
Compatible with 12-volt and 24-volt engine electrical systems
Remote start, prime power, and remote annunciation capability

Optional Controllers

Digital Controller

Audio/visual annunciation with NFPA-110, Level 1 capability
Programmable microprocessor logic with digital display
Compatible with 12-volt and 24-volt engine electrical systems
Remote start, prime power, remote annunciation, and remote communication capability

Microprocessor-Plus, 7-Light Controller

Audio/visual annunciation with NFPA-110, Level 2 capability
Microprocessor logic with AC meters and engine gauges
Compatible with 12-volt and 24-volt engine electrical systems
Remote start, prime power, and remote annunciation capability

Oversized Meterbox Controllers

Provides additional space for optional engine oil temperature gauge, tachometer, and wattmeter
Available with 16-light or 7-light annunciation and microprocessor logic
Same features as Microprocessor-Plus controller
Compatible with 12-volt and 24-volt engine electrical systems

Engine Gauge Box Controller for Paralleling Switchgear

Interfaces between generator set and switchgear for paralleling switchgear applications
Engine gauges with emergency stop switch
Compatible with 24-volt engine electrical systems only

Manual Paralleling Controller

Provides capability to parallel two or more generator sets without large switchgear-style cubicles
Uses 16-light annunciation and microprocessor logic
Same features as Microprocessor-Plus controller
Compatible with 12-volt and 24-volt engine electrical systems

NOTE: See the respective controller spec sheet for additional controller features and accessories.

Accessories

Open Unit

- ☐ Exhaust Silencer, Critical or Residential
- ☐ Flexible Exhaust Connector, Stainless Steel

Cooling System

- ☐ Block Heater
- ☐ City Water Cooling
- ☐ Radiator Duct Flange
- ☐ Remote Radiator Cooling

Fuel System

- ☐ Day Tanks
- ☐ Flexible Fuel Lines
- ☐ Fuel Pressure Gauge

Electrical System

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

Engine and Generator

- ☐ Air Cleaner, Heavy Duty
- ☐ Air Cleaner Restriction Indicator
- ☐ Bus Bar Kits (standard on 7M generators, 380-600 volt only)
- ☐ Generator Strip Heater
- ☐ Line Circuit Breaker
- ☐ Line Circuit Breaker with Shunt Trip
- ☐ NFPA 110 Literature
- ☐ Optional Generators
- ☐ Rated Power Factor Testing
- ☐ Safeguard Breaker
- ☐ Spring Isolators

Paralleling System

- ☐ Load-Sharing Module
- ☐ Reactive Droop Compensator
- ☐ Remote Speed Adjust Potentiometer/Electronic Governor
- ☐ Voltage Adjust Potentiometer
- ☐ Voltage Regulator Relocation Kit

Maintenance

- ☐ General Maintenance Literature Kit
- ☐ Overhaul Literature Kit

Controller (Standard Controller)

- ☐ Common Failure Relay Kit
- ☐ Customer Connection Kit
- ☐ Dry Contact Kit (Isolated Alarm)
- ☐ Extension Wiring Harness for Remote Mounting of Controller
- ☐ FASTCHECK® Diagnostic Fault Detector
- ☐ Prealarm Sender Kit
- ☐ Remote Annunciator Panel
- ☐ Remote Audio/Visual Alarm Panel
- ☐ Remote Emergency Stop Kit
- ☐ Run Relay Kit
- ☐ Tachometer Kit/Oversize Meterbox
- ☐ Wattmeter Kit/Oversize Meterbox

Miscellaneous Accessories

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
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- ☐ _____
- ☐ _____

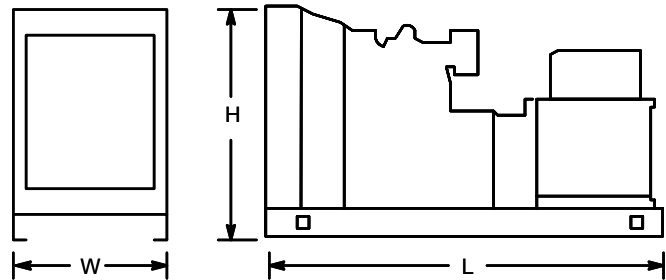
WEIGHTS AND DIMENSIONS

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

195.94 x 91.57 x 92.58
(4977 x 2325 x 2352)

Weight (Radiator Model), wet lb. (kg):

16915 (7673)



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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