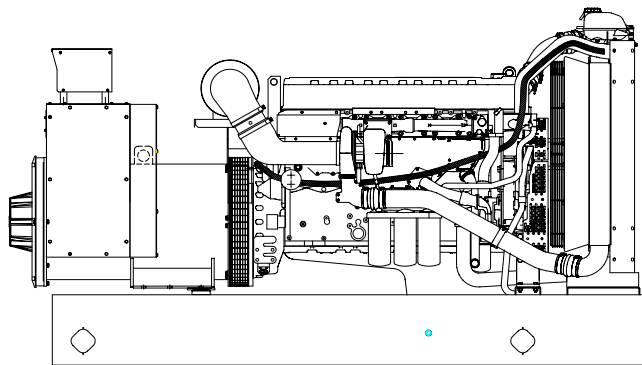




### Ratings Range

		<b>50 Hz</b>
<b>Standby:</b>	<b>kW</b>	324-328
	<b>kVA</b>	405-410
<b>Prime:</b>	<b>kW</b>	296-300
	<b>kVA</b>	370-375



### Standard Features

- Kohler Co. 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 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.
- Generator features:
  - Brushless alternator with brushless exciter, PMG and digital voltage regulation.
- Other features:
  - Controllers are available for all applications. See controller features inside.
  - The low coolant level shutdown prevents overheating. (Standard on radiator models only).
  - Integral vibration isolation eliminates the need for under-unit vibration spring isolators.
  - An electronic, isochronous governor delivers precise frequency regulation.
  - Electronic engine controls and a generator microprocessor controller combine to deliver one of the most advanced control systems in today's generator market.

### Generator Ratings

Alternator	Voltage	Ph	Hz	150°C Rise	125°C Rise
				Standby Rating kW/kVA	Prime Rating kW/kVA
4P6220	220/380	3	50	328/410	300/375
	230/400	3	50	328/410	300/375
	240/416	3	50	324/405	296/370

Ratings: All ratings are in accordance with ISO 3046, ISO 8528, BS5514, AS 2789, DIN 6271 where applicable. STANDBY RATING: Applies to installations served by a reliable utility source, and to varying loads for the duration of the utility power interruption. There is no overload capability for the rating. PRIME POWER RATING: Applies to installations where utility power is unavailable or unreliable. The prime power rating is applicable to variable loads with an unlimited number of operating hours per year. The average power output shall not exceed 70% of the prime power rating. Loads of less than 30% shall be counted as 30%. ALTITUDE DERATION: Derate 0.8% per 100m (328ft) elevation above 1000m (3280ft) up to an elevation of 3000m (9842ft). TEMPERATURE DERATION: 1.5% per 5°C temperature above 40°C. Fuel consumption is calculated at specific gravity of 0.85 (±5%). Cooling air density taken as 1.20kg/m³.

# Alternator Specifications

Specifications	Generator
Type	4-Pole, Rotating-Field
Exciter type	Brushless, Permanent-Magnet
Leads: quantity, type	12, Reconnectable
Voltage regulator	Solid State, Volts/Hz
Insulation:	NEMA MG1- 22.40
Material . . . . .	Class H
Temperature rise . . . . .	125°C Prime, 150°C Standby
Bearing: quantity, type	1, Sealed
Coupling	Flexible Disc
Amortisseur windings	Full
Voltage regulation, no-load to full-load. . .	3-Phase Sensing, ±0.25%

## Common Features

- Superior voltage waveform from a two-thirds pitch stator and skewed rotor.
- Brushless alternator with brushless pilot exciter for excellent load response.
- 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 generator field.
- Self-ventilated and dripproof construction.
- Digital solid-state, volts-per-hertz voltage regulator with ±0.25% no-load to full-load regulation.
- Unirotor construction method facilitate parallel operation and distorting loads.
- Compliance to NEMA MG1-22, BS-5000, CSA C22.2 and IEC 34-1 requirements.

# Application Data

## Engine

Engine Specifications	50 Hz
Engine model	D350 12.1A65
Engine type	4-Cycle, Turbocharged, Charge Air Cooled
Cylinder arrangement	6, Inline
Displacement, L (cu. in.)	12.13 (740)
Bore and stroke, mm (in.)	131 x 150 (5.16 X 5.91)
Compression ratio	17.5 : 1
Piston speed, m/min. (ft./min.)	450 (1476)
Main bearings: quantity, type	7, Precision Half-Shell
Rated rpm	1500
Max. power at rated rpm, kWm (BHP)	363 (486)
Cylinder head material	Cast Iron
Piston: type, material	Swirl Chamber, Graphite-Coated Aluminum
Crankshaft material	Forged Steel
Valve material	Nimonic
Governor: type, make/model	EDC III
Frequency regulation, no-load to full-load	Isochronous
Frequency regulation, steady state	±0.25%
Frequency	Field-Convertible
Air cleaner type, all models	Dry

## Exhaust

Exhaust System	50 Hz
Exhaust flow at rated kW, m3/min. (cfm)	62.91 (2220)
Exhaust temperature at rated kW, dry exhaust, °C (°F)	504 (940)
Maximum allowable back pressure, kPa (in. Hg)	10.2 (3.0)
Engine exhaust outlet size, mm (in.)	See ADV Drawing

## Engine Electrical

Engine Electrical System	50 Hz
Battery charging alternator:	
Ground (negative/positive) . . . . .	Negative
Volts (DC) . . . . .	24
Ampere rating . . . . .	60
Starter motor rated voltage (DC)	24
Battery, recommended cold cranking amps (CCA):	
Qty., CCA rating . . . . .	2, 950
Battery voltage (DC)	12

## Fuel

Fuel System	50 Hz
Fuel supply line, min. ID, mm (in.)	10 (0.39)
Fuel return line, min. ID, mm (in.)	10 (0.39)
Max. lift, engine-driven fuel pump, m (ft.)	2.0 (6.6)
Max. fuel flow, Lph (gph)	500 (132.1)
Fuel prime pump	Manual
Fuel filter type	2, Primary, 30 Microns/ Secondary w/Water Separator, 5 Microns
Recommended fuel	#2 Diesel

## Lubrication

Lubricating System	50 Hz
Type	Full Pressure
Oil pan capacity, L (qt.)	31 (33)
Oil pan capacity with filter, L (qt.)	35 (37)
Oil filter: quantity, type	3, Cartridge
Oil cooler	Water-Cooled

# Application Data

## Cooling

Radiator System	50 Hz
Ambient temperature, °C (°F) *	50 (122)
Engine jacket water capacity, L (gal.)	20 (5.28)
Radiator system capacity, including engine, L (gal.)	44.0 (11.62)
Engine jacket water flow, Lpm (gpm)	288 (76)
Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min.)	132 (7500)
Heat rejected to charge air cooler at rated kW, dry exhaust, kW (Btu/min.)	73 (4140)
Water pump type	Centrifugal
Fan diameter, including blades, mm (in.)	890 (35)
Fan, kWm (HP)	9 (12)
Max. restriction of cooling air, intake and discharge side of radiator, kPa (in. H <sub>2</sub> O)	0.125 (0.5)

\* Weather and sound enclosures with internal silencer reduce ambient temperature capability by 5°C (9°F)

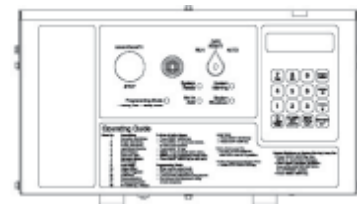
## Operation Requirements

Air Requirements	50 Hz
Radiator-cooled cooling air, m <sup>3</sup> /min. (scfm)*	385 (13600)
Combustion air, m <sup>3</sup> /min. (cfm)	25 (880)
Heat rejected to ambient air:	
Engine, kW(Btu/min.) . . . . .	72.8 (4140)
Generator, kW (Btu/min.) . . . . .	24.8 (1410)
* Air density = 1.20 kg/m <sup>3</sup> (0.075 lbm/ft <sup>3</sup> )	

Fuel Consumption	50 Hz
Diesel, Lph (gph) at % load	Standby Rating
100%	84.7 (22.4)
75%	62.7 (16.6)
50%	42.8 (11.3)
25%	24.3 (6.4)

Diesel, Lph (gph) at % load	Prime Rating
100%	76.1 (20.1)
75%	56.8 (15.0)
50%	39.4 (10.4)
25%	22.4 (5.9)

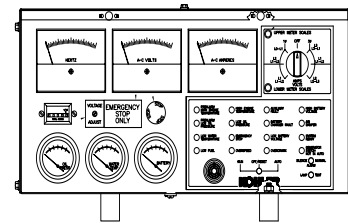
# Controllers



## Available Controllers

### Decision-Maker™ 550 Controller

Audiovisual annunciation with NFPA 110 Level 1 capability. Programmable microprocessor logic and digital display features. Generator safeguard circuit protection. 12- or 24-volt engine electrical system capability. Remote start, remote annunciation, and remote communication options. Refer to G6-46 for additional controller features and accessories.



### Decision-Maker™ 3+, 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 G6-30 for additional controller features and accessories.

## Standard Features and Accessories

### Standard Features

- Battery Rack and Cables
- Electronic, Isochronous Governor
- Oil Drain Extension
- Operation and Installation Literature
- Alternator Protection (standard with Decision-Maker™ 550)

### Accessories

#### Enclosed Unit

- Sound Enclosure with Internal Silencer
- Weather Enclosure with Internal Silencer
- Weather Housing (with skid end caps and roof-mounted silencer)
- Open Unit
- Exhaust Silencer, Hospital
- Exhaust Silencer, Critical
- Flexible Exhaust Connector, Stainless Steel

#### Cooling System

- Block Heater; recommended for ambient temperatures below 4°C (40°F)
- Radiator Duct Flange

#### Fuel System

- Flexible Fuel Lines
- Fuel Pressure Gauge
- Fuel/Water Separator with Primary Filter
- Subbase Fuel Tanks
- Subbase Fuel Tank with Day Tank

#### Electrical System

- Battery
- Battery Charger, Equalize/Float Type
- Battery Heater

#### Engine and Generator

- Air Cleaner, Heavy Duty
- Air Cleaner Restriction Indicator
- Bus Bar Kits
- Crankcase Emission Canister
- CSA Certification
- Generator Strip Heater
- Line Circuit Breaker (NEMA1 enclosure)
- Line Circuit Breaker with Shunt Trip (NEMA1 enclosure)
- Optional Generators
- Rated Power Factor Testing
- Rodent Guards
- Safeguard Breaker (not available with Decision-Maker™ 550)
- Skid End Caps
- Voltage Regulation, +0.25%
- Voltage Regulator Sensing, Three-Phase

#### Paralleling System

- Load-Sharing Module
- Reactive Droop Compensator
- Remote Speed Adjusting Control
- Voltage Regulator Relocation Kit

#### Maintenance and Literature

- General Maintenance Literature Kit
- Maintenance Kit (includes air, oil, and fuel filters)
- NFPA 110 Literature
- Overhaul Literature Kit
- Production Literature Kit

#### Controller

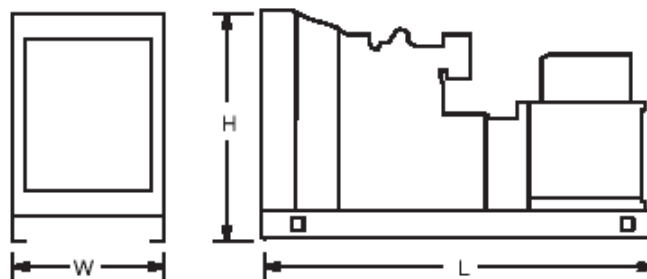
- Common Failure Relay Kit
- Communications Products and PC Software (Decision-Maker™ 550 controller only)
- Customer Connection Kit
- Dry Contact Kit (isolated alarm)
- Engine Prealarm Sender Kit
- Prime Power Switch Kit (Decision-Maker 550™ controller only)
- Remote Annunciator Panel
- Remote Audiovisual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

#### Miscellaneous Accessories

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

### Dimensions and Weights

Overall Size, L x W x H, mm (in.): 3110 x 1250 x 1776  
 (122.4 x 49.2 x 69.9)  
 Weight (radiator model), wet, kg (lb.): 2950 (6490)



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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