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# DIESEL GENERATOR SET

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Image shown may not reflect actual package

## STANDBY 5720 ekW 7150 kVA 50 Hz 1000 rpm

Caterpillar is leading the power generation Market place with Power Solutions engineered to deliver unmatched flexibility, expandability, reliability, and cost-effectiveness.

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### FEATURES

#### FUEL/EMISSIONS STRATEGY

- Low BSFC

#### FULL RANGE OF ATTACHMENTS

- Wide range of bolt-on system expansion attachments, factory designed and tested
- Flexible packaging options for easy and cost effective installation

#### SINGLE-SOURCE SUPPLIER

- Fully prototype tested with certified torsional vibration analysis available

#### WORLDWIDE PRODUCT SUPPORT

- Cat® dealers provide extensive post sale support including maintenance and repair agreements
- Cat dealers have over 1,800 dealer branch stores operating in 200 countries.
- The Cat S•O•S<sup>SM</sup> program effectively detects internal engine component condition, even the

presence of unwanted fluids and combustion by products.

#### 3616 DIESEL ENGINE

- Reliable, rugged, durable design
- Four-stroke diesel engine combines consistent performance and excellent fuel economy with minimum weight

#### CAT® GENERATOR

- Matched to the performance and output characteristics of Cat engines

#### CAT GENERATOR SET MONITORING SYSTEM (GSM)

- Simple user friendly interface and navigation • Provides protection, monitoring, and control of the diesel generator set.
- Redundant shutdown protection

# STANDBY 5720 eKW 7150 kVA

50 Hz 1000 rpm



## FACTORY INSTALLED STANDARD & OPTIONAL EQUIPMENT

| System    | Standard                                                                                                                                                                                                                                                                                                                                                                                                                       | Optional                                                                                                                                                                                                                                      |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Air Inlet | <ul style="list-style-type: none"><li>• Aftercooler, fresh water, corrosion resistant coated (air side)</li><li>• Air inlet shutoff</li><li>• Air Cleaner</li><li>• Breather, crankcase, top-mounted</li><li>• Turbocharger, engine oil lubricated</li></ul>                                                                                                                                                                   | <ul style="list-style-type: none"><li>[ ] Soot Filter</li><li>[ ] Air cleaner Louver Assembly</li><li>[ ] Vertical Support Bracket</li><li>[ ] Heavy Duty Air Cleaner</li><li>[ ] Air Inlet Adapter</li><li>[ ] Boost Control Valve</li></ul> |
| Cooling   | <ul style="list-style-type: none"><li>• Engine coolant water drains</li><li>• Front Mounted Turbos</li><li>• Three-bundle oil cooler.</li><li>• Water Temperature Regulator</li><li>• Jacket Water Thermostats</li></ul>                                                                                                                                                                                                       | <ul style="list-style-type: none"><li>[ ] Heat Exchanger for single circuit</li><li>[ ] Heating Aids</li><li>[ ] Cooling System Aids</li><li>[ ] Auxiliary Water Pump</li><li>[ ] Expansion Tank</li></ul>                                    |
| Exhaust   | <ul style="list-style-type: none"><li>• 457 mm (18 in) Cat bolt pattern</li><li>• Dry, gas tight, exhaust manifold</li><li>• Includes adapter, flexible exhaust fitting</li></ul>                                                                                                                                                                                                                                              | <ul style="list-style-type: none"><li>[ ] Flexible Exhaust Fittings</li><li>[ ] Weld Flange and Related Hardware</li></ul>                                                                                                                    |
| Fuel      | <ul style="list-style-type: none"><li>• Simplex or Duplex</li></ul>                                                                                                                                                                                                                                                                                                                                                            | <ul style="list-style-type: none"><li>[ ] Fuel Priming Pump</li><li>[ ] Duplex Primary Fuel Strainer</li><li>[ ] Fuel System Connections</li></ul>                                                                                            |
| Generator | <ul style="list-style-type: none"><li>• Custom Generator Per Generator Data Sheet Completed by Dealer</li></ul>                                                                                                                                                                                                                                                                                                                | <ul style="list-style-type: none"><li>[ ] 3 Phase, six leads, WYE</li><li>[ ] Class F insulation</li><li>[ ] Bus bar connections</li><li>[ ] Winding temperature detectors</li><li>[ ] Anti-condensation space heaters</li></ul>              |
| Governor  | <ul style="list-style-type: none"><li>• UG Actuator</li></ul>                                                                                                                                                                                                                                                                                                                                                                  | <ul style="list-style-type: none"><li>[ ] Electronic/ Actuators</li><li>[ ] Digital Programmers</li><li>[ ] Battery Backup/Power Supply</li><li>[ ] 230 UA</li><li>[ ] 723 Plus</li><li>[ ] EGB Actuator</li></ul>                            |
| Lube      | <ul style="list-style-type: none"><li>• Centrifugal oil filters with single shutoff</li><li>• Service side engine mounted on cylinder block inspection covers</li><li>• Wet oil sump. Includes engine-driven main lubrication pump, installed oil lines, engine-driven oil pump and oil pan.</li><li>• Oil filler and dipstick</li><li>• Valve, oil pressure regulating</li><li>• Valves, crankcase explosion relief</li></ul> | <ul style="list-style-type: none"><li>[ ] Oil Pan Drain valve</li><li>[ ] Lube ANSI adapter (Emergency Connection)</li></ul>                                                                                                                  |
| Mounting  | <ul style="list-style-type: none"><li>• Damper, torsional vibration</li><li>• Engine and Generator Mounting</li></ul>                                                                                                                                                                                                                                                                                                          | <ul style="list-style-type: none"><li>[ ] Isolator</li><li>[ ] Spring type vibration isolator</li><li>[ ] Vertically Restrained</li><li>[ ] Non-vertically Restrained</li></ul>                                                               |

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50 Hz 1000 rpm



|                     |                                                                                                                                                                                                                            |                                                                                                                                                                                           |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Starting / Charging | <ul style="list-style-type: none"><li>• Vane type air starter</li><li>• Two motors, engine mounted at rear, on left side</li><li>• Includes air silencer</li><li>• Line Group for Single Point Custom Connection</li></ul> | <ul style="list-style-type: none"><li>[ ] Pressure Reducing Valve</li><li>[ ] Compressed Air Flex Hose</li><li>[ ] Turbine Type Air Starters</li><li>[ ] Redundant Air Starters</li></ul> |
| General             | <ul style="list-style-type: none"><li>• Paint, Caterpillar yellow</li><li>• Pumps, gear driven: fuel, oil, jacket water, aftercooler/oil cooler water</li></ul>                                                            | <ul style="list-style-type: none"><li>[ ] Custom Paint Colors</li></ul>                                                                                                                   |

## SPECIFICATIONS

### CAT GENERATOR

Excitation .....Permanent  
Magnet  
Pitch.....Optimum  
Number of poles.....6

Voltage regulator..... 3 phase sensing with load to ball head control when a governor failure  
Number of bearings .....Two  
Bearing  
Insulation .....Normal Class F or H  
adjustable module

### CAT DIESEL ENGINE

3616, V-16, 4 stroke, water-cooled diesel

Bore .....280 mm(11.0 in)  
Stroke .....300 mm (11.8 in)  
Displacement per cylinder.....18.5L (1127 in<sup>3</sup>)  
Total Displacement.....296L (18,032 in<sup>3</sup>)  
Compression ratio.....13:1

IP rating .....Drip proof IP23  
Over speed capability - % of rated.....125%

Wave form deviation.....3 %  
**Generator Set Monitoring System (GMS)**

#### Features:

- 10 inch (254 mm) color monitor to display all engine parameters and alarm annunciation • Annunciation of all engine shutdowns, alarms, and status points

to ball head control when a governor failure

- Start/prelube control switch, fuel control switch and emergency stop buttons • Speed control switch with automatic changing

Aspiration.....  
.TA

Fuel system.....Direct Unit Injection occurs, if ball head control is available. Contacts are available for customer use.

- Selection of local/remote control of engine
- Selection of idle/rated control of engine.
- Equipped for remote communication
- Four 4-20mA outputs (programmable) • Relay contract signals to the remote monitoring system (summary shutdown, summary alarm, local operation/remote, engine running, PLC failure, fuel control and idle/rated).

## TECHNICAL DATA

# TANDBY 5720 ekW 7150 kVA

Hz 1000 rpm



| Open Generator Set - 1000 rpm/50 Hz                                                                                                                                                                                                                                                                                                                                                                                | NOTES                                              | STANDBY DM5538-01                                                                                                                                                                                   |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b><u>RATING</u></b><br>Engine Power<br>Generator Power<br>Engine efficiency (ISO 3046/1)<br>Engine efficiency (nominal)                                                                                                                                                                                                                                                                                           | (2)<br>(2)<br>(1)<br>(1)                           | 5960 bkW<br>5720 ekW<br>43.8 %<br>42.4 %                                                                                                                                                            |
| <b><u>ENGINE DATA</u></b><br>Fuel Consumption (ISO3046/1)<br>Fuel Consumption (nominal)<br>Fuel Consumption (90% confidence)<br>Air Flow (@ 25°C, 101.3 kPaa)<br>Air Mass Flow<br>Compressor Outlet Pressure<br>Compressor Outlet Temperature<br>Inlet manifold Pressure<br>Inlet Manifold Temperature<br>Timing<br>Exhaust Stack Temperature<br>Exhaust Gas Flow (@stack temp, 101.3kPa)<br>Exhaust Gas Mass Flow | (1)<br>(1)<br>(1)<br><br><br><br><br><br><br>(10)  | 192.9 g/bkW-hr<br>196.7 g/bkW-hr<br>198.9 g/bkW-hr<br>580.9 m3/min<br>38882 kg/hr<br>307.3 kPa(abs) 203.0 °C<br>305.0 kPa(abs)<br>60.3 °C<br>16.5 °BTDC<br>395.1 °C<br>1263.2 m3/min<br>40063 kg/hr |
| <b><u>ENERGY BALANCE DATA (nominal)</u></b><br>Fuel Input Energy (LHV)<br>Heat Rej. To jacket water<br>Heat Rej. To atmosphere<br>Heat Rej. To oil cooler<br>Heat Rej. To EXH. (LHV to 25°C)<br>Heat Rej. To EXH. (LHV to 177°C)<br>Heat Rej. To aftercooler                                                                                                                                                       | (1)<br>(4)<br>(5)<br>(6)<br>(4)<br>(4)<br>(7), (8) | 10401 KW<br>1166 KW<br>281 KW<br>523 KW<br>4431 KW<br>3087 KW<br>1537 KW                                                                                                                            |
| <b><u>EMISSIONS</u></b><br>NO <sub>x</sub> (as NO)<br>CO<br>THC (molecular weight of 13.018)<br>Particulates                                                                                                                                                                                                                                                                                                       | (9)<br>(3)<br>(3)<br>(9)                           | 12.94 g/bkW-hr<br>.81 g/bkW-hr<br>.90 g/bkW-hr<br>.13 g/bkW-hr                                                                                                                                      |

## CONDITIONS AND DEFINITIONS

ENGINE RATING OBTAINED AND PRESENTED IN ACCORDANCE WITH ISO 3046/1 AND SAE J1995 JAN90 STANDARD REFERENCE CONDITIONS  
 OF 25°C, 100 KPA, 30% RELATIVE HUMIDITY AND 150M ALTITUDE AT THE STATED AFTERCOOLER WATER TEMPERATURE.  
 CONSULT ALTITUDE CURVES FOR APPLICATIONS ABOVE MAXIMUM RATED ALTITUDE AND/OR TEMPERATURE.  
 PERFORMANCE AND FUEL CONSUMPTION ARE BASED ON 35 API, 16°C FUEL HAVING A LOWER HEATING VALUE OF 42.780 KJ/KG  
 USED AT 29°C WITH A DENSITY OF 838.9 G/LITER.

## NOTES

- 1) FUEL CONSUMPTION TOLERANCE. ISO 3046/1 IS 0, + 5% OF FULL LOAD DATA. NOMINAL IS ± 3 % OF FULL LOAD DATA.
- 2) ENGINE POWER TOLERANCE IS ± 3 % OF FULL LOAD DATA.
- 3) EMISSION DATA SHOWN ARE NOT TO EXCEED VALUES.
- 4) HEAT REJECTION TO JACKET AND EXHAUST TOLERANCE IS ± 10% OF FULL LOAD DATA. (heat rate based on treated water)
- 5) HEAT REJECTION TO ATMOSPHERE TOLERANCE IS ±50% OF FULL LOAD DATA. (heat rate based on treated water)
- 6) HEAT REJECTION TO LUBE OIL TOLERANCE IS ± 20% OF FULL LOAD DATA. (heat rate based on treated water)

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- 7) HEAT REJECTION TO AFTERCOOLER TOLERANCE IS  $\pm 5\%$  OF FULL LOAD DATA. (heat rate based on treated water)  
8) TOTAL AFTERCOOLER HEAT = AFTERCOOLER HEAT x ACHRF (heat rate based on treated water) 9) EMISSION DATA SHOWN ARE DRY AND NOMINAL VALUES.  
10) TIMING BASED ON AFM INJECTORS.

## RATING DEFINITIONS AND CONDITIONS

### Meets or Exceeds International Specifications:

AS1359, CSA, IEC60034-1, ISO3046, ISO8528, NEMA  
MG 1-22, NEMA MG 1-33, UL508A, 72/23/EEC, 98/37/EC, 2004/108/EC

**Standby** - Output available with varying load for the duration of the interruption of the normal source power. Average power output is 70% of the standby power rating. Typical operation is 200 hours per year, with maximum expected usage of 500 hours per year. Standby power in accordance with ISO8528. Fuel stop power in accordance with ISO3046.

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**Ratings** are based on SAE J1349 standard conditions. These ratings also apply at ISO3046 standard conditions

**Fuel Rates** are based on fuel oil of 35° API [16° C (60° F)] gravity having an LHV of 42 780 kJ/kg (18,390 Btu/lb) when used at 29° C (85° F) and weighing 838.9 g/liter (7.001 lbs/U.S. gal.). Additional ratings may be available for specific customer requirements, contact your Caterpillar representative for details. For information regarding Low Sulfur fuel and Biodiesel capability, please consult your Cat dealer.

## DIMENSIONS

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# STANDBY 5720 ekW 7150 kVA

0 Hz 1000 rpm



| Package Dimensions |             |            |
|--------------------|-------------|------------|
| Length             | 10261.7 mm  | 404.00 in  |
| Width              | 2530.3.1 mm | 99.62 in   |
| Height             | 3977.7 mm   | 156.60 in  |
| Weight             | 64,470 kg   | 141,840 lb |

NOTE: For reference only - do not use for installation design.  
Please contact your local dealer for exact weight and dimensions. (General Dimension Drawing #2476610).

[www.Cat-ElectricPower.com](http://www.Cat-ElectricPower.com)

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