Cat® C175-16

Diesel Generator Sets





Bore – mm (in)	175 (6.89)
Stroke – mm (in)	220 (8.66)
Displacement – L (in³)	84.7 (5167)
Compression Ratio	16.7:1
Aspiration	TA
Fuel System	Common Rail
Governor Type	ADEM™ A4

Image shown may not reflect actual configuration

Standby 50 Hz kVA (ekW)	Mission Critical 50 Hz kVA (ekW)	Prime 50 Hz kVA (ekW)	Continuous 50 Hz kVA (ekW)	Emissions Performance
3000 (2400)	3000 (2400)	2725 (2180)	2500 (2000)	Optimized for Low Fuel Consumption
3000 (2400)	3000 (2400)	_	_	Optimized for Low Emissions

Features

Cat® Diesel Engine

- Designed and optimized for low emissions or low fuel consumption
- Reliable performance proven in thousands of applications worldwide
- Certified alternative fuels including Hydrotreated Vegetable Oil (HVO), Renewable Diesel (RD) and Hydrotreated Renewable Diesel (HRD) which meet EN 15940 or ASTM D975 can be used or blended with EN 590 diesel

Generator Set Package

- · Accepts 100% block load in one step
- · Meets NFPA 110 loading requirements
- Conforms to ISO 8528-5 G3 load acceptance requirements
- Reliability verified through torsional vibration, fuel consumption, oil consumption, transient performance, and endurance testing

Alternators

- Superior motor starting capability minimizes need for oversizing generator
- Designed to match performance and output characteristics of Cat diesel engines

Cooling System

- Cooling systems available to operate in ambient temperatures up to 50°C (122°F)
- · Tested to ensure proper generator set cooling

Cat Energy Control System (ECS)

- · User-friendly interface and navigation
- Scalable system to meet a wide range of installation requirements
- Expansion modules and site specific programming for specific customer requirements
- Graphical touchscreen display
- · Easily upgradeable

Warranty

- 24 months/1000-hour warranty for standby and mission critical ratings
- 12 months/unlimited hour warranty for prime and continuous ratings
- Extended service protection is available to provide extended coverage options

Worldwide Product Support

- Cat dealers have over 1,800 dealer branch stores operating in 200 countries
- Your local Cat dealer provides extensive post-sale support, including maintenance and repair agreements

Financing

- Caterpillar offers an array of financial products to help you succeed through financial service excellence
- Options include loans, finance lease, operating lease, working capital, and revolving line of credit
- Contact your local Cat dealer for availability in your region

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Standard and Optional Equipment

Standard and Optiona	ii Equipinient			
Engine	Power Termination	Vibration Isolators		
Air Cleaner ☐ Single element ☐ Dual element	<i>Type</i> ☐ Bus bar ☐ Circuit breaker	□ Rubber□ Spring□ Seismic rated		
Muffler	□ 4000A □ 5000A □ UL □ IEC	Cat Connect		
☐ Industrial grade (15 dB)☐ Residential grade (25 dB)☐ Critical grade (34 dB)	□ 3-pole□ Electrically operated	Connectivity ☐ Ethernet		
Starting	<i>Trip Unit</i> □ LSI □ LSI-G	☐ Cellular		
☐ Standard batteries ☐ Oversized batteries	LSIG-P	Extended Service Options		
☐ Standard electric starter(s) ☐ Dual electric starter(s)	Control System	Terms □ 2 year (prime)		
☐ Air starter(s) ☐ Jacket water heater	Controller ☐ Cat ECS 100 ☐ Cat ECS 200	☐ 3 year ☐ 5 year ☐ 10 year		
Alternator	☐ EMCP 4.4	Coverage		
Output voltage □ 380V □ 6600V □ 400V □ 6900V □ 415V □ 10000V □ 3300V □ 10500V	Attachments □ Local annunciator module □ Remote annunciator module □ Expansion I/O module □ Remote monitoring software	☐ Silver☐ Gold☐ Platinum☐ Platinum Plus		
□ 6300V □ 11000V	Tremete memering soliware	Ancillary Equipment		
Temperature Rise (over 40°C ambient) □ 150°C □ 125°C/130°C □ 105°C	Charging ☐ Battery charger – 10A ☐ Battery charger – 20A ☐ Battery charger – 35A	□ Automatic transfer switch (ATS)□ Paralleling switchgear□ Paralleling controls		
□ 80°C		Certifications		
Winding type ☐ Form wound		□ EU & GB Declaration of Conformity □ EU & GB Declaration of Incorporation		
Excitation ☐ Permanent magnet (PM)		☐ Eurasian Conformity (EAC)☐ IBC seismic certification☐		
Attachments ☐ Anti-condensation heater				

Note: Some options may not be available on all models. Certifications may not be available with all model configurations. Consult factory for availability.

☐ Stator and bearing temperature monitoring and protection

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Package Performance

Low Fuel Consumption

Performance	Sta	andby	Missio	n Critical	Р	rime	Cont	tinuous
Frequency	50) Hz	50) Hz	50) Hz	50) Hz
Gen set power rating with fan	240	0 ekW	240	0 ekW	218	0 ekW	200	0 ekW
Gen set power rating with fan @ 0.8 power factor	300	0 kVA	300	0 kVA	2725 kVA		2500 kVA	
Emissions	Lov	v Fuel	Low Fuel		Low Fuel		Low Fuel	
Performance number	DM8	719-08	EM0	371-05	DM8	720-10	DM8	721-08
Fuel Consumption								
100% load with fan – L/hr (gal/hr)	595.9	(157.4)	595.9	(157.4)	541.8	(143.1)	500.1	(132.1)
75% load with fan – L/hr (gal/hr)	452.8	(119.6)	452.8	(119.6)	415.9	(109.9)	387.3	(102.3)
50% load with fan – L/hr (gal/hr)	321.3	(84.9)	321.3	(84.9)	297.7	(78.7)	278.3	(73.5)
25% load with fan – L/hr (gal/hr)	192.5	(50.9)	192.5	(50.9)	181.1	(47.8)	171.9	(45.4)
Cooling System								
Radiator air flow restriction (system) – kPa (in. water)	0.12	(0.48)	0.12	(0.48)	0.12	(0.48)	0.12	(0.48)
Radiator air flow - m³/min (cfm)	2074	(73242)	2074	(73242)	2074	(73242)	2074	(73242)
Engine coolant capacity – L (gal)	303.5	(80.2)	303.5	(80.2)	303.5	(80.2)	303.5	(80.2)
Radiator coolant capacity – L (gal)	579.0	(152.0)	579.0	(152.0)	579.0	(152.0)	579.0	(152.0)
Total coolant capacity – L (gal)	882.5	(232.2)	882.5	(232.2)	882.5	(232.2)	882.5	(232.2)
Inlet Air								
Combustion air inlet flow rate - m³/min (cfm)	188.8	(6665.5)	188.8	(6665.5)	175.7	(6205.3)	162.2	(5728.8)
Exhaust System								
Exhaust stack gas temperature – °C (°F)	485.3	(905.6)	485.3	(905.6)	476.2	(889.2)	476.0	(888.8)
Exhaust gas flow rate - m³/min (cfm)	498.0	(17584.3)	498.0	(17584.3)	456.9	(16132.1)	422.0	(14902.7
Exhaust system backpressure (maximum allowable) – kPa (in. water)	6.7	(27.0)	6.7	(27.0)	6.7	(27.0)	6.7	(27.0)
Heat Rejection								
Heat rejection to jacket water - kW (Btu/min)	1160	(65983)	1160	(65983)	1047	(59569)	961	(54650)
Heat rejection to exhaust (total) - kW (Btu/min)	2264	(128724)	2264	(128724)	2063	(117309)	1919	(109160)
Heat rejection to aftercooler - kW (Btu/min)	221	(12570)	221	(12570)	188	(10714)	168	(9531)
Heat rejection to atmosphere from engine – kW (Btu/min)	171	(9742)	171	(9742)	165	(9356)	162	(9209)
Heat rejection from alternator – kW (Btu/min)	92	(5243)	92	(5243)	81	(4629)	75	(4248)
Emissions* (Nominal)								
NOx mg/Nm³ (g/hp-h)	4103.7	(7.72)	4103.7	(7.72)	4524.1	(8.21)	4411.8	(8.17)
CO mg/Nm³ (g/hp-h)	153.1	(0.32)	153.1	(0.32)	133.5	(0.27)	125.9	(0.26)
HC mg/Nm³ (g/hp-h)	52.3	(0.13)	52.3	(0.13)	81.8	(0.19)	92.1	(0.22)
PM mg/Nm³ (g/hp-h)	10.4	(0.03)	10.4	(0.03)	18.5	(0.04)	21.4	(0.05)
Emissions* (Potential Site Variation)								
NOx mg/Nm³ (g/hp-h)	4924.5	(9.26)	4924.5	(9.26)	5429.0	(9.86)	5294.1	(9.81)
CO mg/Nm³ (g/hp-h)	275.5	(0.57)	275.5	(0.57)	240.3	(0.48)	226.6	(0.47)
HC mg/Nm³ (g/hp-h)	69.5	(0.17)	69.5	(0.17)	108.8	(0.25)	122.5	(0.29)
PM mg/Nm³ (g/hp-h)	14.5	(0.04)	14.5	(0.04)	25.9	(0.06)	30.0	(0.07)

^{*}mg/Nm³ levels are corrected to 5% O₂. Contact your local Cat dealer for further information.

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Package Performance

Low Emissions

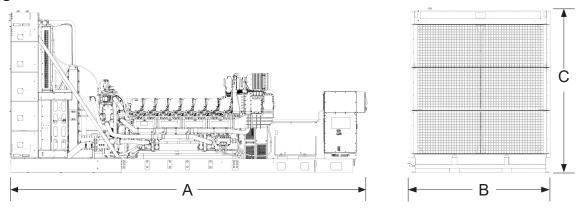
Performance	Standby		Mission Critical	
Frequency	50 Hz		50 Hz	
Gen set power rating with fan	2400 ekW		2400 ekW	
Gen set power rating with fan @ 0.8 power factor	3000 kVA		3000 kVA	
Emissions	Low Emissions		Low Emissions	
Performance number	DM8716-08		EM0670-06	
Fuel Consumption				
100% load with fan – L/hr (gal/hr)	646.3	(170.7)	646.3	(170.7)
75% load with fan – L/hr (gal/hr)	518.5	(137.0)	518.5	(137.0)
50% load with fan – L/hr (gal/hr)	345.8	(91.4)	345.8	(91.4)
25% load with fan – L/hr (gal/hr)	193.8	(51.2)	193.8	(51.2)
Cooling System				
Radiator air flow restriction (system) – kPa (in. water)	0.12	(0.48)	0.12	(0.48)
Radiator air flow – m³/min (cfm)	2074	(73242)	2074	(73242)
Engine coolant capacity – L (gal)	303.5	(80.2)	303.5	(80.2)
Radiator coolant capacity – L (gal)	579.0	(152.0)	579.0	(152.0)
Total coolant capacity – L (gal)	882.5	(232.2)	882.5	(232.2)
Inlet Air				
Combustion air inlet flow rate – m³/min (cfm)	215.3	(7601.2)	215.3	(7601.2)
Exhaust System				
Exhaust stack gas temperature – °C (°F)	499.7	(931.4)	499.7	(931.4)
Exhaust stack gas temperature – °C (°F) Exhaust gas flow rate – m³/min (cfm)	499.7 578.2	(931.4) (20418.0)	499.7 578.2	(931.4) (20418.0)
		` ,		
Exhaust gas flow rate – m³/min (cfm) Exhaust system backpressure (maximum	578.2	(20418.0)	578.2	(20418.0)
Exhaust gas flow rate – m³/min (cfm) Exhaust system backpressure (maximum allowable) – kPa (in. water)	578.2	(20418.0)	578.2	(20418.0)
Exhaust gas flow rate – m³/min (cfm) Exhaust system backpressure (maximum allowable) – kPa (in. water) Heat Rejection	578.2 6.7	(20418.0)	578.2 6.7	(20418.0)
Exhaust gas flow rate – m³/min (cfm) Exhaust system backpressure (maximum allowable) – kPa (in. water) Heat Rejection Heat rejection to jacket water – kW (Btu/min)	578.2 6.7 1269	(20418.0) (27.0) (72155)	578.2 6.7 1269	(20418.0) (27.0) (72155)
Exhaust gas flow rate - m³/min (cfm) Exhaust system backpressure (maximum allowable) - kPa (in. water) Heat Rejection Heat rejection to jacket water - kW (Btu/min) Heat rejection to exhaust (total) - kW (Btu/min)	578.2 6.7 1269 2595	(20418.0) (27.0) (72155) (147577)	578.2 6.7 1269 2595	(20418.0) (27.0) (72155) (147577)
Exhaust gas flow rate – m³/min (cfm) Exhaust system backpressure (maximum allowable) – kPa (in. water) Heat Rejection Heat rejection to jacket water – kW (Btu/min) Heat rejection to exhaust (total) – kW (Btu/min) Heat rejection to aftercooler – kW (Btu/min) Heat rejection to atmosphere from engine –	578.2 6.7 1269 2595 287	(20418.0) (27.0) (72155) (147577) (16311)	578.2 6.7 1269 2595 287	(20418.0) (27.0) (72155) (147577) (16311)
Exhaust gas flow rate – m³/min (cfm) Exhaust system backpressure (maximum allowable) – kPa (in. water) Heat Rejection Heat rejection to jacket water – kW (Btu/min) Heat rejection to exhaust (total) – kW (Btu/min) Heat rejection to aftercooler – kW (Btu/min) Heat rejection to atmosphere from engine – kW (Btu/min)	578.2 6.7 1269 2595 287 185	(20418.0) (27.0) (72155) (147577) (16311) (10507)	578.2 6.7 1269 2595 287 185	(20418.0) (27.0) (72155) (147577) (16311) (10507)
Exhaust gas flow rate - m³/min (cfm) Exhaust system backpressure (maximum allowable) - kPa (in. water) Heat Rejection Heat rejection to jacket water - kW (Btu/min) Heat rejection to exhaust (total) - kW (Btu/min) Heat rejection to aftercooler - kW (Btu/min) Heat rejection to atmosphere from engine - kW (Btu/min) Heat rejection from alternator - kW (Btu/min)	578.2 6.7 1269 2595 287 185	(20418.0) (27.0) (72155) (147577) (16311) (10507)	578.2 6.7 1269 2595 287 185	(20418.0) (27.0) (72155) (147577) (16311) (10507)
Exhaust gas flow rate – m³/min (cfm) Exhaust system backpressure (maximum allowable) – kPa (in. water) Heat Rejection Heat rejection to jacket water – kW (Btu/min) Heat rejection to exhaust (total) – kW (Btu/min) Heat rejection to aftercooler – kW (Btu/min) Heat rejection to atmosphere from engine – kW (Btu/min) Heat rejection from alternator – kW (Btu/min) Emissions* (Nominal)	578.2 6.7 1269 2595 287 185 92	(20418.0) (27.0) (72155) (147577) (16311) (10507) (5243)	578.2 6.7 1269 2595 287 185 92	(20418.0) (27.0) (72155) (147577) (16311) (10507) (5243)
Exhaust gas flow rate — m³/min (cfm) Exhaust system backpressure (maximum allowable) — kPa (in. water) Heat Rejection Heat rejection to jacket water — kW (Btu/min) Heat rejection to exhaust (total) — kW (Btu/min) Heat rejection to aftercooler — kW (Btu/min) Heat rejection to atmosphere from engine — kW (Btu/min) Heat rejection from alternator — kW (Btu/min) Emissions* (Nominal) NOx mg/Nm³ (g/hp-h)	578.2 6.7 1269 2595 287 185 92	(20418.0) (27.0) (72155) (147577) (16311) (10507) (5243) (4.20)	578.2 6.7 1269 2595 287 185 92 2068.2	(20418.0) (27.0) (72155) (147577) (16311) (10507) (5243) (4.20)
Exhaust gas flow rate — m³/min (cfm) Exhaust system backpressure (maximum allowable) — kPa (in. water) Heat Rejection Heat rejection to jacket water — kW (Btu/min) Heat rejection to exhaust (total) — kW (Btu/min) Heat rejection to aftercooler — kW (Btu/min) Heat rejection to atmosphere from engine — kW (Btu/min) Heat rejection from alternator — kW (Btu/min) Emissions* (Nominal) NOx mg/Nm³ (g/hp-h) CO mg/Nm³ (g/hp-h)	578.2 6.7 1269 2595 287 185 92 2068.2 285.3	(20418.0) (27.0) (72155) (147577) (16311) (10507) (5243) (4.20) (0.63)	578.2 6.7 1269 2595 287 185 92 2068.2 285.3	(20418.0) (27.0) (72155) (147577) (16311) (10507) (5243) (4.20) (0.63)
Exhaust gas flow rate — m³/min (cfm) Exhaust system backpressure (maximum allowable) — kPa (in. water) Heat Rejection Heat rejection to jacket water — kW (Btu/min) Heat rejection to exhaust (total) — kW (Btu/min) Heat rejection to aftercooler — kW (Btu/min) Heat rejection to atmosphere from engine — kW (Btu/min) Heat rejection from alternator — kW (Btu/min) Emissions* (Nominal) NOx mg/Nm³ (g/hp-h) CO mg/Nm³ (g/hp-h) HC mg/Nm³ (g/hp-h)	578.2 6.7 1269 2595 287 185 92 2068.2 285.3 37.1	(20418.0) (27.0) (72155) (147577) (16311) (10507) (5243) (4.20) (0.63) (0.09)	578.2 6.7 1269 2595 287 185 92 2068.2 285.3 37.1	(20418.0) (27.0) (72155) (147577) (16311) (10507) (5243) (4.20) (0.63) (0.09)
Exhaust gas flow rate — m³/min (cfm) Exhaust system backpressure (maximum allowable) — kPa (in. water) Heat Rejection Heat rejection to jacket water — kW (Btu/min) Heat rejection to exhaust (total) — kW (Btu/min) Heat rejection to aftercooler — kW (Btu/min) Heat rejection to atmosphere from engine — kW (Btu/min) Heat rejection from alternator — kW (Btu/min) Emissions* (Nominal) NOx mg/Nm³ (g/hp-h) CO mg/Nm³ (g/hp-h) HC mg/Nm³ (g/hp-h) PM mg/Nm³ (g/hp-h)	578.2 6.7 1269 2595 287 185 92 2068.2 285.3 37.1	(20418.0) (27.0) (72155) (147577) (16311) (10507) (5243) (4.20) (0.63) (0.09)	578.2 6.7 1269 2595 287 185 92 2068.2 285.3 37.1	(20418.0) (27.0) (72155) (147577) (16311) (10507) (5243) (4.20) (0.63) (0.09)
Exhaust gas flow rate — m³/min (cfm) Exhaust system backpressure (maximum allowable) — kPa (in. water) Heat Rejection Heat rejection to jacket water — kW (Btu/min) Heat rejection to exhaust (total) — kW (Btu/min) Heat rejection to aftercooler — kW (Btu/min) Heat rejection to atmosphere from engine — kW (Btu/min) Heat rejection from alternator — kW (Btu/min) Emissions* (Nominal) NOx mg/Nm³ (g/hp-h) CO mg/Nm³ (g/hp-h) HC mg/Nm³ (g/hp-h) PM mg/Nm³ (g/hp-h) Emissions* (Potential Site Variation)	578.2 6.7 1269 2595 287 185 92 2068.2 285.3 37.1 15.4	(20418.0) (27.0) (72155) (147577) (16311) (10507) (5243) (4.20) (0.63) (0.09) (0.04)	578.2 6.7 1269 2595 287 185 92 2068.2 285.3 37.1 15.4	(20418.0) (27.0) (72155) (147577) (16311) (10507) (5243) (4.20) (0.63) (0.09) (0.04)
Exhaust gas flow rate — m³/min (cfm) Exhaust system backpressure (maximum allowable) — kPa (in. water) Heat Rejection Heat rejection to jacket water — kW (Btu/min) Heat rejection to exhaust (total) — kW (Btu/min) Heat rejection to aftercooler — kW (Btu/min) Heat rejection to atmosphere from engine — kW (Btu/min) Heat rejection from alternator — kW (Btu/min) Emissions* (Nominal) NOx mg/Nm³ (g/hp-h) CO mg/Nm³ (g/hp-h) HC mg/Nm³ (g/hp-h) PM mg/Nm³ (g/hp-h) Emissions* (Potential Site Variation) NOx mg/Nm³ (g/hp-h)	578.2 6.7 1269 2595 287 185 92 2068.2 285.3 37.1 15.4	(20418.0) (27.0) (72155) (147577) (16311) (10507) (5243) (4.20) (0.63) (0.09) (0.04)	578.2 6.7 1269 2595 287 185 92 2068.2 285.3 37.1 15.4	(20418.0) (27.0) (72155) (147577) (16311) (10507) (5243) (4.20) (0.63) (0.09) (0.04)
Exhaust gas flow rate — m³/min (cfm) Exhaust system backpressure (maximum allowable) — kPa (in. water) Heat Rejection Heat rejection to jacket water — kW (Btu/min) Heat rejection to exhaust (total) — kW (Btu/min) Heat rejection to aftercooler — kW (Btu/min) Heat rejection to atmosphere from engine — kW (Btu/min) Heat rejection from alternator — kW (Btu/min) Emissions* (Nominal) NOx mg/Nm³ (g/hp-h) CO mg/Nm³ (g/hp-h) HC mg/Nm³ (g/hp-h) Emissions* (Potential Site Variation) NOx mg/Nm³ (g/hp-h) CO mg/Nm³ (g/hp-h)	578.2 6.7 1269 2595 287 185 92 2068.2 285.3 37.1 15.4 2481.8 513.5	(20418.0) (27.0) (72155) (147577) (16311) (10507) (5243) (4.20) (0.63) (0.09) (0.04) (5.04) (1.13)	578.2 6.7 1269 2595 287 185 92 2068.2 285.3 37.1 15.4 2481.8 513.5	(20418.0) (27.0) (72155) (147577) (16311) (10507) (5243) (4.20) (0.63) (0.09) (0.04) (5.04) (1.13)

 $^{^\}star mg/Nm^3$ levels are corrected to 5% O2. Contact your local Cat dealer for further information.

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Weights and Dimensions



Dim "A"	Dim "B"	Dim "C"	Dry Weight
mm (in)	mm (in)	mm (in)	kg (lb)
8134 (320.2)	2770 (109.1)	3306 (130.1)	

Note: For reference only. Do not use for installation design. Contact your local Cat dealer for precise weights and dimensions.

Ratings Definitions

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 rated ekW. Typical operation is 200 hours per year, with maximum expected usage of 500 hours per year.

Mission Critical

Output available with varying load for the duration of the interruption of the normal source power. Average power output is 85% of the mission critical rated ekW. Typical peak demand up to 100% of rated ekW for up to 5% of the operating time. Typical operation is 200 hours per year, with maximum expected usage of 500 hours per year.

Prime

Output available with varying load for an unlimited time. Average power output is 70% of the prime rated ekW. Typical peak demand is 100% of prime rated ekW with 10% overload capability for emergency use for a maximum of 1 hour in 12. Overload operation cannot exceed 25 hours per year.

Continuous

Output available with non-varying load for an unlimited time. Average power output is 70-100% of the continuous rated ekW. Typical peak demand is 100% of continuous rated ekW for 100% of the operating hours.

Applicable Codes and Standards

AS 1359, IBC, IEC 60034-1, ISO 3046, ISO 8528, NEMA MG1-22, NEMA MG1-33, 2014/35/EU, 2006/42/EC, 2014/30/EU and facilitates compliance to NFPA 37, NFPA 70, NFPA 99, NFPA 110.

Note: Codes may not be available in all model configurations. Please consult your local Cat dealer for availability.

Data Center Applications

- All ratings Tier III/Tier IV compliant per Uptime Institute requirements.
- All ratings ANSI/TIA-942 compliant for Rated-1 through Rated-4 data centers.

Fuel Rates

Fuel consumption reported in accordance with ISO 3046-1, 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 15°C (59°F) and weighing 850 g/liter (7.0936 lbs/U.S. gal.) All fuel consumption values refer to rated engine power.

www.cat.com/electricpower

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Materials and specifications are subject to change without notice. The International System of Units (SI) is used in this publication.