

Product Specifications For 814



Engine

Engine Model	Cat® C7.1
Net Power - SAE J1349:2011	186 kW
Net Power - ISO 9249:2007	186 kW
Gross Power - SAE J1995:2014	212 kW
Engine Power - ISO 14396:2002	205 kW
Rated Speed	2200 r/min
Emissions	Option 1 - U.S. EPA Tier 4 Final/EU Stage V
Peak Torque (1400 rpm)	1223 N·m
Torque Rise	52%
Emissions	Option 2 - Brazil MAR-1, emitting equivalent to U.S. EPA Tier 3/EU Stage IIIA
Rated Speed	2200 r/min
Net Power - SAE J1349:2011	186 kW
Net Power - ISO 9249:2007	186 kW
Gross Power - SAE J1995:2014	213 kW

Engine Power - ISO 14396: 2002	205 kW
Peak Torque (1,400 rpm)	1016 N·m
Torque Rise	26 %
Bore	105 mm
Stroke	135 mm
Displacement	7.01 l
High Idle Speed	2270 r/min
Low Idle Speed	800 r/min
Maximum Altitude without Derating	3000 m
Note (1)	Net power advertised is the power available at the engine flywheel when the engine is equipped with a fan, air cleaner, clean emissions module, and alternator.

Operating Specifications

Operating Weight (Tier 4 Final/Stage V)	22011 kg
Operating Weight (Tier 3/Stage IIIA equivalent)	21721 kg

Transmission

Transmission Type	Cat Planetary Power Shift
Forward - 1	5.9 km/h
Forward - 2	10.4 km/h
Forward - 3	18.1 km/h

Forward - 4	31.3 km/h
Reverse - 1	6.7 km/h
Reverse - 2	11.8 km/h
Reverse - 3	20.6 km/h
Reverse - 4	35.5 km/h

Hydraulic System - Lift/Tilt

Lift/Tilt System - Circuit	Pilot operated load sensing valve with EH
Lift/Tilt System	Variable displacement piston
Maximum Flow at 2,200 rpm	89 L/min
Relief Valve Setting - Lift/Tilt	22000 kPa
Cylinders, Double Acting - Lift, Bore and Stroke	120 mm × 915 mm (4.7 in × 36 in)
Cylinders, Double Acting - Left and Right Tilt, Bore and Stroke	101.6 mm × 234 mm (4 in × 9.2 in)
Pilot System	Open center, fixed displacement gear
Pilot Relief Valve Setting	21000 kPa

Hydraulic System - Steering

Steering System - Circuit	Pilot, load sensing
Steering System - Pump	Variable displacement piston
Maximum Flow at 2,200 rpm	147 L/min
Relief Valve Setting - Steering	27600 kPa

Total Steering Angle	72°
Steering Cycle Times - High Idle	3 s
Steering Cycle Times - Low Idle	8.2 s

Service Refill Capacities

Fuel Tank	500 l
Diesel Exhaust Fluid Tank	16 l
Cooling Systems - Tier 4 Final/EU Stage V	81 l
Cooling Systems - Tier 3/Stage IIIA equivalent	73 l
Engine Crankcase	20 l
Transmission	50 l
Differential - Final Drives - Front	65 l
Differential - Final Drives - Rear	65 l
Hydraulic System - Implement/Steering	129 l
Hydraulic Tank Only	75 l

Note (1) All nonroad Tier 4 Final and EU Stage V diesel engines are required to use: – Ultra low sulfur diesel (ULSD) fuels containing 15 ppm (mg/kg) sulfur or less. – Cat engines are compatible with the following renewable, alternative, and biodiesel* fuels that reduce greenhouse gases***: • Up to B20 biodiesel (FAME)** • Up to 100% HVO and GTL renewable fuels – Cat DEO-ULS™ or oils that meet the Cat ECF-3, API CJ-4, and ACEA E9 specifications are required. – Diesel exhaust fluid (DEF) that meets all requirements defined in ISO 22241-1:2006. * Refer to guidelines for successful application. Please consult your Cat dealer or “Caterpillar Machine Fluids Recommendations” (SEB16250) for details. ** Up to B20. Engines with no aftertreatment devices can use up to B20. Engines with aftertreatment devices can use up to B20. Engines with no aftertreatment devices can use higher blends, up to B100. *** Tailpipe greenhouse gas emissions from lower-carbon intensity fuels are essentially the same as traditional fuels.

Air Conditioning System

Air Conditioning	The air conditioning system on this machine contains the fluorinated greenhouse gas refrigerant R134a or R1234yf. See the label or instruction manual for identification of the gas. - If equipped with R134a (Global Warming Potential = 1430), the system contains 1.9 kg of refrigerant which has a CO2 equivalent of 2.717 metric tonnes.
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Axles

Front	Planetary – Fixed
Rear	Planetary – Oscillating
Oscillation Angle	±10°

Braking System

Service Brakes	Single Disc Wet (enclosed) 4 WHL
Parking Brake	Drum and Shoe, Spring Applied, Hydraulic Released

Sound Performance - Tier 4 Final / Stage V

Operator Sound Pressure Level (ISO 6396:2008)	72 dB(A)
Machine Sound Power Level (ISO 6395:2008)	111 dB(A)

Operator Sound Pressure Level (ISO 6396:2008)*	70 dB(A)
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Machine Sound Power Level (ISO 6395:2008)*	109 dB(A)
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Note (1)	* Sound suppression equipped
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Note (2)	The machine sound power level was measured according to ISO 6395:2008. The measurement was conducted at maximum engine cooling fan speed.
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Note (3)	The machine sound power level was measured according to ISO 6395:2008. The measurement was conducted at maximum engine cooling fan speed.
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Note (4)	Hearing protection may be needed when the machine is operated with a cab that is not properly maintained or when the doors or windows are open for extended periods or in a noisy environment.
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Sound Performance - Tier 3 / Stage IIIA

Operator Sound Pressure Level (ISO 6396:2008)	72 dB(A)
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Machine Sound Power Level (ISO 6395:2008)	112 dB(A)
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Operator Sound Pressure Level (ISO 6396:2008)*	70 dB(A)
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Machine Sound Power Level (ISO 6395:2008)*	110 dB(A)
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Note (1)	* Sound suppression equipped
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Note (2)	The machine sound power level was measured according to ISO 6395:2008. The measurement was conducted at maximum engine cooling fan speed.
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Note (3)

The operator sound pressure level was measured according to ISO 6396:2008. The measurement was conducted at maximum engine cooling fan speed.

Note (4)

Hearing protection may be needed when the machine is operated with a cab that is not properly maintained or when the doors or windows are open for extended periods or in a noisy environment.

Dimensions (Approximate)

Height to Top of Beacon	3981 mm
Height - Top of Cab	3694 mm
Height - Top of Exhaust Pipe	3439 mm
Height - Top of Hood	2663 mm
Height to Top of Radiator Guard	2453 mm
Ground Clearance to Hitch	413 mm
Ground Clearance to Transmission Guard	422 mm
Ground Clearance to Bottom of Bumper	712 mm
Centerline of Rear Axle to Bumper	1990 mm
Centerline of Front Axle to Hitch	1675 mm
Wheel Base	3350 mm
Width over Platform	3145 mm
Overall Length to Front Tire	6356 mm
Overall Machine Length with Straight Blade	7190 mm
Overall Machine Length with Coal Blade	7784 mm

Straight Blade

Capacity	2.84 m ³
Overall Width	3656 mm
Height	1001 mm
Dig Depth	493 mm
Ground Clearance	904 mm
Maximum Tilt	802 mm
Turning Radius – Outside Corner of Blade	7166 mm
Turning Radius – Inside Corner of Blade	3550 mm
Weight	1396 kg
Total Operating Weight	22011 kg

Coal Blade

Capacity	10.55 m ³
Overall Width	4321 mm
Height	1470 mm
Dig Depth	488 mm
Ground Clearance	932 mm
Maximum Tilt	945 mm
Turning Radius – Outside Corner of Blade	7647 mm
Turning Radius – Inside Corner of Blade	3420 mm

Weight

2062 kg

Total Operating Weight

22678 kg

814 Standard Equipment

NOTE

Standard and optional equipment may vary. Consult your Cat dealer for details.

POWERTRAIN

Advanced Productivity Electronic Control System (APECS)

Air-to-air aftercooler

Brakes, full hydraulic, enclosed, wet multiple disc service brakes

Cat clean emission module (Tier 4 Final/Stage V only)

Electro-hydraulic parking brake

Electronic Clutch Pressure Control (ECPC)

Engine, Cat C7.1 configured for two emissions options: Tier 4 Final/Stage V, or emitting equivalent to U.S. EPA Tier 3/EU Stage IIIA

Engine driven cooling fan – suction

Fuel priming pump (electric)

Fuel-to-air cooler

Muffler (under hood) (Tier 3/Stage IIIA equivalent)

Radiator, unit core

Throttle lock

Transmission, planetary, with 4F/4R speed range control

ELECTRICAL

Alternator, 150 amp

Batteries, maintenance-free

Electrical system, 24V

Lights, directional (rear)

Lighting system, (front and rear)

Starter, electric

SAFETY

Alarm, back-up

Light, warning switched (LED strobe)

Camera, rear vision

Cat Detect: object detection (ready)

Mirror, internal (panoramic)

Mirrors, rearview (externally mounted)

Seat belt with minder, retractable, 76 mm (3 in) wide

Steering and Transmission Integrated Control (STIC™) system with lockout

Emergency platform exit

OPERATOR ENVIRONMENT

12V power port for mobile phone or laptop connection

Air conditioner

Cab, sound-suppressed pressurized

Cab door, sliding window (LH)

Coat and hard hat hooks

Fingertip shifting controls

Flip-up armrest

Heater and defroster

Horn, electric

Electro-hydraulic tilt and lift controls (seat mounted)

Implement hydraulic lockout

Instrumentation, gauges: diesel exhaust fluid (DEF) level (U.S. EPA Tier 4 Final/EU Stage V only), engine coolant temperature, fuel level, hydraulic oil temperature, speedometer/tachometer, torque converter temperature

Instrumentation, warning indicators: action alert system – three categories, brake oil pressure, electrical system – low voltage, engine failure malfunction alert and action lamp, parking brake status

Light, (dome) cab

Lunchbox and beverage holders

Radio ready for entertainment: antenna, speakers, converter (12V, 10-15 amp)

Seat, Premium plus containing forced air heating and cooling, two-way thigh adjustment, power lumbar and back bolster adjustment, ride stiffness adjustment, dynamic end dampening, and leather finish

Sun visor, front

Cab glass, laminated and tinted, rubber mounted

Transmission gear (indicator)

Vital Information Management System (VIMS™): graphical information display, external data port, customizable operator profiles, event indicator light on rear grill

Wet-arm wipers/washers (front and rear): intermittent front and rear wipers

Internal four-post rollover protective structure/falling objects protective structure (ROPS/FOPS)

COLD WEATHER

Starting aid (ether)

Antifreeze, premixed 50% concentration extended life (-34° C/-29° F)

SERVICE

Ground level engine shutdown

Ground level lockable battery disconnect switch

Auxiliary start receptacle

Doors, service access (locking)

Ecology drains for engine, radiator, transmission, hydraulic tank

Engine, crankcase, 500 hour interval with CJ-4 oil

Fire suppression ready

Oil change system, high speed

Oil sampling valves

Total hydraulic filtration system

Engine precleaner

EFFICIENCY

Torque converter
Steering, load sensing

OTHER

Guards, crankcase and powertrain
Guard, driveshaft
Fuel tank, 500 L (132.1 gal)
Hitch, drawbar with pin
Hoses, Cat XT™
Hydraulic, engine, and transmission oil coolers
Vandalism protection caplocks
Venturi stack

814 Optional Equipment

NOTE

Standard and optional equipment may vary. Consult your Cat dealer for details.

POWERTRAIN

Heater, engine coolant, 120V
Heater, engine coolant, 240V
No-spin rear axle

OPERATOR ENVIRONMENT

Radio, AM/FM/AUX/USB/Bluetooth®

OTHER

Counterweight (front)
Blade (straight)

COLD WEATHER

Mirrors, heated
Antifreeze, -50° C (-58° F)

SERVICE

Fast fill fuel
Dual engine precleaner

ELECTRICAL

Lighting System, LED

SOUND

Sound Suppression (required for Brazil)