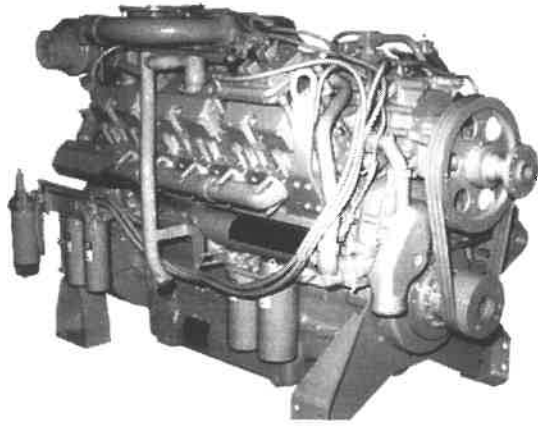


CATERPILLAR®



Shown with
Optional Equipment

Industrial Engine

3412E

580-1050 bhp/433-783 kW
1800-2100 rpm

1996 EPA and CARB Non-Road
Emissions Certified

SPECIFICATIONS

In-Line 12, 4-Stroke-Cycle Diesel

Bore—in (mm) 5.4 (137.2)

Stroke—in (mm) 6.0 (152.5)

Displacement—cu in (L) 1649 (27)

Low idle (rpm)..... 600-1400 (default 750 rpm)

Rotation (from flywheel end)... Counterclockwise

Capacity for Liquids—U.S. gal (L)

Cooling System (engine only) 15 (57)

Lube Oil System (refill)..... 18 (68)

Weight, Net Dry (approx)—lb (kg).... 5365 (2436)



FEATURES

■ FUEL ECONOMY

Consistent performance, variable-timed fuel injection, broad rpm turbocharger match, excellent fuel economy over entire operating range.

■ RELIABILITY AND DIESEL DURABILITY

Diesel tough components, precise balance, and conservative speed for smooth operation and long engine life.

■ FLEXIBLE APPLICATION RANGE

High torque rise, big displacement, convenient installation, more performance for your money.

■ WORLDWIDE PRODUCT SUPPORT AND PARTS AVAILABILITY

STANDARD EQUIPMENT

Air intake

single stage, dry air cleaner

Cooling

lube oil, thermostats, jacket water pump

Electronic Control Module (ECM)

engine monitoring system

Exhaust

8-inch dry elbow

Filters – primary and secondary

fuel, right side; lube, right side

Flywheel and SAE No. 0 or No. 1 housing

Instruments and gauges

premium instrument panel, fuel pressure, lube oil pressure and temperature, and water temperature gauge

Pumps

priming and transfer

centrifugal gear driven jacket water

Supports

OPTIONAL EQUIPMENT

Alternators

Cooling systems

heat exchanger, radiator, fans, fan drives

Exhaust

flexible fittings, mufflers

Instruments and gauges

EMS, tachometer, voltmeter

Power takeoffs

auxiliary drives, rear enclosed clutches,

hydraulic pump drives

Starting systems

air, electric; jacket water heaters



3412E INDUSTRIAL ENGINE

PERFORMANCE DATA

3412E DITA

Rating Level	C			B			A					
Rated rpm	2100			1800			2000			1800		
Engine Power @ rpm	750 bhp (559 bkW)			730 bhp (544 bkW)			680 bhp (507 bkW)			580 bhp (433 bkW)		

rpm	2100	1800	1400	1800	1500	1200	2000	1700	1400	1800	1500	1200
bhp	750	723	599	730	694	584	680	660	571	580	552	464
lb/bhp-hr	.385	.361	.358	.359	.349	.350	.375	.356	.361	.354	.348	.359
gal/hr	41.3	37.2	30.6	37.4	34.6	29.1	36.4	33.5	29.4	29.3	27.4	23.7

bkW	559	540	447	544	518	436	507	492	426	433	412	346
g/bkW-hr	234	220	218	218	212	213	228	217	220	215	212	219
L/hr	156.2	140.8	115.8	141.7	130.8	110.1	137.8	126.7	111.2	111.0	103.6	89.8

PERFORMANCE DATA

3412E DITTA

Rating Level	E*			D*			D			C*			C		
Rated rpm	2100			2100			2100			2100			2100		
Engine Power @ rpm	1050 bhp (783 bkW)			990 bhp (739 bkW)			850 bhp (634 bkW)			860 bhp (641 bkW)			750 bhp (559 bkW)		

rpm	2100	1800	1400	2100	1800	1400	2100	1800	1400	2100	1800	1400	2100	1800	1400
bhp	1050	1013	840	990	955	792	850	820	680	860	830	688	750	723	600
lb/bhp-hr	.357	.343	.356	.358	.348	.361	.362	.347	.358	.361	.351	.363	.364	.348	.372
gal/hr	53.5	49.5	42.6	50.6	47.4	40.7	44.0	40.6	34.6	44.4	41.4	35.6	39.0	35.8	31.7

bkW	783	756	627	738	712	590	634	612	507	641	619	513	559	540	447
g/bkW-hr	217	209	216	218	212	220	220	211	218	220	213	221	221	211	226
L/hr	202.7	187.5	161.1	192	179	154	166.4	153.6	131.1	168	157	135	147.5	135.5	120.1

Rating Level	C*			C			B*			B			A		
Rated rpm	1800			1800			2000			2000			1800		
Engine Power @ rpm	840 bhp (627 bkW)			750 bhp (559 bkW)			820 bhp (612 bkW)			750 bhp (559 bkW)			735 bhp (548 bkW)		

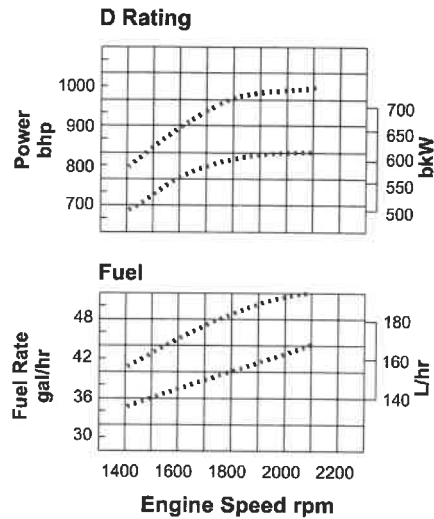
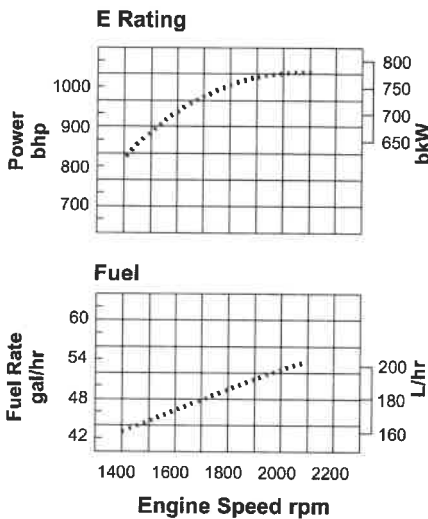
rpm	1800	1600	1400	1800	1500	1200	2000	1700	1400	2000	1700	1400	1800	1500	1200
bhp	840	823	765	750	713	599	820	796	689	750	727	630	735	699	588
lb/bhp-hr	.349	.355	.362	.348	.347	.363	.360	.350	.363	.356	.350	.363	.350	.359	.368
gal/hr	41.8	41.8	39.3	37.2	35.1	31.1	42.1	39.7	35.6	38.1	36.1	32.5	36.7	35.8	30.7

bkW	627	614	571	559	532	447	612	593	514	559	542	470	548	521	438
g/bkW-hr	212	216	220	212	211	221	219	213	221	217	213	221	213	218	224
L/hr	158.4	158.1	148.9	140.9	133.0	117.6	160	150	135	144.4	136.6	123.1	139.1	135.5	116.4

* These ratings are certifiable for 2000 EPA and CARB Non-Road Emissions.

RATING CURVES

DITA —————
 DITTA ··········



INDUSTRIAL RATINGS

IND-E

IND-E ratings are for service where speed and power are required for a short time for initial starting or sudden overload. For emergency service where standard power is unavailable. The maximum horsepower and speed capability of the engine can be utilized for a maximum of 15 uninterrupted minutes followed by one hour at intermittent or duration of the emergency.

Operating limits are:

1. Time at full load not to exceed 5% of the duty cycle or 15 minutes max.
2. Load factor limited to 35%.
3. The maximum horsepower and speed capability of the engine can be utilized for a maximum of 15 minutes followed by one hour at intermittent or duration of the emergency.
4. Typical operating hours per year is 500.

Examples of an IND-E industrial application are:

1. Standby centrifugal water pumps
2. Oil field well servicing
3. Crash trucks
4. Gas turbine starters

IND-D

IND-D ratings are for service where rated power is required by period overloads. The maximum horsepower and speed capability of the engine can be utilized for a maximum of 30 uninterrupted minutes followed by one hour at intermittent.

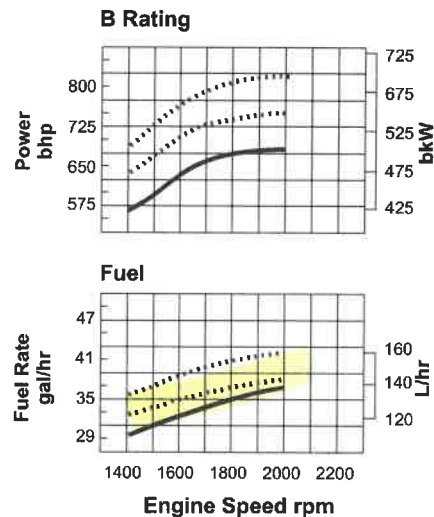
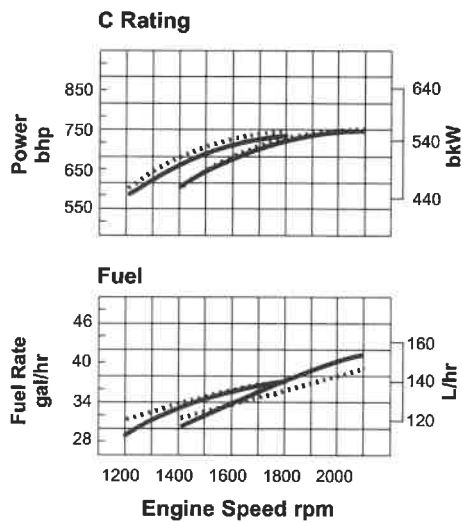
Operating limits are:

1. Time at full load not to exceed 10% of the duty cycle or 30 min max.
2. Load factor limited to 50%.
3. Full load operation to a maximum of 30 minutes followed by one hour at intermittent.
4. Typical operating hours per year is 1500.

Examples of an IND-D industrial application are:

1. Offshore cranes
2. Runway snowblowers
3. Water well drills
4. Portable air compressors
5. Fire pump certification power (advertised power)

RATING CURVES



INDUSTRIAL RATINGS (cont.)

IND-C (INTERMITTENT)

IND-C ratings are for service where power and/or speed are cyclic. The horsepower and speed of the engine which can be utilized for one uninterrupted hour followed by one hour of operation at or below the continuous rating.

Operating limits are:

1. Time at full load not to exceed 50% of the duty cycle or one hour max.
2. Load factor limited to 70%.
3. Full load operation limited to one uninterrupted hour followed by one hour of operation at or below the continuous rating.
4. Typical operating hours per year is 3000 hours.

Examples of an IND-C industrial application are:

1. Agricultural tractors, harvesters, and combines
2. Truck – off highway
3. Fire pump application power (90% of certified power)
4. Blast hole drills
5. Rock crushers and wood chippers with high torque rise
6. Oil field hoisting

IND-B

IND-B ratings are for moderate-duty service where power and/or speed are cyclic.

Operating limits are:

1. Time at full load not to exceed 80% of the duty cycle.
2. Load factor limited to 85%.
3. Typical operating hours per year is 4000 hours.

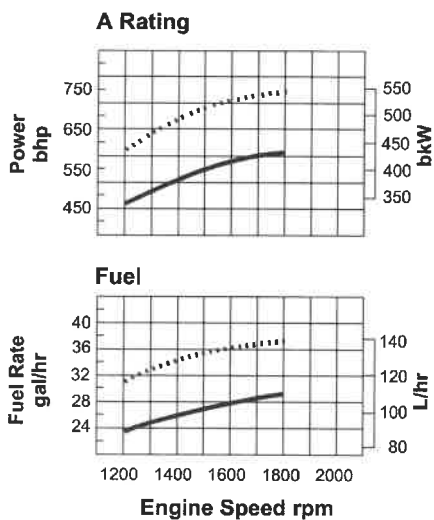
Examples of an IND-B industrial application are:

1. Irrigation where normal pump demand is 85% of engine rating
2. Oil field mechanical pumping/drilling
3. Stationary/plant air compressors

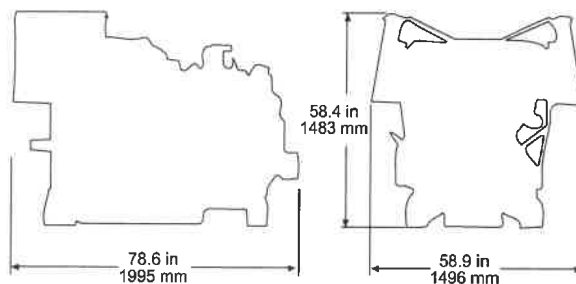
3412E INDUSTRIAL ENGINE



RATING CURVES



DIMENSIONS



INDUSTRIAL RATINGS (cont.)

IND-A (CONTINUOUS)

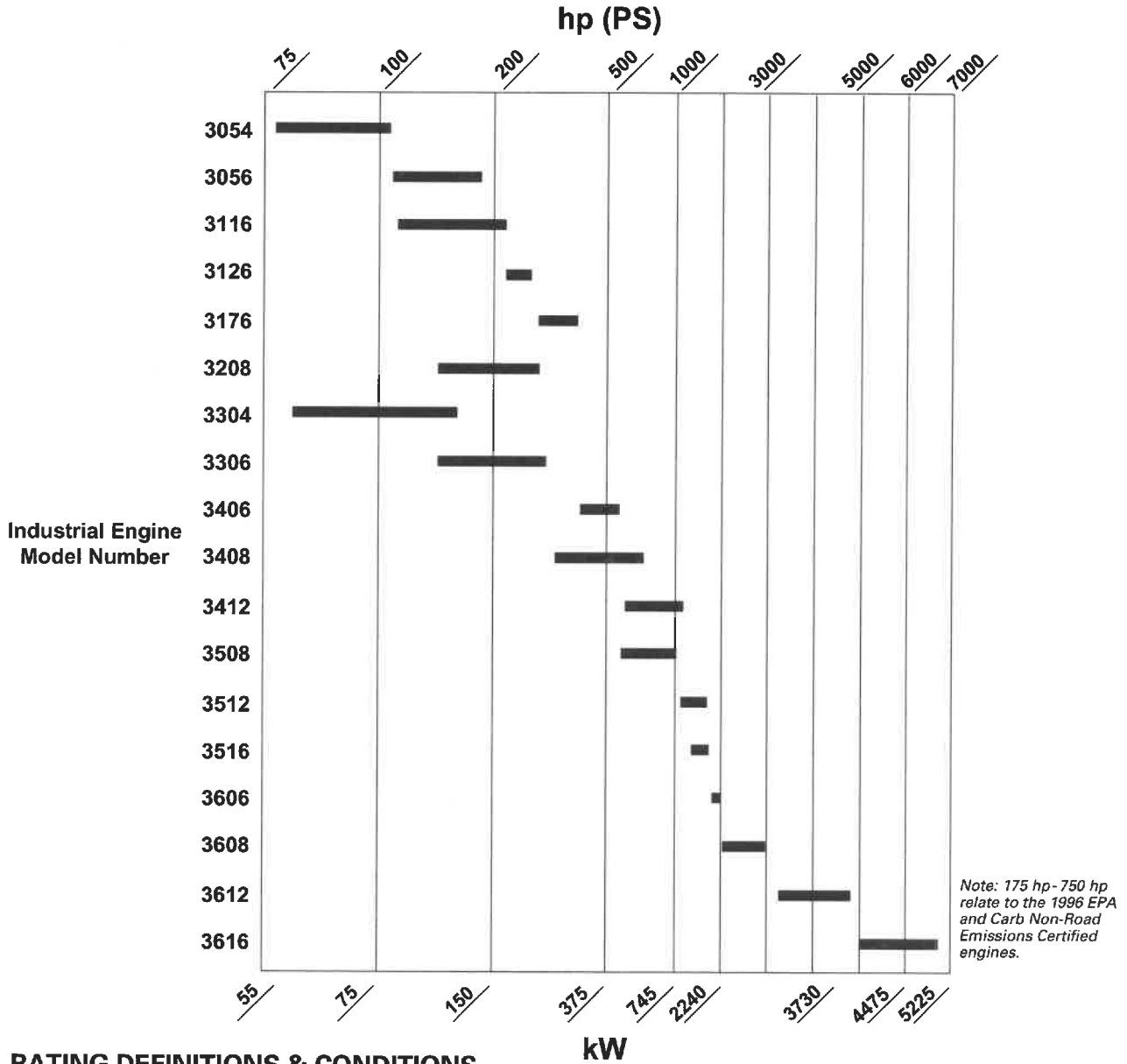
IND-A ratings are for heavy-duty service when the engine is operated at rated load and speed up to 100% of the time without interruption or load cycling. Operating limits are:

1. No hour or load factor limitation.
2. Continuous operation at full load.
3. Average load factor to approach 100%.
4. Typical operating hours per year is over 4000 hrs.

Examples of an IND-A industrial application are:

1. Pipeline pumping
2. Ventilation
3. Customer specs

Match a Reliable Cat[®] Diesel to Your Application.



RATING DEFINITIONS & CONDITIONS

Ratings are based on SAE J1349 standard conditions. These ratings also apply at ISO3046/1, DIN6271 and BS5514 standard conditions.

Additional ratings are available for specific customer requirements. Consult your Caterpillar dealer.

Fuel rates are based on ISO3046 and on fuel oil of 35° API (60° F or 16° C) gravity having an LHV of 18,390 Btu/lb (42 780 kJ/kg) when used at 85° F (29° C) and weighing 7.001 lbs/U.S. gal. (838.9 g/L).