

Pursuant to the authority vested in the Air Resources Board by Health and Safety Code (HSC) Division 26, Part 5, Chapter 2; and pursuant to the authority vested in the undersigned by HSC Sections 39515 and 39516 and Executive Order G-45-9; and

Pursuant to the December 15, 1998 Settlement Agreement between the Air Resources Board and the manufacturer, and any modifications thereof to the Settlement Agreement;

**IT IS ORDERED AND RESOLVED:** That the following engine and emission control systems produced by the manufacturer are certified as described below for use in on-road motor vehicles with a manufacturer's gross vehicle weight rating (GVWR) over 14,000 pounds. Production engines shall be in all material respects the same as those for which certification is granted.

MODEL YEAR	ENGINE FAMILY	ENGINE SIZE (liter)	FUEL TYPE	STANDARDS & TEST PROCEDURE	INTENDED SERVICE CLASS
2002	2CPXH0729ERK	11.9	Diesel	Diesel	Heavy-Heavy-Duty
SPECIAL FEATURES & EMISSION CONTROL SYSTEMS			ENGINE MODELS / CODES (rated power in horsepower, hp)		
DDI, TC, CAC, ECM			See Attachment		
<small>ABBREVIATIONS: OC=oxidizing catalyst TWC=three-way catalyst WU (prefix)=warm-up catalyst O2S=oxygen sensor HO2S=heated O2S TBI=throttle body fuel injection MFI=multport fuel injection SFI=sequentialMFI DDI/IDI=direct /indirect diesel injection TC/SC=turbo/super charger CAC=charge air cooler EGR=exhaust gas recirculation AIR=secondary air injection PAIR=pulsed AIR SP=smoke puff limiter ECM/PCM=engine /powertrain control module EM=engine modification 2 (prefix)=parallel (2) (suffix)=in series</small>					

The following are the exhaust emission standards (STD), or family emission limit(s) (FEL) as applicable, and certification levels (CERT) for this engine family for hydrocarbons (HC) or non-methane hydrocarbons (NMHC), oxides of nitrogen (NOx), or NMHC+NOx, carbon monoxide (CO), particulate matter (PM), and formaldehyde (HCHO) in grams per brake horsepower-hour (g/bhp-hr) under the "Federal Test Procedure" (FTP) (Title 13, California Code of Regulations, (13 CCR) Section 1956.1 (urban bus) or 1956.8 (other than urban bus)), and under the "Euro III Test Procedure" (EURO) in the Settlement Agreement, including a EURO's "Not-to-Exceed" NOx standard: (The emission standards and certification levels for default operations permitted under 13 CCR Section 1956.1 or 1956.8 are in parentheses.)

* = not applicable	EURO'S NOT-TO-EXCEED NOx STD												7.0	
	HC		NMHC		NOx		NMHC+NOx		CO		PM		HCHO	
	FTP	EURO	FTP	EURO	FTP	EURO	FTP	EURO	FTP	EURO	FTP	EURO	FTP	EURO
(DIRECT) STD	1.3	1.3	*	*	4.0	6.0	*	*	15.5	15.5	0.10	0.10	*	*
AVERAGE STD	*	*	*	*	*	*	*	*	*	*	*	*	*	*
FEL	*	*	*	*	*	*	*	*	*	*	*	*	*	*
CERT	0.2	0.1	*	*	3.6	4.8	*	*	1.0	0.5	0.07	0.04	*	*

**BE IT FURTHER RESOLVED:** That certification to the FEL(s) listed above, as applicable, is subject to the following terms, limitations and conditions. The FEL(s) is the emission level declared by the manufacturer and serves in lieu of an emission standard for certification purposes in any averaging, banking, or trading (ABT) programs. It will be used for determining compliance of any engine in this family and compliance with such ABT programs.

**BE IT FURTHER RESOLVED:** That for the listed engine models, the manufacturer has submitted the materials to demonstrate certification compliance with 13 CCR Sections 1965 (emission control labeling), and 2035 et seq. (emission control system warranty).

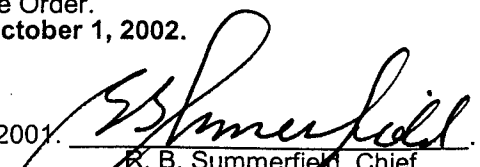
**BE IT FURTHER RESOLVED:** That the listed engine models are conditionally certified subject to the following conditions: (1) The Settlement Agreement is in effect; and, (2) The manufacturer is in compliance with all applicable certification requirements of the Settlement Agreement and any modifications thereof.

Engines certified under this Executive Order shall conform to all applicable California emission regulations and all requirements under the Settlement Agreement and any modifications thereof.

The Bureau of Automotive Repair will be notified by copy of this Executive Order.

**This Executive Order is not valid for engines produced on or after October 1, 2002.**

Executed at El Monte, California on this 20<sup>th</sup> day of December 2001.

  
 R. B. Summerfield, Chief  
 Mobile Source Operations Division

# Engine Model Summary Form

**Manufacturer:** CATERPILLAR INC.  
**Engine category:** On-highway HDDE  
**EPA Engine Family:** 2CPXH0729ERK  
**Mfr Family Name:** NA  
**Process Code:** New Submission

1. Engine Code	2. Engine Model	3. BHP@RPM (SAE Gross)	4. Fuel Rate: mm/stroke @ peak HP (for diesel only)	5. Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	6. Torque @ RPM (SEA Gross)	7. Fuel Rate: mm/stroke@peak torque	8. Fuel Rate: (lbs/hr)@peak torque	9. Emission Control Device Per SAE J1930
Cert Eng '96	C-12	455 @ 1800	229	138.6	1650 @ 1200	290	117.2	EM, DI, TC, ECM, CAC
1	C-12	430 @ 1800	235	142	1650 @ 1200	305	123	EM, DI, TC, ECM,
2	C-12	455 @ 1800	243	147	1550 @ 1200	297	120	EM, DI, TC, ECM,
3	C-12	445 @ 1800	238	144	1650 @ 1200	302	122	EM, DI, TC, ECM,
4	C-12	380 @ 1800	211	128	1450 @ 1200	258	104	EM, DI, TC, ECM,
5	C-12	430 @ 1800	236	143	1650 @ 1200	305	123	EM, DI, TC, ECM,
6	C-12	410 @ 1800	230	139	1550 @ 1200	282	114	EM, DI, TC, ECM,
7	C-12	410 @ 1800	228	138	1450 @ 1200	260	105	EM, DI, TC, ECM,
8	C-12	410 @ 1800	231	140	1550 @ 1200	282	114	EM, DI, TC, ECM,
9	C-12	410 @ 1800	231	140	1550 @ 1200	282	114	EM, DI, TC, ECM,
10	C-12	410 @ 1800	228	138	1450 @ 1200	260	105	EM, DI, TC, ECM,
11	C-12	425 @ 1800	225	136	1550 @ 1200	277	112	EM, DI, TC, ECM,
12	C-12	425 @ 1800	231	140	1450 @ 1200	273	110	EM, DI, TC, ECM,
13	C-12	425 @ 1800	225	136	1550 @ 1200	277	112	EM, DI, TC, ECM,
14	C-12	425 @ 1800	226	137	1450 @ 1200	265	107	EM, DI, TC, ECM,
15	C-12	425 @ 1800	226	137	1450 @ 1200	265	107	EM, DI, TC, ECM,
16	C-12	395 @ 1800	223	135	1450 @ 1200	263	106	EM, DI, TC, ECM,
17	C-12	405 @ 1800	218	132	1550 @ 1200	287	116	EM, DI, TC, ECM,
18	C-12	410 @ 1800	220	133	1450 @ 1200	263	106	EM, DI, TC, ECM,
19	C-12	380 @ 1800	216	131	1450 @ 1200	265	107	EM, DI, TC, ECM,
20	C-12	395 @ 1800	210	127	1450 @ 1200	260	105	EM, DI, TC, ECM,
21	C-12	355 @ 1800	205	124	1350 @ 1200	245	99	EM, DI, TC, ECM,
22	C-12	370 @ 1800	195	118	1350 @ 1200	243	98	EM, DI, TC, ECM,
23	C-12	425 @ 1800	225	136	1550 @ 1200	277	112	EM, DI, TC, ECM,
24	C-12	355 @ 1800	201	122	1350 @ 1200	243	98	EM, DI, TC, ECM,
25	C-12	380 @ 1800	211	128	1450 @ 1200	258	104	EM, DI, TC, ECM,
26	C-12	355 @ 1800	201	122	1350 @ 1200	243	98	EM, DI, TC, ECM,
27	C-12	370 @ 1800	195	118	1350 @ 1200	243	98	EM, DI, TC, ECM,
28	C-12	370 @ 1800	195	118	1350 @ 1200	243	98	EM, DI, TC, ECM,
29	C-12	410 @ 1800	228	138	1650 @ 1200	260	105	EM, DI, TC, ECM,
30	C-12	410 @ 1800	230	139	1650 @ 1200	282	114	EM, DI, TC, ECM,
31	C-12	425 @ 1800	226	137	1450 @ 1200	265	107	EM, DI, TC, ECM,

ATTACHMENT

A-13-149

EM, TC, ECM,  
 EM, TC, ECM,  
 EM, DI, TC, ECM,  
 EM, DI, TC, ECM,

(ECM, DPI, TC, CAC)

32	C	C - 12	425 @ 1800	225	1550 @ 1200	277	112	EM, TC, ECM,
33		C - 12	430 @ 1800	235	1650 @ 1200	305	123	EM, TC, ECM,
34		C - 12	445 @ 1800	238	1650 @ 1200	302	122	EM, DI, TC, ECM,
35		C - 12	505 @ 1800	271	1550 @ 1200	290	117	EM, DI, TC, ECM,

C

112  
123  
122  
117

277  
305  
302  
290

1550 @ 1200  
1650 @ 1200  
1650 @ 1200  
1550 @ 1200

225  
235  
238  
271

425 @ 1800  
430 @ 1800  
445 @ 1800  
505 @ 1800

C - 12  
C - 12  
C - 12  
C - 12

32  
33  
34  
35