California Environmental Protection Agency Air Resources Board	CUMMINS INC.	EXECUTIVE ORDER U-R-002-0634 New Off-Road Compression-Ignition Engines

Pursuant to the authority vested in the Air Resources Board by Sections 43013, 43018, 43101, 43102, 43104 and 43105 of the Health and Safety Code; and

Pursuant to the authority vested in the undersigned by Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-14-012;

IT IS ORDERED AND RESOLVED: That the following compression-ignition engines and emission control systems produced by the manufacturer are certified as described below for use in off-road equipment. Production engines shall be in all material respects the same as those for which certification is granted.

MODEL YEAR	ENGINE FAMILY	DISPLACEMENT (liters)	FUEL TYPE	USEFUL LIFE (hours)
2016	GCEXL15.0AAL	15.0	Diesel	8000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Electronic Direct Injection, Turbocharger, Charge Air Cooler, Electronic Control Module, Exhaust Gas Recirculation, Periodic Trap Oxidizer, Diesel Oxidation Catalyst, Selective Catalytic Reduction – Urea, Ammonia Oxidation Catalyst	Crane, Loader, Tractor, Dozer, Pump, Compressor, and Generator Set

The engine models and codes are attached.

The following are the exhaust certification standards (STD) and certification levels (CERT) for hydrocarbon (HC), oxides of nitrogen (NOx), or non-methane hydrocarbon plus oxides of nitrogen (NMHC+NOx), carbon monoxide (CO), and particulate matter (PM) in grams per kilowatt-hour (g/kw-hr), and the opacity-of-smoke certification standards and certification levels in percent (%) during acceleration (Accel), lugging (Lug), and the peak value from either mode (Peak) for this engine family (Title 13, California Code of Regulations, (13 CCR) Section 2423):

RATED POWER CLASS	EMISSION STANDARD CATEGORY		EXHAUST (g/kw-hr)					OPACITY (%)		
			NMHC	NOx	NMHC+NOx	CO	PM	ACCEL	LUG	PEAK
130 ≤ kW ≤ 560	Tier 4 Final	STD	0.19	0.40	N/A	3.5	0.02	N/A	N/A	N/A
		CERT	0.001	0.17	--	0.00	0.003	--	--	--

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has submitted the information and materials to demonstrate certification compliance with 13 CCR Section 2424 (emission control labels), and 13 CCR Sections 2425 and 2426 (emission control system warranty).

Engines certified under this Executive Order must conform to all applicable California emission regulations.

This Executive Order is only granted to the engine family and model-year listed above. Engines in this family that are produced for any other model-year are not covered by this Executive Order.

Executed at El Monte, California on this 7th day of October 2015.

FOR Annette Hebert, Chief
Emissions Compliance, Automotive Regulations and Science Division

Engine Model Summary Template

U-R-002-0634 Attachment B 1/2 4/5/2016

Engine Family	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
GCEXL15.0AAL	43869:FR11120	QSX15	500@1800	279	169	1600@1400	299	141	DDI,ECM,TC, CAC, EGR , DOC, DPF, SCR
GCEXL15.0AAL	43869:FR11119	QSX15	525@1800	293	178	1750@1400	325	153	DDI,ECM,TC, CAC, EGR , DOC, DPF, SCR
GCEXL15.0AAL	43869:FR11118	QSX15	550@1800	308	187	1750@1400	325	153	DDI,ECM,TC, CAC, EGR , DOC, DPF, SCR
GCEXL15.0AAL	43869:FR11117	QSX15	575@1800	322	196	1950@1400	372	176	DDI,ECM,TC, CAC, EGR , DOC, DPF, SCR
GCEXL15.0AAL	43869:FR11116	QSX15	600@1800	338	205	2050@1400	391	185	DDI,ECM,TC, CAC, EGR , DOC, DPF, SCR
GCEXL15.0AAL	43869:FR11115	QSX15	625@1800	354	215	2050@1400	391	185	DDI,ECM,TC, CAC, EGR , DOC, DPF, SCR
GCEXL15.0AAL	43869:FR11114	QSX15	450@2100	279	169	1700@1400	315	149	DDI,ECM,TC, CAC, EGR , DOC, DPF, SCR
GCEXL15.0AAL	43869:FR11113	QSX15	500@2100	307	187	1850@1400	349	165	DDI,ECM,TC, CAC, EGR , DOC, DPF, SCR
GCEXL15.0AAL	43869:FR11112	QSX15	535@2100	325	197	1950@1400	372	176	DDI,ECM,TC, CAC, EGR , DOC, DPF, SCR
GCEXL15.0AAL	43869:FR11111	QSX15	550@2100	341	207	1950@1400	372	176	DDI,ECM,TC, CAC, EGR , DOC, DPF, SCR

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Engine Model Summary Template

U-R-002-0634 Attachment B 2/2 4/5/2016

Engine Family	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
GCEXL15.0AAL	43869:FR11110	QSX15	600@2100	331	212	2050@1400	391	185	DDI,ECM,TC, CAC, EGR , DOC, DPF, SCR
GCEXL15.0AAL	43869:FR11109	QSX15	630@2100	343	220	2050@1400	391	185	DDI,ECM,TC, CAC, EGR , DOC, DPF, SCR
GCEXL15.0AAL	43869:FR11108	QSX15	650@2100	355	228	2050@1400	391	185	DDI,ECM,TC, CAC, EGR , DOC, DPF, SCR
GCEXL15.0AAL	43869:FR11042	QSX15	675@2100	368	236	2050@1400	391	185	DDI,ECM,TC, CAC, EGR , DOC, DPF, SCR
GCEXL15.0AAL	43961:FR11130	QSX15	562@2100	350	212	1960@1600	376	203	DDI,ECM,TC, CAC, EGR , DOC, DPF, SCR
GCEXL15.0AAL	43961:FR11129	QSX15	587@2100	341	219	1960@1600	376	203	DDI,ECM,TC, CAC, EGR , DOC, DPF, SCR
GCEXL15.0AAL	43961:FR11107	QSX15	611@2100	376	228	2086@1600	397	214	DDI,ECM,TC, CAC, EGR , DOC, DPF, SCR
GCEXL15.0AAL	43961:FR11106	QSX15	636@2100	366	234	2086@1600	397	214	DDI,ECM,TC, CAC, EGR , DOC, DPF, SCR
GCEXL15.0AAL	43869:FR11194	QSX15	605@2100	370	224	2050@1400	391	185	DDI,ECM,TC, CAC, EGR , DOC, DPF, SCR
GCEXL15.0AAL	43869;FR11391	QSX15	470@2000	312	163	1700@1400	278	169	DDI,ECM,TC, CAC, EGR , DOC, DPF, SCR

Amended

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