California Environmental Protection Agency AIR RESOURCES BOARD YANMAR CO., LTD.	EXECUTIVE ORDER U-R-028-0394 New Off-Road Compression-Ignition Engines
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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-02-003;

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.

	DISPLACEMENT (liters)	FUEL TYPE	USEFUL LIFE (hours)		
8YDXL1.64J3N	1.642	Diesel	3000		
Direct Diesel Inje	ction	Generator Set			
	8YDXL1.64J3N	ENGINE FAMILY (liters) 8YDXL1.64J3N 1.642	ENGINE FAMILY (liters) FUEL TYPE 8YDXL1.64J3N 1.642 Diesel EATURES & EMISSION CONTROL SYSTEMS TYPICAL EQUIPMENT A		

The engine models and codes are attached.

The following are the exhaust certification standards (STD) and certification levels (CERT) for hydrocarbons (HC), oxides of nitrogen (NOx), or non-methane hydrocarbons 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 EMISSION			EXHAUST (g/kW-hr)				OPACITY (%)			
	STANDARD CATEGORY		НС	NOx	NMHC+NOx	со	PM	ACCEL	LUG	PEAK
8 ≤ kW < 19	Tier 4	STD	N/A	N/A	7.5	6.6	0.40	N/A	N/A	N/A
		CERT			6.3	3.2	0.26			

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

 30^{-1} day of November 2007.

nnette Hebert, Chief Mobile Source Operations Division

Engine Model Summary Template

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ol 930		
8.Fuel Rate: 9.Emission Control (lbs/hr)@peak torqueDevice Per SAE <u>11930</u>	EM DI	EM DI
8.Fuel Rate: (lbs/hr)@peak torqu	N/A	N/A
7.Fuel Rate: mm/stroke@peak torque	N/A	N/A
6.Torque @ RPM (SEA Gross)	N/A	N/A
5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	9.5	8.8
4. Fuel Rate: 5. Fuel Rate: mm/stroke @ peak HP (lbs/hr) @ peak HP (for diesel only) (for diesels only)	31.8	29.7
3.BHP@RPM (SAE Gross)	24.1/1800	22.7/1800
3.внр@RPM Engine Family 1. Engine Code 2. Engine Model (SAE Gross)	3TNV88-CL	3KNGA
1.Engine Code	N/A	NA
Engine Family	8YDXL1.64J3N	8YDXL1.64J3N