CALIFORNIA AIR RESOURCES BOARD	**DOOSAN INFRACORE CO., LTD.**	**EXECUTIVE ORDER U-R-019-0188** New Off-Road Compression-Ignition Engines

Pursuant to the authority vested in California 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-19-095;

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)
2021	MDICL03.4LED	3.4	Diesel	8000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Diesel Oxidation Catalyst, Electronic Direct Injection, Selective Catalyst Reduction-Urea, Turbocharger, Charge Air Cooler, Electronic Control Module, DEF Quality Sensor	Loader, Tractor, Compressor, Generator Set, Excavator, Forklift

The engine models and codes are attached.

The following are the exhaust certification standards (STD) and certification levels (CERT) for non-methane hydrocarbon (NMHC), 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
56 ≤ kW < 130	Tier 4 Final	**STD**	0.19	0.40	N/A	5.0	0.02	N/A	N/A	N/A
		CERT	0.03	0.22	--	0.03	0.02	--	--	--

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).

BE IT FURTHER RESOLVED: That for the listed engine models which include engines from different power categories in the same engine family, the manufacturer is complying with the more stringent set of standards from the 56 ≤ kW < 130 power categories in conformance with the incorporated Section 1039.230 (e) of the "California Exhaust Emission Standards and Test Procedures for New 2011 and Later Tier 4 Off-Road Compression Ignition Engines, Part 1-D" adopted October 20, 2005 and last amended October 25, 2012.

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 on this 18th day of December 2020.

Allen Lyons, Chief
Emissions Certification and Compliance Division

Attachment: Engine Models **EO #:** U-R-019-0188 **Family:** MDICL03.4LED **Attachment Last Revised:** 12/3/2020

Model	Code	Trim	Config	Displacement	Displacement - Units	Peak Power	Peak Power - Units	Peak Power - Speed (rpm)	Peak Power - Fueling	Peak Power - Fuel Units	Peak Torque	Peak Torque - Units	Peak Torque - Speed (rpm)	Peak Torque - Fuel	Peak Torque - Fuel Units	OBD	GHG	Special	Notes
DM03PA	DM03-LEL05	N/A	I4	3.4	Liters	100.7	kilowatt	2600	85.3	mm3/stroke	550	N-m	1400	117.6	mm3/stroke	N/A	N/A	N/A	DOC, DFI, SCR-U, TC, CAC, ECM, DQS
DM03PA	DM03-LEP00	N/A	I4	3.4	Liters	100.7	kilowatt	2600	85.3	mm3/stroke	550	N-m	1400	105	mm3/stroke	N/A	N/A	N/A	DOC, DFI, SCR-U, TC, CAC, ECM, DQS
DM03PA	DM03-LEP01	N/A	I4	3.4	Liters	85.8	kilowatt	2600	75.3	mm3/stroke	445	N-m	1600	96.3	mm3/stroke	N/A	N/A	N/A	DOC, DFI, SCR-U, TC, CAC, ECM, DQS
DM03PA	DM03-LEP02	N/A	I4	3.4	Liters	78.3	kilowatt	2600	67.4	mm3/stroke	407	N-m	1600	87.1	mm3/stroke	N/A	N/A	N/A	DOC, DFI, SCR-U, TC, CAC, ECM, DQS
DM03PA	DM03-LEP03	N/A	I4	3.4	Liters	71.6	kilowatt	2600	62.4	mm3/stroke	372	N-m	1600	78.7	mm3/stroke	N/A	N/A	N/A	DOC, DFI, SCR-U, TC, CAC, ECM, DQS
DM03PP	DM03-LEG00	N/A	I4	3.4	Liters	92.4	kilowatt	1800	104.8	mm3/stroke	490	N-m	1800	104.8	mm3/stroke	N/A	N/A	N/A	DOC, DFI, SCR-U, TC, CAC, ECM, DQS
DM03PP	DM03-LEG00	N/A	I4	3.4	Liters	78.1	kilowatt	1500	105.3	mm3/stroke	497	N-m	1500	105.3	mm3/stroke	N/A	N/A	N/A	DOC, DFI, SCR-U, TC, CAC, ECM, DQS
DM03PA	DM03-LEV01	N/A	I4	3.4	Liters	74.6	kilowatt	2400	69.3	mm3/stroke	430	N-m	1400	92.4	mm3/stroke	N/A	N/A	N/A	DOC, DFI, SCR-U, TC, CAC, ECM, DQS
DM03PA	DM03-LEV02	N/A	I4	3.4	Liters	100.7	kilowatt	2400	89.6	mm3/stroke	500	N-m	1400	105	mm3/stroke	N/A	N/A	N/A	DOC, DFI, SCR-U, TC, CAC, ECM, DQS
DM03PA	DM03-LEF02	N/A	I4	3.4	Liters	80.9	kilowatt	2300	74.8	mm3/stroke	460	N-m	1400	83.5	mm3/stroke	N/A	N/A	N/A	DOC, DFI, SCR-U, TC, CAC, ECM, DQS