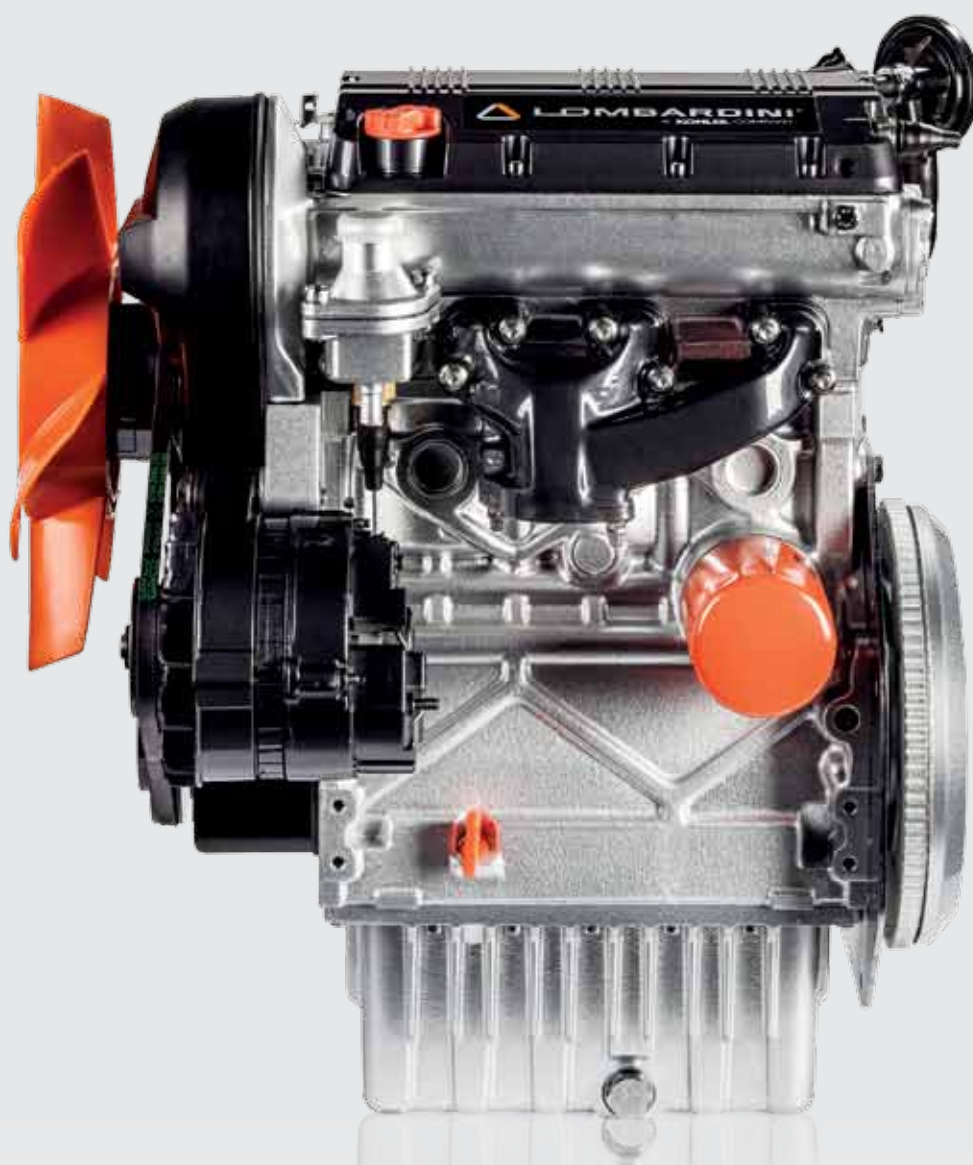


Water cooled Diesel engines

8.6-26.0 kW



 **LOMBARDINI**[®]
A KOHLER COMPANY

WATER COOLED DIESEL ENGINES

8.6-26.0 KW

STANDARD EQUIPMENT

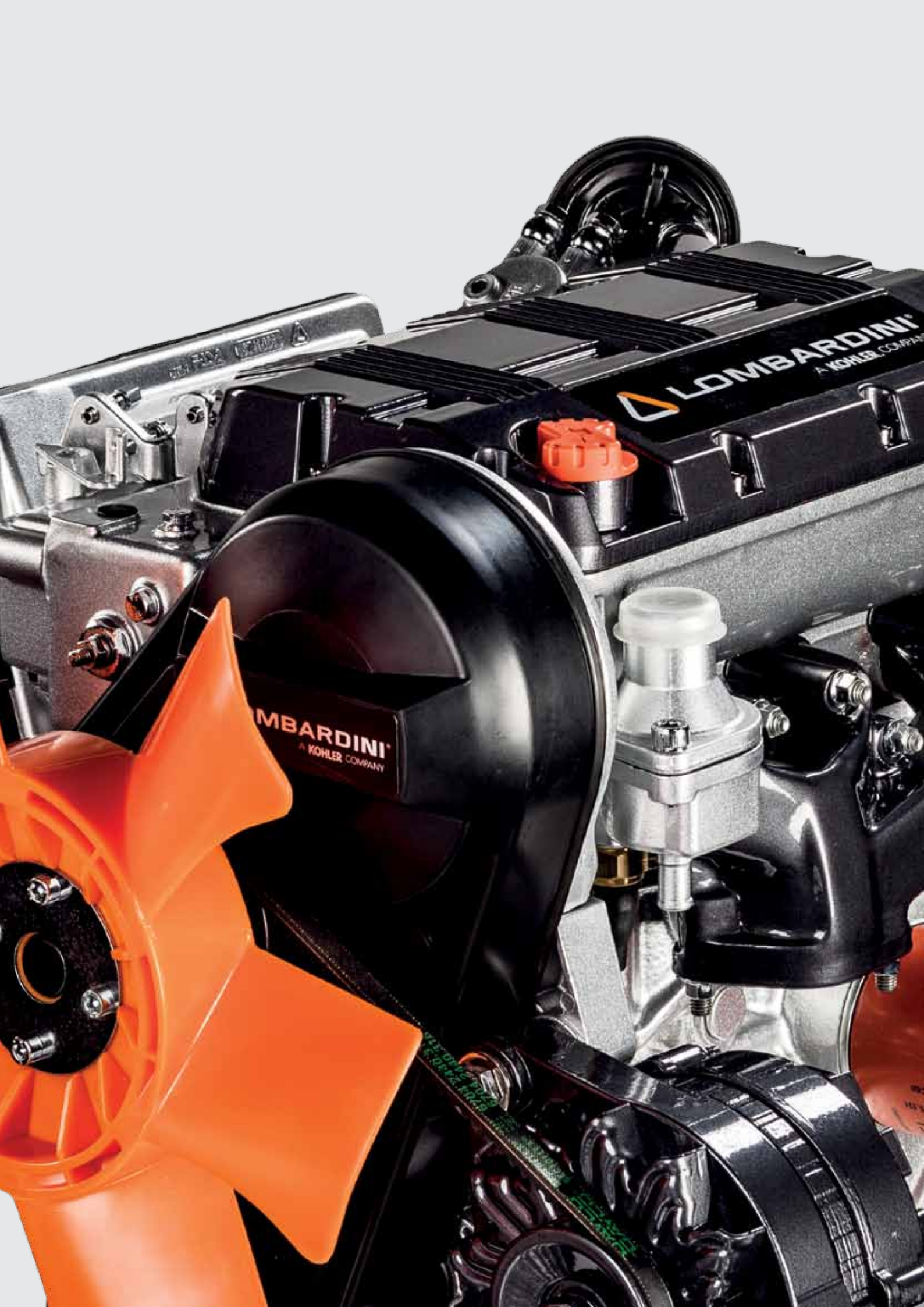
- External oil filter
- Exhaust manifold
- Intake manifold
- Intake fan
- Accelerator control
- Electric starter and 12V alternator
- Thermostatic valve
- Flywheel with ring gear
- Fuel feed diaphragm pump
- Starter plate
- Water pump
- Flanging plate
- Electric stop
- Electronic plant for plugs
- Alternators 12V or 24V
- Fuel filter on engine
- User maintenance & spare parts booklet

ACCESSORIES ON DEMAND

- Different guards according to use
- Clutch flywheels
- Flanges
- Transmission adaptors
- Keyswitch panel
- Radiators
- Blowing fan
- Engine feet
- Fuel tanks
- Mufflers
- Dry air cleaners mounted and separated
- Cyclonic precleaners
- High capacity oil sumps*
- Cab heating system
- Hydraulic pump adaptors
- Vacuum system adaptors
- Electrical fuel feeding pump

* Not on LDW502 model





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111E-01112 P1228
E-01-02 1112-0

LDW 502

QUICK SPECIFICS

2
CYLINDERS

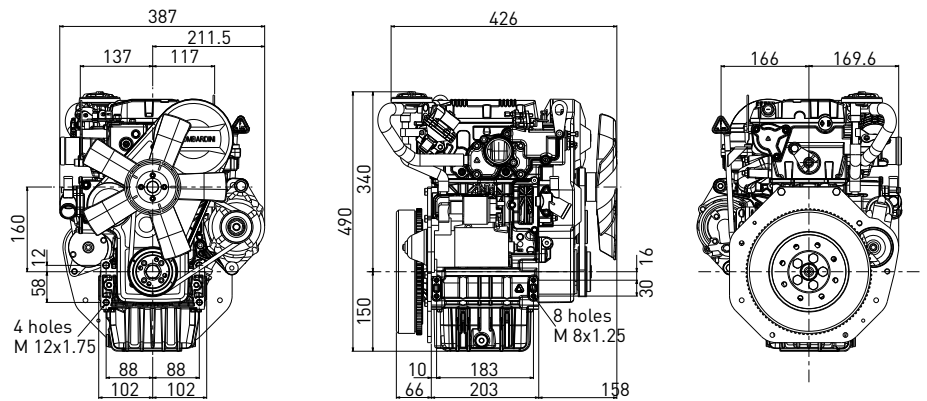
11.5 | **8.6** @ 3600 rpm
HP | kW

24.5 @ 2200 rpm
Nm

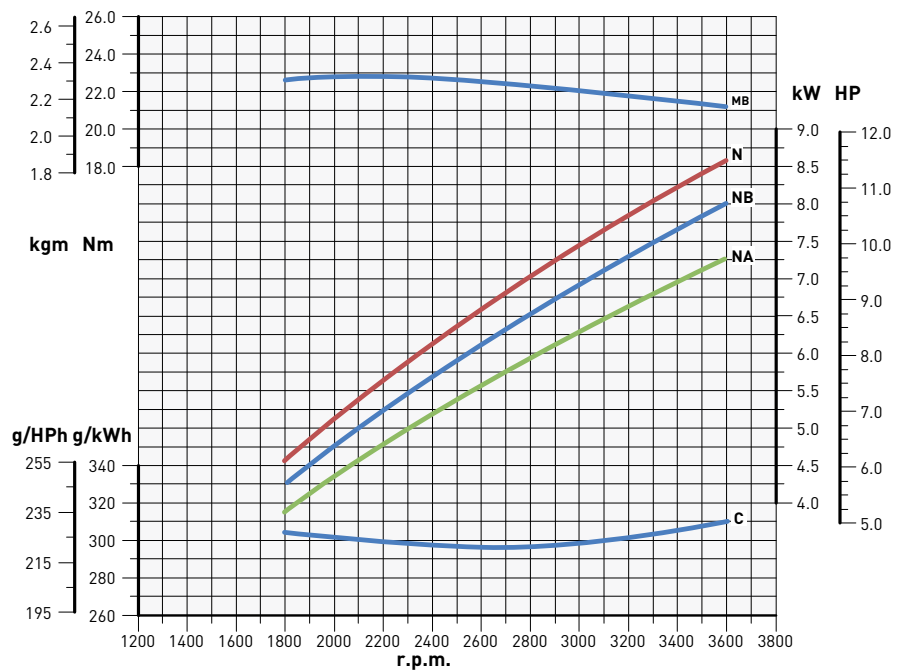


DATA

DIMENSIONS (mm)



PERFORMANCE CURVES (IFN- ISO 3046 AND ISO 14396)



N - Power curve - 80/1269/CE E-ISO 1585

MB - Torque curve - (NB curve)

NB - Power curve - ISO 3046/1 -IFN

C - Specific fuel consumption - (NB curve)

NA - Power curve - ISO 3046/1 - ICXN

Power ratings refer to engines equipped with air filter, standard muffler, after running-in period at ambient conditions of +25°C, relative humidity 30% and 1 bar. Power levels drop by 1% every 100 m altitude and by 2% every 5°C above +25°C.

LDW 702



QUICK SPECIFICS

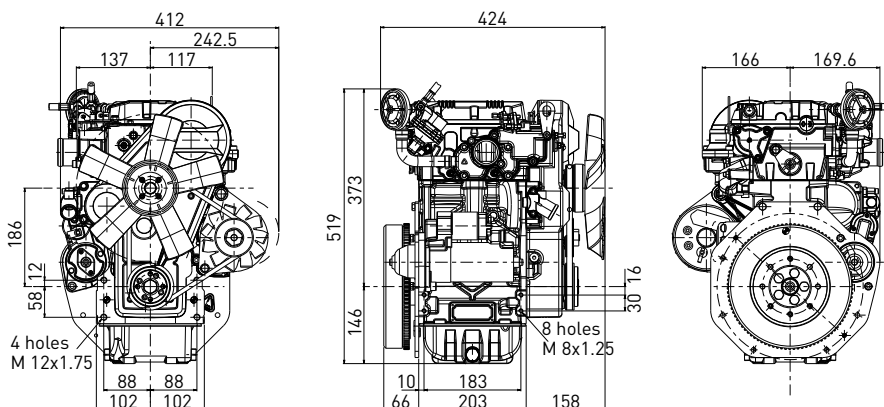
2
CYLINDERS

16.8 | **12.5** @ 3600 rpm
HP | kW

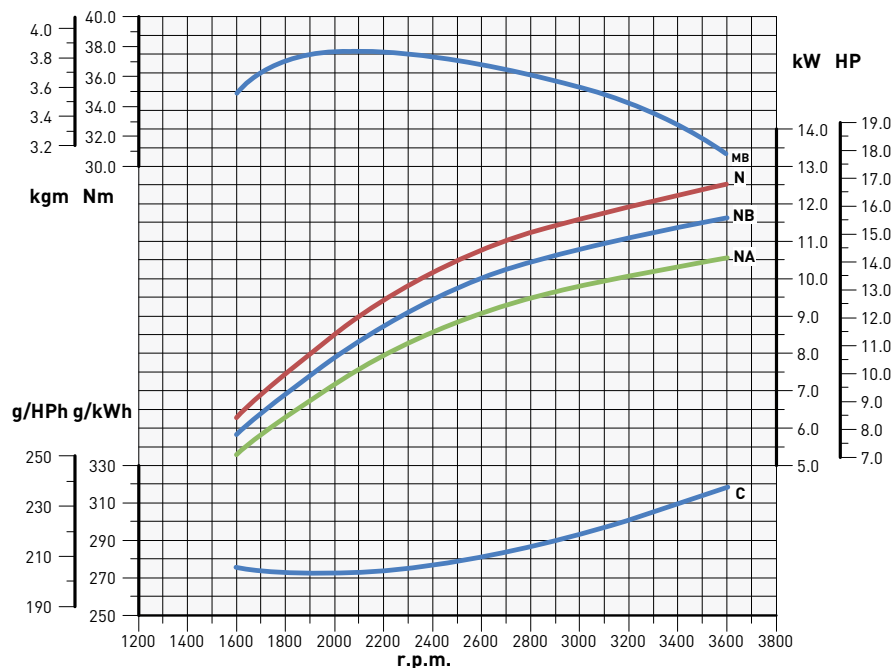
40.5 @ 2000 rpm
Nm

DATA

DIMENSIONS (mm)



PERFORMANCE CURVES (IFN- ISO 3046 AND ISO 14396)



SETTING @ 3000 RPM

Power max. NB* (kW)	Torque max. (Nm)
10.5 @ 3000 rpm	38.5 @ 2200 rpm

- N** - Power curve - 80/1269/CE E-ISO 1585
- NB** - Power curve - ISO 3046/1 - IFN
- NA** - Power curve - ISO 3046/1 - ICXN
- MB** - Torque curve - (NB curve)
- C** - Specific fuel consumption - (NB curve)

Power ratings refer to engines equipped with air filter, standard muffler, after running-in period at ambient conditions of +25°C, relative humidity 30% and 1 bar. Power levels drop by 1% every 100 m altitude and by 2% every 5°C above +25°C.

LDW 1003

QUICK SPECIFICS

3
CYLINDERS

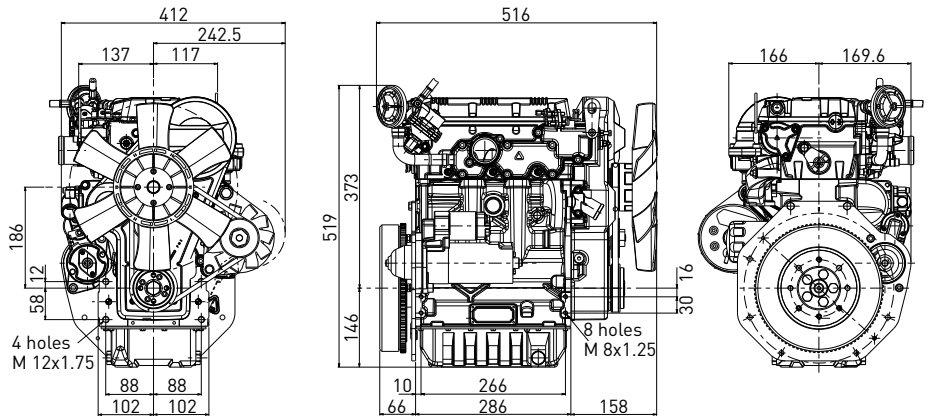
26.1 | **19.5** @ 3600 rpm
HP kW

67 @ 2000 rpm
Nm



DATA

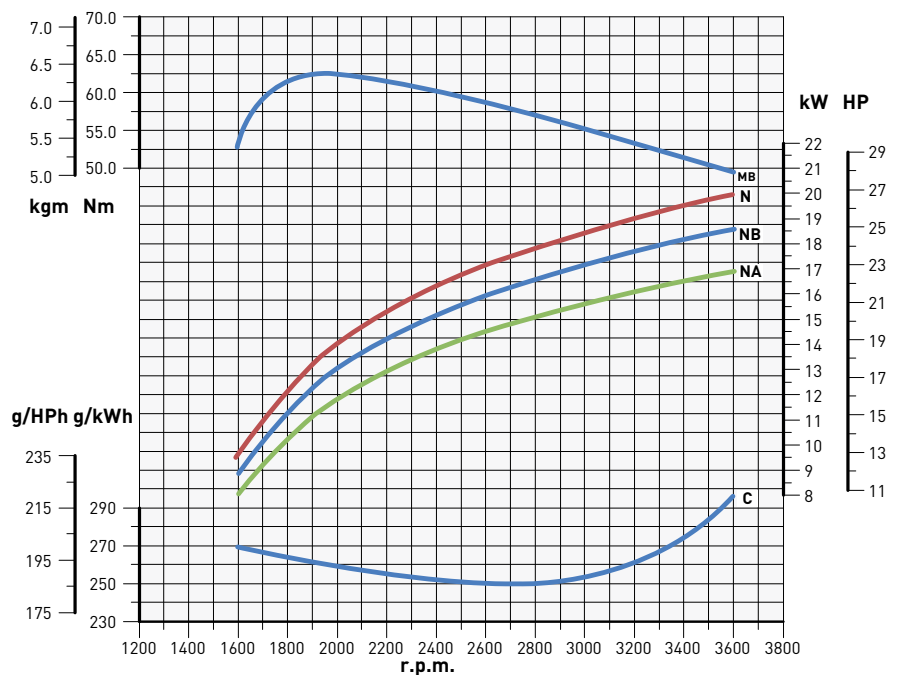
DIMENSIONS (mm)



OTHER AVAILABLE SETTINGS

Power max. N* (kW)	Torque max. (Nm)
16.2 @ 3000 rpm	59 @ 2000 rpm
13.5 @ 2500 rpm	57.5 @ 1700 rpm

PERFORMANCE CURVES (IFN- ISO 3046 AND ISO 14396)



- N - Power curve - 80/1269/CE E-ISO 1585
- NB - Power curve - ISO 3046/1 -IFN
- NA - Power curve - ISO 3046/1 - ICXN
- MB - Torque curve - (NB curve)
- C - Specific fuel consumption - (NB curve)

Power ratings refer to engines equipped with air filter, standard muffler, after running-in period at ambient conditions of +25°C, relative humidity 30% and 1 bar. Power levels drop by 1% every 100 m altitude and by 2% every 5°C above +25°C.

LDW 1404



QUICK SPECIFICS

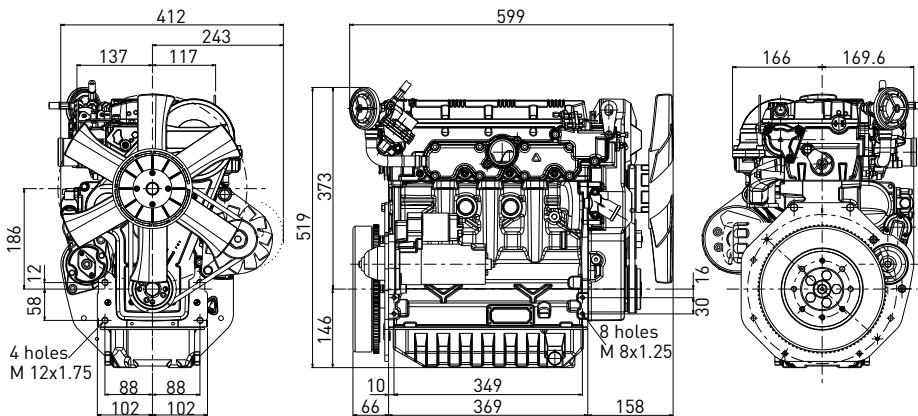
4
CYLINDERS

34.8 | **26** @ 3600 rpm
HP kW

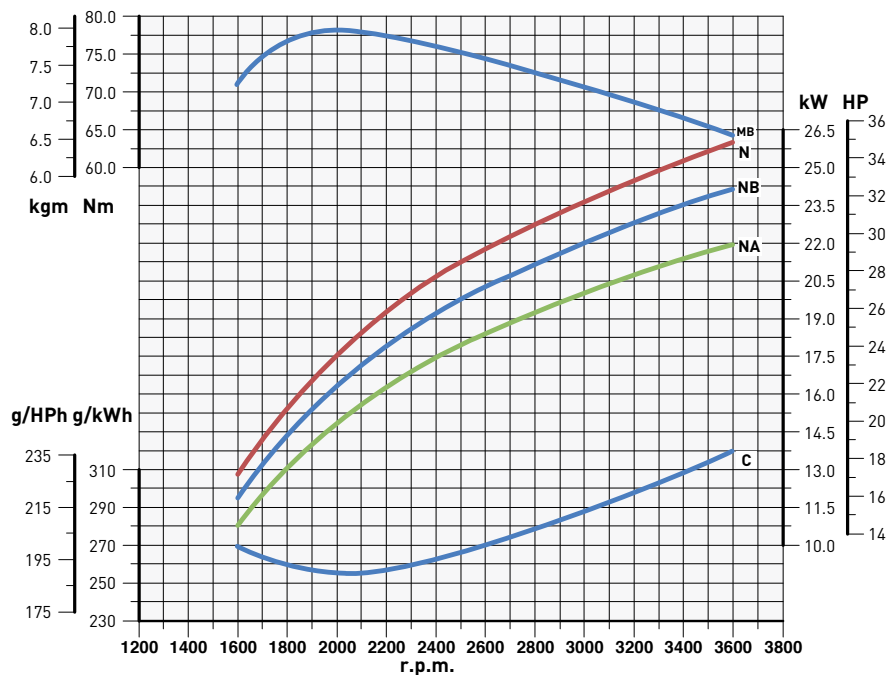
84 @ 2000 rpm
Nm

DATA

DIMENSIONS (mm)



PERFORMANCE CURVES (IFN- ISO 3046 AND ISO 14396)



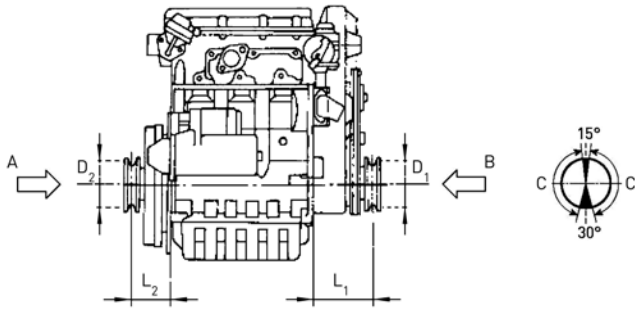
N - Power curve - 80/1269/CE E-ISO 1585
NB - Power curve - ISO 3046/1 - IFN
NA - Power curve - ISO 3046/1 - ICXN
MB - Torque curve - (NB curve)
C - Specific fuel consumption - (NB curve)

Power ratings refer to engines equipped with air filter, standard muffler, after running-in period at ambient conditions of +25°C, relative humidity 30% and 1 bar. Power levels drop by 1% every 100 m altitude and by 2% every 5°C above +25°C.

OTHER AVAILABLE SETTINGS

Power max. N* (kW)	Torque max. (Nm)
21.8 @ 3000 rpm	77.5 @ 1900 rpm
18 @ 2500 rpm	76 @ 1600 rpm

APPLICATIONS SPECS



LDW 502

Minimum pulley diameters for belt drive

$$V \text{ BELT} \quad D_2 \text{ (mm)} \geq 85 [191 + L_2 \text{ (mm)}] \frac{N \text{ (HP)}}{n \text{ (rpm)}}$$

$$COGGED \text{ BELT} \quad D_1 \text{ (mm)} \geq 65 [191 + L_1 \text{ (mm)}] \frac{N \text{ (HP)}}{n \text{ (rpm)}}$$

Max intermittent axial load in both directions A-B= 300 kg
C - Zone in which the radial loads can be applied

LDW 702

Minimum pulley diameters for belt drive

$$V \text{ BELT} \quad D_2 \text{ (mm)} \geq 143 [101 + L_2 \text{ (mm)}] \frac{N \text{ (HP)}}{n \text{ (rpm)}}$$

$$COGGED \text{ BELT} \quad D_1 \text{ (mm)} \geq 99 [101 + L_1 \text{ (mm)}] \frac{N \text{ (HP)}}{n \text{ (rpm)}}$$

Max intermittent axial load in both directions A-B= 300 kg
C - Zone in which the radial loads can be applied

LDW 1003

Minimum pulley diameters for belt drive

$$V \text{ BELT} \quad D_2 \text{ (mm)} \geq 114 [101 + L_2 \text{ (mm)}] \frac{N \text{ (HP)}}{n \text{ (rpm)}}$$

$$COGGED \text{ BELT} \quad D_1 \text{ (mm)} \geq 79 [101 + L_1 \text{ (mm)}] \frac{N \text{ (HP)}}{n \text{ (rpm)}}$$

Max intermittent axial load in both directions A-B= 300 kg
C - Zone in which the radial loads can be applied

LDW 1404

Minimum pulley diameters for belt drive

$$V \text{ BELT} \quad D_2 \text{ (mm)} \geq 110 [101 + L_2 \text{ (mm)}] \frac{N \text{ (HP)}}{n \text{ (rpm)}}$$

$$COGGED \text{ BELT} \quad D_1 \text{ (mm)} \geq 72 [101 + L_1 \text{ (mm)}] \frac{N \text{ (HP)}}{n \text{ (rpm)}}$$

Max intermittent axial load in both directions A-B= 300 kg
C - Zone in which the radial loads can be applied

GENSET RATINGS

Freq.	Rpm	Engine model	NET ENGINE POWER*		ELECTRICAL POWER**				Flanging	Max. Emission compliance available***
			Stand-by	Prime	Intermittent (Stand-by)		Continuous (Prime)			
			kW-HP	kW-HP	kVA	kW	kVA	kW		
50 Hz	1500	LDW 702	5,5 - 6,8	5,0 - 7,5	5,5	4,4	5,0	4,0	SAE 5 - 6,5"	EU not required
		LDW 1003	8,5 - 10,5	7,7 - 11,6	9,0	7,2	8,2	6,5	SAE 5 - 6,5"	EU not required
		LDW 1404	11,5 - 14,3	10,5 - 15,6	12,2	9,8	11,2	8,9	SAE 5 - 6,5"	EU not required
	3000	LDW 702	11,0 - 15,0	10,0 - 13,6	11,7	9,4	10,6	8,5	SAE 5 - 6,5"	EU not required
		LDW 1003	16,5 - 22,4	15,0 - 20,4	17,5	14,0	15,9	12,8	SAE 5 - 6,5"	EU not required
		LDW 1404	22,0 - 29,9	20,0 - 27,2	23,4	18,7	21,3	17,0	SAE 5 - 6,5"	EU Stage III A
60 Hz	1800	LDW 702	6,5 - 8,8	5,9 - 8,0	6,9	5,5	6,3	5,0	SAE 5 - 6,5"	Tier 4 F
		LDW 1003	10,0 - 13,6	9,1 - 12,4	10,6	8,5	9,7	7,7	SAE 5 - 6,5"	Tier 4 F
		LDW 1404	13,5 - 18,4	12,3 - 16,7	14,3	11,5	13,1	10,4	SAE 5 - 6,5"	Tier 4 F
	3600	LDW 702	11,7 - 16,0	10,6 - 14,5	12,2	9,9	11,0	9,0	SAE 5 - 6,5"	Tier 4 F
		LDW 1003	18,0 - 24,5	16,4 - 22,3	19,1	15,3	17,4	13,9	SAE 5 - 6,5"	Tier 4 F
		LDW 1404	24,5 - 33,3	22,3 - 30,3	26,0	20,8	23,7	18,9	SAE 5 - 6,5"	Tier 4 j ⁽¹⁾

* Engine power rating ISO IFN (Stand-by) and ICXN (Prime) according to ISO 3046 and ISO 14396, after running-in period at ambient condition +25°C, relative humidity 30%, and ambient pressure 100 kPa (1 bar). Fuel specification EN590.

**Electrical power includes fan power absorption, typical alternator efficiency and a power factor (cos φ) of 0.8.

Continuous (Prime) power can be overloaded of 10% for 1 h every 12 hours operation. Intermittent (Standby) power cannot be overloaded.

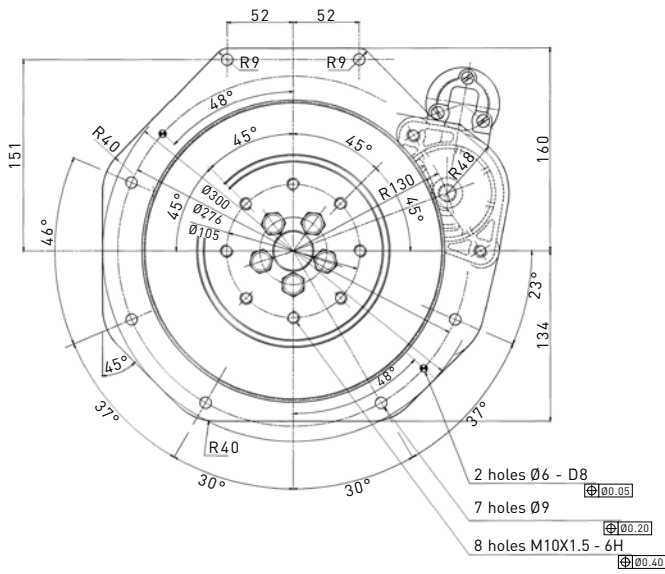
*** Possible de-rating might have to be taken in consideration to ensure emission compliance.

(1) for stationary + emergency applications.

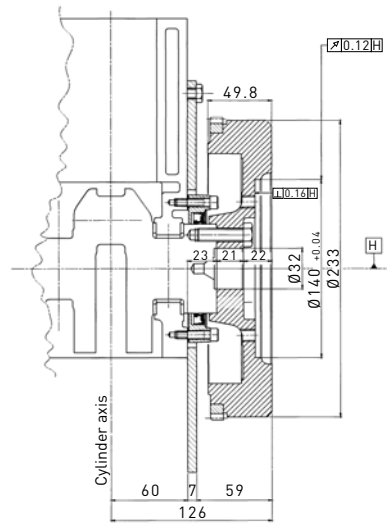
AVAILABLE FLANGES*

Standard version - LDW 502 / LDW 702 / LDW 1003 / LDW 1404

Flange standard type LDW 502 / LDW 702 / LDW 1003 / LDW 1404

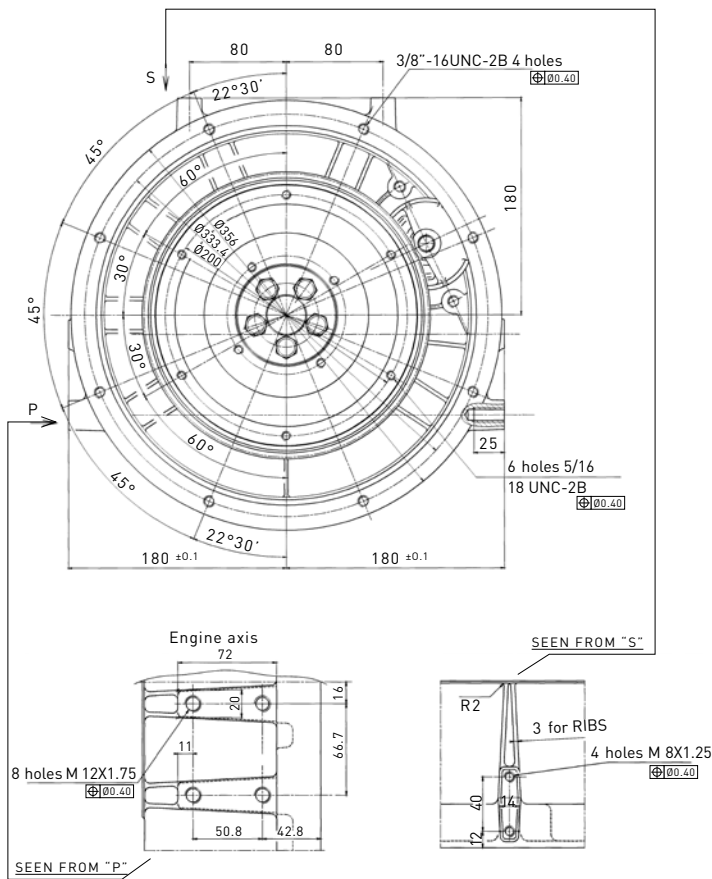


Standard version

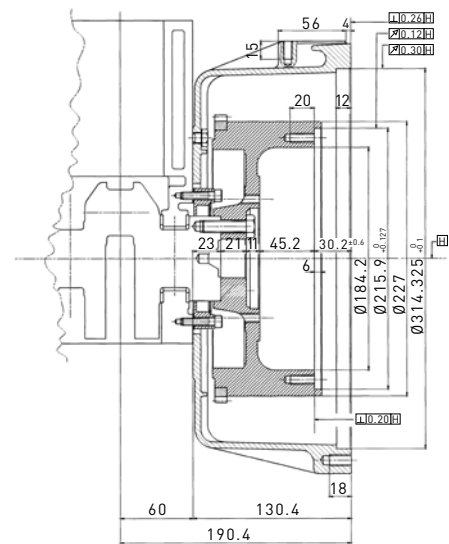


Version Genset - LDW 502 / LDW 702 / LDW 1003 / LDW 1404

Flange Genset LDW 502 / LDW 702 / LDW 1003 / LDW 1404



Standard version



*Other flanges available on request

TECHNICAL SPECIFICATIONS

Model		LDW 502	LDW 702	
Engine specs	4 stroke diesel engine with cylinders in line	•	•	
	Liquid cooled with axial fan	•	•	
	Indirect injection with injector pump on head	•	•	
	Single –shaft distribution in head	•	•	
	Double PTO on crankshaft	•	•	
	3 rd PTO on the distribution	•	•	
	Counterclockwise rotation (1 st PTO)	•	•	
	Forced lubrication with vane pump on the crankshaft	•	•	
	Full flow external oil filter	•	•	
	Water pump in the engine block	•	•	
	Automatic extra fuel starting device	•	•	
	Centrifugal governor	•	•	
	Torque regulator	•	•	
	Aluminum cylinder head	•	•	
	Cast iron engine block with re-borable integral liners	-	•	
	Die-cast aluminum engine block with reinforced structure	•	-	
	2 valves per cylinder	•	•	
Overhead camshaft on head driven by cogged belt	•	•		
Breather return oil steam	•	•		
Heating cab system predisposition	•	-		
Technical features	Cylinder	2	2	
	Bore (mm)	72	75	
	Stroke (mm)	62	77.6	
	Engine displ (cm ³)	505	686	
	Injection system	IDI	IDI	
	Compression ratio	22.8:1	22.8:1	
Performance	Emission compliance	ECE R 24	ECE R 24	EPA TIER 4
	Rating (kW/HP): N (80/1269/CEE)ISO 1585	8.6/11.7	12.5/17.0	-
	NB ISO 3046 IFN	8.0/10.8	11.7/16.0	11.5/15.6 #
	NA ISO 3046 ICXN	7.25/9.8	10.7/14.5	10.5/14.3 #
	Max torque (Nm@rpm)	24.5 @ 2200	40.5 @ 2000	34.0 @ 2200
Min idling speed (rpm)	900		900	
Fuel compatibility	UNI EN 590-2010	•	•	
	No 1 Diesel (US) - ASTM D 975-09 B - Grade 1-D S 15	•	•	
	No 1 Diesel (US) - ASTM D 975-09 B - Grade 1-D S 500	•	•	
	No 2 Diesel (US) - ASTM D 975-09 B - Grade 2-D S 15	•	•	
	No 2 Diesel (US) - ASTM D 975-09 B - Grade 2-D S 500	•	•	
	ARCTIC EN 590/ASTM D 975-09 B	•	•	
	High Sulfur Fuel < 5000 ppm (< 0.5%)	•	•	
	High Sulfur Fuel > 5000 ppm (> 0.5%)	•	•	
	Military NATO Fuels F34 - F35 - F44 - F63 - F64 - F65 *	•	•	
Military US Fuels JP5 - JP8 (AVTUR) *	•	•		
Civil Jet Fuels Jet A/ A1*	•	•		
Service features	Oil sump capacity (l)	1.4	1.6	
	Oil consumption (kg/h)	0.007	0.009	
	Oil change interval std/synthetic (hr)	150**	250**	
	Oil filter change interval std/synthetic (hr)	150**	250**	
	Valve adjustment	500	500	
	Oil consumption (% fuel)	<0.2	<0.2	
Physical characteristics	H x L x W (mm)	490 x 426 x 387	519 x 424 x 412	
	Dry weight (kg)	54	66	
	Ambient operating temps (°C)	-15 +50***	-15 +50***	
	Gradeability-all round (intermittent -30 min) (deg)	25	25	
	Gradeability-all round (peak value -1 min) (deg)	35	35	
	Cap. of air required for correct combustion @3600 (l/min)	910	1240	
	Cap. of air required for correct cooling @3600 (m ³ /min)	65 (1:1.23)	65 (1:1.23)	
Cooling & lubrication	Heat rejection to coolant (includes oil cooler) (kW)	8.6	12.5	
	Cooling fluid: 50/50 water/antifreeze	•	•	
	Oil type	SAE 5W 40 API SERVICE CF	SAE 5W 40 API SERVICE CF	
Auxiliary PTOs (3rd optional)	Max torque (Nm)	-	37.0 @ 1800 rpm	
	Drive ratio	0.5:1	0.5:1	

* With restrictions ** According to operating conditions *** -32° on demand # Net power rating without cooling fan

Model		LDW 1003		LDW 1404	
Engine specs	4 stroke diesel engine with cylinders in line	•		•	
	Liquid cooled with axial fan	•		•	
	Indirect injection with injector pump on head	•		•	
	Single –shaft distribution in head	•		•	
	Double PTO on crankshaft	•		•	
	3 rd PTO on the distribution	•		•	
	Counterclockwise rotation (1 st PTO)	•		•	
	Forced lubrication with vane pump on the crankshaft	•		•	
	Full flow external oil filter	•		•	
	Water pump in the engine block	•		•	
	Automatic extra fuel starting device	•		•	
	Centrifugal governor	•		•	
	Torque regulator	•		•	
	Aluminum cylinder head	•		•	
	Cast iron engine block with re-borable integral liners	•		•	
	Die-cast aluminum engine block with reinforced structure	-		-	
	2 valves per cylinder	•		•	
	Overhead camshaft on head driven by cogged belt	•		•	
	Breather return oil steam	•		•	
Heating cab system predisposition	-		-		
Technical features	Cylinder	3		4	
	Bore (mm)	75		75	
	Stroke (mm)	77.6		77.6	
	Engine displ (cm ³)	1028		1372	
	Injection system	IDI		IDI	
	Compression ratio	22.8:1		22.8:1	
Performance	Emission compliance	ECE R 24	EPA TIER 4	ECE R 24	EPA TIER 4
	Rating (kW/HP): N (80/1269/CEE)ISO 1585	19.5 /26.5	-	26.0 /35.2	(@ 2700)
	NB ISO 3046 IFN	18.0 /24.5	17.7 /24.1 #	24.5 /33.3	17.9 /24.3 #
	NA ISO 3046 ICXN	16.5 /22.4	16.1 /21.9 #	22.4 /30.5	16.3 /22.2 #
	Max torque (Nm@rpm)	67.0 @ 2000	50.0 @ 2600	84.0 @ 2000	70.0 @ 1600
Min idling speed (rpm)	900		900		
Fuel compatibility	UNI EN 590-2010	•		•	
	No 1 Diesel (US) - ASTM D 975-09 B - Grade 1-D S 15	•		•	
	No 1 Diesel (US) - ASTM D 975-09 B - Grade 1-D S 500	•		•	
	No 2 Diesel (US) - ASTM D 975-09 B - Grade 2-D S 15	•		•	
	No 2 Diesel (US) - ASTM D 975-09 B - Grade 2-D S 500	•		•	
	ARCTIC EN 590/ASTM D 975-09 B	•		•	
	High Sulfur Fuel < 5000 ppm (< 0.5%)	•		•	
	High Sulfur Fuel > 5000 ppm (> 0.5%)	•		•	
	Military NATO Fuels F34 - F35 - F44 - F63 - F64 - F65 *	•		•	
Military US Fuels JP5 - JP8 (AVTUR) *	•		•		
Civil Jet Fuels Jet A/ A1*	•		•		
Service features	Oil sump capacity (l)	2.4		3.2	
	Oil consumption (kg/h)	0.0013		0.0017	
	Oil change interval std/synthetic (hr)	250**		250**	
	Oil filter change interval std/synthetic (hr)	250**		250**	
	Valve adjustment	500		500	
	Oil consumption (% fuel)	<0.2		<0.2	
Physical characteristics	H x L x W (mm)	519 x 516 x 412		519 x 599 x 412	
	Dry weight (kg)	85		98	
	Ambient operating temps (°C)	-15 +50***		-15 +50***	
	Gradeability-all round (intermittent -30 min) (deg)	25		25	
	Gradeability-all round (peak value -1 min) (deg)	35		35	
	Cap. of air required for correct combustion @3600 (l/min)	1850		2470	
	Cap. of air required for correct cooling @3600 (m ³ /min)	80 (1:1)		115 (1:1)	
Cooling & lubrication	Heat rejection to coolant (includes oil cooler) (kW)	19.5		26.0	
	Cooling fluid: 50/50 water/antifreeze	•		•	
	Oil type	SAE 5W 40 API SERVICE CF		SAE 5W 40 API SERVICE CF	
Auxiliary PTOs (3rd optional)	Max torque (Nm)	37.0 @ 1800 rpm		37.0 @ 1800 rpm	
	Drive ratio	0.5:1		0.5:1	

* With restrictions ** According to operating conditions *** -32° on demand # Net power rating without cooling fan



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