CHESTER

MODEL
CH4-102-EB

Engine Specification Sheet

Model	Ratings HP (kW) @ Rated speed rpm	
	2200	2950
CH4-102-EB (UL)	87 (65)	95 (71)
CH4-102-EB (FM)	82 (61)	

ENGINE SPECIFICATIONS		
Type	4 Cycle; In-line; water cooled; 4 Cylinder	
Aspiration	Turbocharged	
Bore and Stroke	mm×mm	102x118
Displacement	L	3.856
Compression Ratio	17:1	
Combustion System	Direct Injection	
Rotation Viewed from flywheel	Counter Clockwise	
Dry Weight Approx.	kg	540
Dimension Approx. (L*W*H)	mm	1205*890*1275
Crankshaft Centerline Height	mm	330
Oil Capacity	L	12
Coolant Capacity - Engine + Heat Exchanger	L	18

Engine Equipment	Standard	Optional
Air Cleaner	Drip proof	N/A
Alternator	24V-DC, 35 Amps with BeltGuard	N/A
Coupling	Bare Flywheel	N/A
Engine Heater	220V-AC	110V-AC
Exhaust Flex Connection	DN65	N/A
Exhaust Protection	Metal Guard	N/A
Flywheel Housing	SAE 3	N/A
Flywheel Power Take Off	SAE 11.5	N/A
Fuel Connections	Flexible hoses according ISO 15540	N/A
Fuel Filter	Full flow, cartridge type	N/A
Governor, Speed	Constant speed, mechanical	N/A
Heat Exchanger	Shell and Tube Type	N/A
Instrument Panel	Build on Engine	N/A
Junction Box	Integrated in control panel	N/A
Lube Oil Cooler	Jacket Water Cooled	N/A
Lube Oil Filter	Full flow, cartridge type	N/A
Lube Oil Pump	Gear Driven, Gear Type	N/A
Manual Start Control	Dual Manual Start Contactors	N/A
Overspeed Control	Electronic instrument panel, test on instrument panel	N/A
Raw Water Cooling Loop w/ Alarms	Galvanized	Seawater (All 316 SS)
Raw Water Solenoid Operation	Automatic from Fire Pump Controller and from Engine Instrument Panel (for Horizontal Fire Pump Applications)	N/A
Run - Stop Control	On Instrument Panel with Control Position Warning Light	N/A
Starters	24V-DC, 4.5KW	N/A
Throttle Control	Adjustable speed control	N/A
Water Pump	Centrifugal Type, Gear Driven	N/A

All data is based on the engine operating with fuel system, lubricating oil pump, air cleaner, and alternator; not included are compressor, fan, optional equipment, and driven components.;Data is based on operation at SAE standard J1394 conditions of 300ft (91,4m) altitude, 29.61 in.(752mm) Hg dry barometer, and 77°F (25°C) intake air temperature, using 0# diesel fuel follow the standard GB 252-2011.

Altitude above which output should be Limited	m (ft.)	91 (300)
Correction Factor per 305m.(1,000ft.) above Altitude Limit	3%	
Temperature above which output should be Limited	°C (°F)	25 (77)
Correction Factor per 5.6°C (10°F) above Temperature Limit	1%	

Remark:

1.All data certified within 5%;
2.TBD - To Be Determined;
3.N/A - Not Applicable;

Engine Data Sheet

Engine Model	CH4-102-EB	Date	2020/6/18
Drawing No.	CH4-102-EB.00	Performance Curve No.	C04102B
Rated Power	95 HP @ 2950 RPM	Reference No.	14DS001E
	71 KW @ 2950 RPM	Version	A

GENERAL ENGINE DATA			
Type		4 Cycle; In-line; water cooled; 4 Cylinder	
Aspiration		Turbocharged	
Bore and Stroke		mm×mm	102x118
Cylinder Liner Type		☐ Wet	☑ Dry
Displacement		L	3.856
Compression Ratio		17:01	
Firing Order		1-3-4-2	
Combustion System		Direct Injection	
Rotation Viewed from front of engine		CW	
Valves Per Cylinder		Intake :1 Exhuast :1	
Valves lashes at cold	Intake	mm (inch)	0.4
	Exhaust	mm (inch)	0.4
Ignition Type		Compression(Diesel)	
Charge Air Cooling Type		Raw Water	
Weight Approx.		kg	540
Dimension Approx. (L*W*H)		mm	1205*890*1275
Flywheel/ Flywheel House Dimension		11.5"/ SAE 3	
EXHAUST SYSTEM			
Exhaust Gas Temp. at max. rating/power		℃	540
Exhaust Gas Flow at Max. Rating output		kg/h	675
Max. Allowable Back Pressure		kpa	10
Minimum Exhaust Pipe Diameter		DN	65
AIR INTAKE SYSTEM			
Air Cleaner Type		Dry Type, Disposable	
Air Flow at Max. Rating speed		m^3/h	550
Air Inlet Restriction Dirty		kpa	6
Air Inlet Restriction Clean		kpa	3
LUBRICATION SYSTEM			
Oil Capacity		L	12
Max. Sump Oil Temp.		℃	120
Normal Operating Oil Pressure Range		bars	>3
Oil Pressure at Idle		bar	>0.98
COOLING SYSTEM			
Coolant Capacity - Engine + Heat Exchanger		L	18
Thermostat Range	Start Open	℃	76
	Full Open	℃	86
Coolant Pressure Cap		bar	0.9
Max. Engine Coolant Temp.		℃	98
Engine Coolant Flow at Full Load		m^3/h	10.7
Raw Water Cooling Capacity		m^3/h	8
Raw Water Pressure		bar	2.5

Engine Data Sheet

Min. Raw Water Temp.		℃	15.6
Raw Water Pipe Size	Raw Water Inlet	G3/4"	
	Raw Water Outlet	G1"	
HEATER SYSTEM			
Wattage		W	2000
Voltage AC		V	220
ELECTRICAL SYSTEM-DC			
System Voltage(Nominal)		V	24
Starter motor		Kw	4.5
Recommended Battery Capacity		AH	120
Cold Cranking Amperes @ -18℃ (0ºF)		CCA	750
Reserve Capacity (RC)		Min	223
Charging Alternator Output		Amps	35
Max. Starter Cranking Amps @4.5℃（0°F）		Amps	210
Min. Cranking Speed Required for Unaided Cold Start		rpm	260
FUEL SYSTEM			
Injection Pump			
Injection Advance Angle		°	11
Minimum Supply line Size		mm	10
Minimum Return line Size		mm	10
Fuel Management Control		Mechanical	
Max. Fuel Consumption		g/kw,h	275
Idle Speed		rpm	800
Max. Governed Speed		rpm	3245
Maximum allowable fuel height above fuel pump		m	3
Governed Speed Rate		%	<10
Engine Performance Data			
Estimated free field soud pressure level at 1 meter with full-load governed speed(Includes Noise from: exhaust;: Cooling System and Driven Components)		dBa	108
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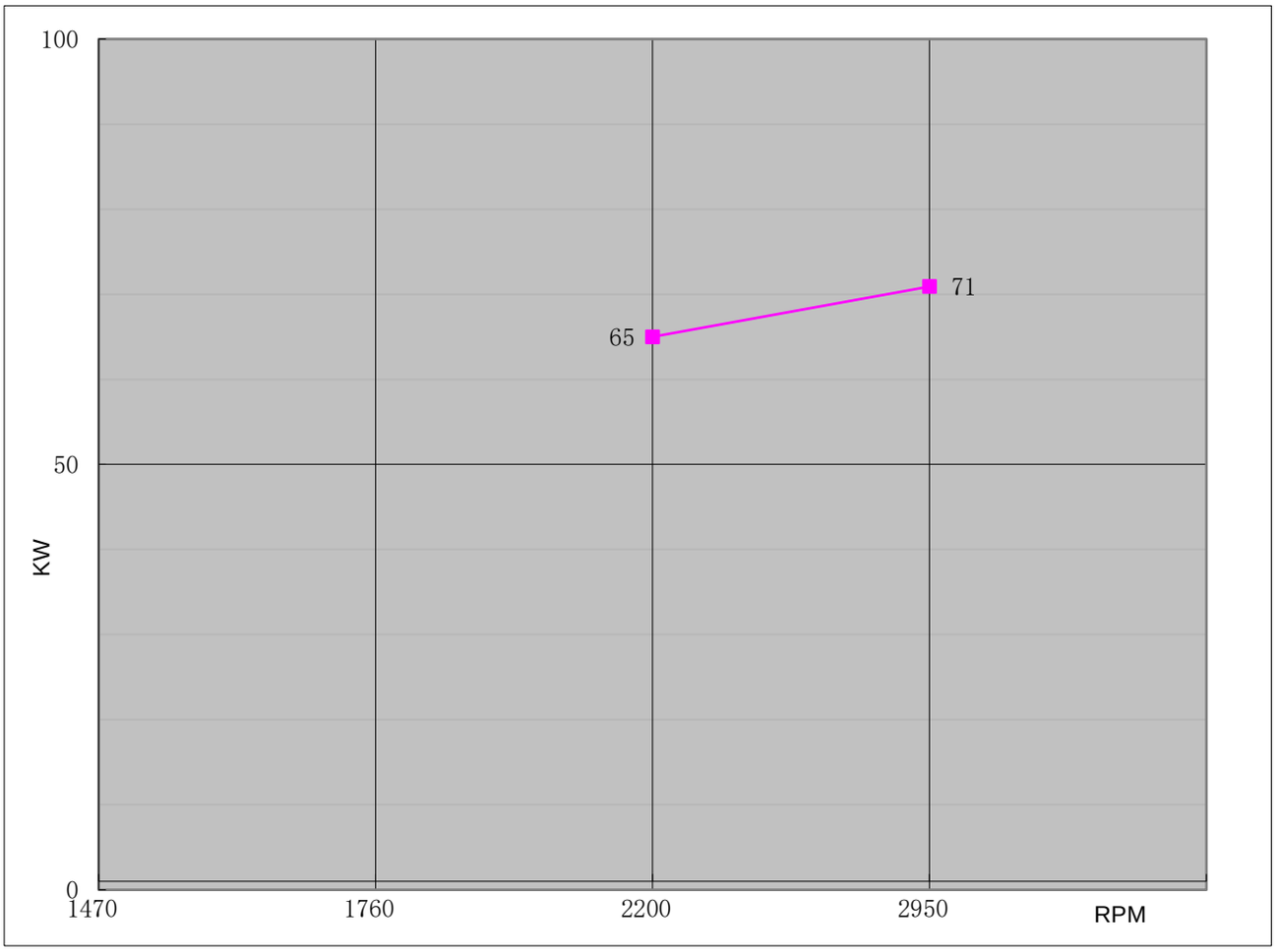
DIESEL ENGINE

Engine Model	CH4-102-EB	Curve No.	C04102B	Date	2020/6/18

Displacement	3.86 L	Aspiration	Turbocharged	Power Standard	UL/FM
Bore	102 mm	Cylinder Qty.	4	71 KW @ 2950 r/min	
Stroke	118 mm	Fuel System	In-Line; Mechanical	95 HP @ 2950 r/min	



Torque

Speed RPM	Torque N-m	lb-ft.
1470		
1760		
2200	282	208
2950	230	169

Output Power

Speed RPM	Output Power KW	HP
1470		
1760		
2200	65	87
2950	71	95

Fuel Consumption

Speed RPM	Consumption g/KW-HR	lb/BHP-HR
1470		
1760		
2200	275	0.452
2950	275	0.452

REV: A