



MODEL

**CH4-108-EB****Engine Specification Sheet**

Model	Ratings HP (kW) @ Rated speed rpm	
	2950	
CH4-108-EB (UL)	121 (90)	
CH4-108-EB (FM)	117 (87)	

ENGINE SPECIFICATIONS		
Type	4 Cycle; In-line; water cooled; 4 Cylinder	
Aspiration	Turbocharged	
Bore and Stroke	mm×mm	108x115
Displacement	L	4.214
Compression Ratio	17:1	
Combustion System	Direct Injection	
Rotation Viewed from flywheel	Counter Clockwise	
Dry Weight Approx.	kg	631
Dimension Approx. (L*W*H)	mm	1292*940*1210
Crankshaft Centerline Height	mm	330
Oil Capacity	L	13
Coolant Capacity - Engine + Heat Exchanger	L	20



MODEL

**CH4-108-EB**

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 2	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, 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

	Raw Water Pressure	bar	2
	Min. Raw Water Temp.	°C	15.6
	Raw Water Pipe Size	Raw Water Inlet	G1"
		Raw Water Outlet	G1 1/4"
HEATER SYSTEM			
	Wattage	W	3000
	Voltage AC	V	220
ELECTRICAL SYSTEM-DC			
	System Voltage(Nominal)	V	24
	Starter motor	Kw	5
	Recommended Battery Capacity	AH	120
	Cold Cranking Amperes @ -18°C (0°F)	CCA	750
	Reserve Capacity (RC)	Min	223
	Charging Alternator Output	Amps	35
	Max. Starter Cranking Amps @4.5°C (0°F)	Amps	360
	Min. Cranking Speed Required for Unaided Cold Start	rpm	310
FUEL SYSTEM			
	Injection Pump		
	Injection Advance Angle	°	12±1
	Minimum Supply line Size	mm	10
	Minimum Return line Size	mm	10
	Fuel Management Control	Mechanical	
	Max. Fuel Consumption	g/kw,h	250
	Idle Speed	rpm	700~750
	Max. Governed Speed	rpm	3245
	Maximum allowable fuel height above fuel pump	m	3
	Governed Speed Rate	%	<10
Engine Performance Data			
	Estimated free field sound pressure level at 1 meter with full-load governed speed(Includes Noise from: exhaust; Cooling System and Driven Components)	dBa	108
	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.		
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## Engine Data Sheet

<b>Engine Model</b>	CH4-108-EB	<b>Date</b>	2021/12/30
<b>Drawing No.</b>	CH4-108-EB.00	<b>Performance Curve No.</b>	C04108B
<b>Rated Power</b>	121 HP @2950 RPM	<b>Reference No.</b>	14DS001E
	90 KW @ 2950 RPM	<b>Version</b>	B

GENERAL ENGINE DATA			
Type	4 Cycle; In-line; water cooled; 4 Cylinder		
Aspiration	Turbocharged		
Bore and Stroke	mm×mm	108x115	
Cylinder Liner Type	<input checked="" type="checkbox"/> Wet <input type="checkbox"/> Dry		
Displacement	L	4.214	
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 Exhaust :1		
Valves lashes at cold	Intake	mm	0.40±0.05
	Exhaust	mm	0.45±0.05
Ignition Type	Compression(Diesel)		
Charge Air Cooling Type	Raw Water		
Dry Weight Approx.	kg	631	
Dimension Approx. (L*W*H)	mm	1292*940*1210	
Flywheel/ Flywheel House Dimension	11.5"/ SAE 2		
Torque at rated RPM	N.m	291	

EXHAUST SYSTEM			
Exhaust Gas Temp. at max. rating/power	°C	600	
Exhaust Gas Flow at Max. output	m³/h	1404	
Max. Allowable Back Pressure	kpa	10	
Minimum Exhaust Pipe Diameter	DN	65	

AIR INTAKE SYSTEM			
Air Cleaner Type	Dry Type		
Air Flow at Max. output	m³/h	515	
Air Inlet Restriction Dirty	kpa	5	
Air Inlet Restriction Clean	kpa	3	

LUBRICATION SYSTEM			
Oil Capacity	L	13	
Max. Sump Oil Temp.	°C	120	
Normal Operating Oil Pressure Range	bars	2.5~6.0	
Oil Pressure at Idle	bar	>1	

COOLING SYSTEM			
Coolant Capacity - Engine + Heat Exchanger	L	20	
Thermostat Range	Start Open	°C	70
	Full Open	°C	80
Coolant Pressure Cap	bar	0.9	
Max. Engine Coolant Temp.	°C	98	
Engine Coolant Flow at Full Load	m³/h	11.2	
Raw Water Cooling Capacity	m³/h	8	



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<b>Rated Power</b>	121 HP @2950 RPM	<b>Reference No.</b>	14DS001E
	90 KW @ 2950 RPM	<b>Version</b>	A

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Displacement	L	4.214	
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 Exhaust :1		
Valves lashes at cold	Intake	mm (inch)	0.40±0.05
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Ignition Type	Compression(Diesel)		
Charge Air Cooling Type	Raw Water		
Dry Weight Approx.	kg	631	
Dimension Approx. (L*W*H)	mm	1292*940*1210	
Flywheel/ Flywheel House Dimension	11.5"/ SAE 2		
Torque at rated RPM	N.m	291	

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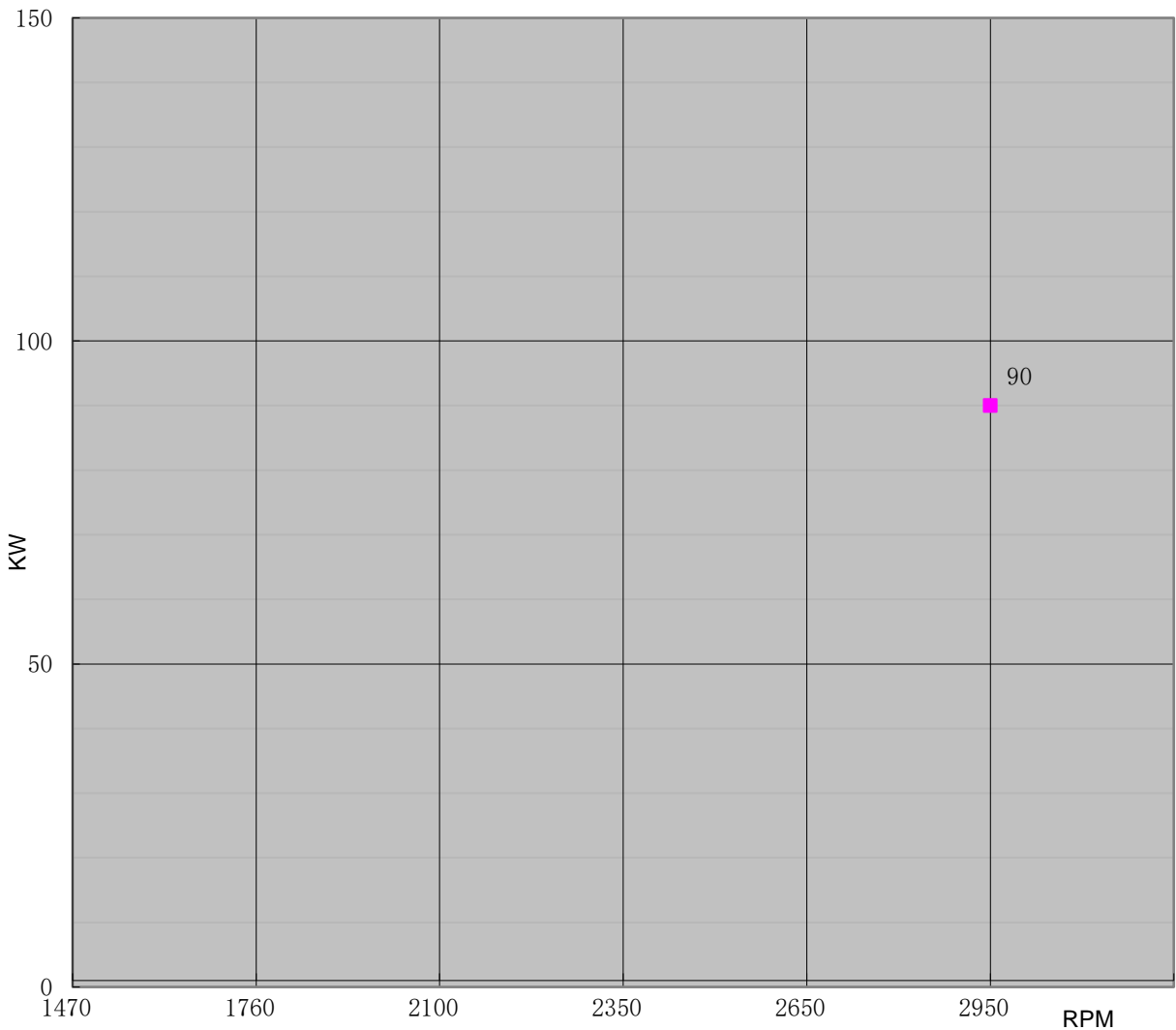
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Min. Raw Water Temp.		°C	15.6
	Raw Water Pipe Size	Raw Water Inlet	G3/4"
		Raw Water Outlet	G1"
HEATER SYSTEM			
Wattage		W	2200
Voltage AC		V	240
ELECTRICAL SYSTEM-DC			
System Voltage(Nominal)		V	24
Starter motor		Kw	5
Recommended Battery Capacity		AH	120
Cold Cranking Amperes @ -18°C (0°F)		CCA	750
Reserve Capacity (RC)		Min	223
Charging Alternator Output		Amps	35
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FUEL SYSTEM			
Injection Pump			
Injection Advance Angle		°	12±1
Minimum Supply line Size		mm	10
Minimum Return line Size		mm	10
Fuel Management Control		Mechanical	
Max. Fuel Consumption		g/kw,h	250
Idle Speed		rpm	700~750
Max. Governed Speed		rpm	3245
Maximum allowable fuel height above fuel pump		m	3
Governed Speed Rate		%	<10
Engine Performance Data			
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DIESEL ENGINE

Engine Model		CH4-108-EB		Curve No.		C04108B	Date	2019/6/12
Displacement	4.21	L	Aspiration	Turbocharged		Power Standard		UL/FM
Bore	108	mm	Cylinder Qty.	4		90	KW @ 2950	r/min
Stroke	115	mm	Fuel System	In-Line; Mechanical		121	HP @ 2950	r/min



Torque		
Speed	Torque	
RPM	N-m	lb-ft.
1470		
1760		
2100		
2350		
2650		
2950	291	215

Output Power		
Speed	Output Power	
RPM	KW	HP
1470		
1760		
2100		
2350		
2650		
2950	90	121

Fuel Consumption		
Speed	Consumption	
RPM	g/KW-HR	lb/BHP-HR
1470		
1760		
2100		
2350		
2650		
2950	250	0.411