

THE FULL RANGE OF ZUCCATO ENERGIA PRODUCTS

APRIL 2019 v2 EDITION - INTERNAL USE ONLY - DO NOT DISTRIBUTE - OVERRIDES ALL PREVIOUS EDITIONS -

Technical Specifications – ULH -, ULH⁺- & ULN- Series ORC modules

General Specifications	ZE-30-ULH	ZE-40-ULH	ZE-50-ULH	ZE-100-ULH	ZE-200-ULH ⁺	ZE-250-ULH ⁺	ZE-300-ULH ⁺	ZE-200-ULN	ZE-250-ULN	ZE-300-ULN
Thermal power input	350 kW _T	450 kW _T	550 kW _T	1100 kW _T	2500 kW _T	3050 kW _T	3600 kW _T	2273 kW _T	2810 kW _T	3333 kW _T
Electric power output	30 kW _E	40 kW _E	50 kW _E	100 kW _E	200 kW _E	250 kW _E	300 kW _E	200 kW _E	250 kW _E	300 kW _E
System efficiency	8.50 %	8.90 %	9.10 %	9.00 %	8.00 %	8.2 %	8.3 %	8.80 %	8.90 %	9.00 %
Skid dimensions (L x W x H)	3.30 x 1.40 x 2.1 m		4.0 x 1.3 x 2.5 m	5.5 x 2.5 x 3.2 m	10.5 x 4.5 x 4.6 m			6.2 x 2.6 x 3.2 m		
Weight (incl. working fluid)	~ 3100 Kg		~ 4500 Kg	~ 6500 Kg	~ 22.6 t	~ 22.7 t	~ 22.9 t	n/a		
Vector Fluid										
Vector fluid	Hot Water				Hot Water			Hot Water		
Vector fluid input temperature	≥94°C				≥95°C			≥85°C		
Vector fluid output temperature	86°C				80°C			80°C		
Vector fluid nominal flowrate	10.20 kg/s	13.40 kg/s	16.42 kg/s	32.84 kg/s	39.68 kg/s	48.41 kg/s	57.14 kg/s	108.24 kg/s	133.81 kg/s	158.71 kg/s
Condensation Stage										
Thermal power dissipation	310 kW _T	390 kW _T	470 kW _T	1000 kW _T	2266 kW _T	2758 kW _T	3249 kW _T	2039 kW _T	2518 kW _T	2982 kW _T
Cooling water input temperature	26°C				26°C			20°C		
Cooling water output temperature	31°C				31°C			25°C		
Cooling water nominal flowrate	14.81 kg/s	18.65 kg/s	22.46 kg/s	47,70 kg/s	108.27 kg/s	131.75 kg/s	155.24 kg/s	97.42 kg/s	120.29 kg/s	142.48 kg/s
Turbine										
Type	Single stage, radial inflow turbine with fixed nozzles, directly coupled to generator				Single stage, radial inflow turbine with fixed nozzles, directly coupled to generator			Single stage, radial inflow turbine with fixed nozzles, directly coupled to generator		
Working fluid temperature	85°C input / ~60°C output				81°C input / ~60°C output			81°C input / ~60°C output		
Stage pressure	PS4,42 (tested up to 10 bar)				PS4,42 (tested up to 10 bar)			PS4,42 (tested up to 10 bar)		
Materials	CNC Machined steel body / Aluminium alloy impeller				CNC Machined steel body / Aluminium alloy impeller			CNC Machined steel body / Aluminium alloy impeller		
Working Fluid										
Type	Environmentally friendly, non-flammable HFC mixture									
Operating temperature range	60°C < T <165 °C									
Operating pressure	≤ 20 bar									
Toxicity / Biodegradability / Ozone layer impact	Non-toxic / 100% biodegradable / Ozone-friendly									

ALL POSSIBLE EFFORTS HAVE BEEN MADE TO ENSURE THAT THE DATA CONTAINED HEREIN ARE CORRECT AND UP TO DATE: HOWEVER, THEY MUST BE CONSIDERED AS PURELY INDICATIVE, NON-BINDING AND SUBJECT TO CHANGE WITHOUT NOTICE.

THE FULL RANGE OF ZUCCATO ENERGIA PRODUCTS (CONTINUED)

Technical Specifications – LT-Series and CHP-Series ORC Modules

General Specifications	ZE-75-LT	ZE-100-LT	ZE-150-LT	ZE-175-LT	ZE-200-LT	ZE-500-LT	ZE-105-CHP	ZE-175-CHP Twin	
								Full-Electric Mode	CHP Mode
Thermal power input	550 kW _T	740 kW _T	1100 kW _T	1280 kW _T	1500 kW _T	3500 kW _T	1280 kW _T	1280 kW _T	
Electric power output	75 kW _E	100 kW _E	150 kW _E	175 kW _E	200 kW _E	561 kW _E	105 kW _E	175 kW _E	105 kW _E
System efficiency	13.60 %	13.50 %	13.60 %	13.60 %	13,30 %	16.00 %	8.20 %	13.60 %	8.20 %
Skid dimensions (L x W x H)	4.1 x 2.0 x 2.7 m	5.5 x 2.5 x 3.2 m			5.6 x 2.5 x 2.3 m	10.5 x 4.5 x 4.6 m	5.5 x 2.5 x 3.2 m		
Weight (incl. working fluid)	~ 4000 Kg	~ 6500 Kg			~ 6200 Kg	~ 21.5 t	~ 6500 Kg		
Vector Fluid									
Vector fluid	Overheated Water						Overheated Water		
Vector fluid input temperature	≥160°C						≥160°C		
Vector fluid output temperature	145°C		140°C		145°C		140°C		
Vector fluid nominal flowrate	8.49 kg/s	11.91 kg/s	13.14 kg/s	14.88 kg/s	23.17 kg/s	54.03 kg/s	14.88 kg/s	14.88 kg/s	14.88 kg/s
Condensation Stage									
Thermal power dissipation	471 kW _T	640 kW _T	940 kW _T	1075 kW _T	1280 kW _T	2909 kW _T	1157 kW _T	1075 kW _T	1157 kW _T
Cooling water input temperature	32°C	26°C				28°C	60°C	26°C	60°C
Cooling water output temperature	40°C	36°C				38°C	80°C	36°C	80°C
Cooling water nominal flowrate	14.07 kg/s	15.60 kg/s	22.46 kg/s	25.69 kg/s	30.62 kg/s	69.41 kg/s	13.82 kg/s	25.69 kg/s	13.82 kg/s
Turbine									
Type	Single stage, radial inflow turbine with fixed nozzles, directly coupled to generator						Single stage, radial inflow turbine with fixed nozzles, directly coupled to generator		
Working fluid temperature	145°C input / ~100°C output						145°C input / ~100°C output		
Stage pressure	PS16 (tested up to 24 bar)						PS16 (tested up to 24 bar)		
Materials	CNC Machined steel body / Aluminium alloy impeller						CNC Machined steel body / Aluminium alloy impeller		
Working Fluid									
Type	Environmentally friendly, non-flammable HFC mixture								
Operating temperature range	60°C < T <165 °C								
Operating pressure	≤ 20 bar								
Toxicity / Biodegradability / Ozone layer impact	Non-toxic / 100% biodegradable / Ozone-friendly								

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