THE FULL RANGE OF ZUCCATO ENERGIA ORC SYSTEMS

NOVEMBER 2021 EDITION - OVERRIDES ALL PREVIOUS EDITIONS

Technical Specs for ULH & CHP - Series ORC Modules

General Specifications	ZE-30-ULH	ZE-40-ULH	ZE-50-ULH	ZE-100-ULH	ZE-105-CHP
Thermal power input	350 kWt	450 kWt	550 kWt	1200 kWt	1280 kWt
Electric power output	30 kWe	40 kWe	50 kWe	100 kWe	105 kWe
System efficiency	8,50 %	8,90 %	9,10 %	8,30 %	8,20 %
Skid dimensions (L x W x H)	3.3 × 1.4 × 2.1 m		3.5 × 1.4 × 2.1 m	5.6 × 2.3 × 2.7 m	5.6 × 2.3 × 3.2 m
Weight (incl. working fluid)	3100 Kg		4500 Kg	6500 Kg	6500 Kg
Vector fluid					
Vector fluid	Hot Water				Overheated Water
Vector fluid input temperature	≥94°C			≥95°C	≥160°C
Vector fluid output temperature	86°C			85°C	140°C
Vector fluid nominal flowrate	10,20 kg/s	13,40 kg/s	16,42 kg/s	28,50 kg/s	14,88 kg/s
Condensation Stage					
Thermal power dissipation	310 kWt	390 kWt	470 kWt	1100 kWt	1157 kWt
Cooling water input temperature	26°C			27°C	60°C
Cooling water output temperature	31°C			35°C	80°C
Cooling water nominal flowrate	14,81 kg/s	18,65 kg/s	22,46 kg/s	32,50 kg/s	13,82 kg/s
Turbine					
Type	Single stage, radial inflow turbine with fixed nozzles, directly coupled to generator				
Working fluid temperature	85°C input / ~60°C output				145°C input / ~100°C output
Stage pressure	PS4,42 (tested up to 10 bar)				PS16 (tested up to 24 bar)
Materials	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 / Full eco-compatibility / Ozone-friendly				

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Technical Specs for LT - Series ORC Modules

General Specifications	ZE-75-LT	ZE-100-LT	ZE-150-LT	ZE-175-LT	ZE-200-LT	ZE-250-LT	ZE-500-LT
Thermal power input	550 kWt	740 kWt	1100 kWt	1280 kWt	1400 kWt	1560 kWt	2909 kWt
Electric power output	75 kWe	100 kWe	150 kWe	175 kWe	200 kWe	250 kWe	495 kWe
System efficiency	13,60 %	13,50 %	13,60 %	13,60 %	14,30 %	16,00 %	17,00 %
Skid dimensions (L x W x H)	4.1 × 2.0 × 2.7 m	5.6 × 2.3 × 2.7 m					10.3 × 4.5 × 2.9 m
Weight (incl. working fluid)	4000 Kg	6500 Kg	6200 Kg				21500 Kg
Vector fluid							
Vector fluid	Pressurized water						Diathermic Oil
Vector fluid input temperature	≥ 160°C					175°C	225°C
Vector fluid output temperature	145°C		140°C		145°C		103°C
Vector fluid nominal flowrate	8,49 kg/s	11,91 kg/s	13,14 kg/s	14,88 kg/s	21,65 kg/s	12,00 kg/s	11,28 kg/s
Condensation Stage							
Thermal power dissipation	471 kWt	640 kWt	940 kWt	1075 kWt	1180 kWt	1300 kWt	2391 kWt
Cooling water input temperature	32°C	26°C				28°C*	32°C
Cooling water output temperature	40°C	36°C				40°C*	48°C
Cooling water nominal flowrate	14,07 kg/s	15,60 kg/s	22,46 kg/s	25,69 kg/s	28,25 kg/s	25,91 kg/s*	35,38 kg/s
Turbine							
Type	Single stage, radial inflow turbine with fixed nozzles, directly coupled to generator						
Working fluid temperature	145°C input / ~ 100°C output						180°C input / ~ 100°C output
Stage pressure	PS16 (tested up to 24 bar)						PS40
Materials	CNC Machined steel body / Aluminium alloy impeller						
Working Fluid							
Type	Environmentally friendly, non-flammable HFC mixture						
Operating temperature range	60°C ≤ T ≤ 165°C						60°C ≤ T ≤ 185°C
Operating pressure	≤ 20 bar						≤ 30 bar
Toxicity / Biodegradability / Ozone layer impact	Non-toxic / Full eco-compatibility / Ozone-friendly						

*Available also with a direct condenser - no cooling circuit is required

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