



E-ZEE FLOW™ Heat Exchanger Sizing Guide

Nominal Values:

Step 1: Determine the desired temperature rise based on pool use.

The desired temperature rise for continuous use (summer) is 1°F/Hr for intermittent use (weekends/holidays) 2°F/Hr.

Step 2: Determine pool capacity

Rectangular Pools; Capacity (gal) = 7.5 x length (ft) x width (ft) x average depth (ft)

Circular Pools; Capacity (gal) = 5.9 x diameter squared (ft) x average depth (ft)

Step 3: E-ZEE Flow Heat Exchanger required

Once the pool capacity has been determined, select the recommended E-Zee flow heat exchanger from the selection table based on the desired temperature rise.

Step 4: Check heat loss to surroundings

Heat loss (BTU/Hr) = 12 x (Pool surface area, sq. ft.) x (desired pool temp., °F) - (coldest average air temp. during use (°F)). The boiler output in step 3 must be higher than the heat loss to the environment.

Note:

- The typical desired pool temperature is 75°F to 80°F.
- The temperature rise rate will decrease as outdoor temperature decreases.

Example:

Pool size = 30 ft x 20 ft x 6 ft deep (avg)

Usage = Continuous

Coldest anticipated air temp. = 65°F

Model	Nominal Capacity (BTU/Hr)	Hot Water Flow (GPM)	Cold Water Flow (GPM)
EZ-130	130,000	7.2	53
EZ-180	180,000	8	55
EZ-250	250,000	9.3	71
EZ-300	300,000	10.6	80
EZ-500	500,000	14.5	95
EZ-1000	1,000,000	25	186

Quick Sizing Reference:

Step 1

For continuous use, the desired temperature rise is 1 degree F/Hr.

Step 2

Pool Capacity = 7.5 x 30 ft. x 20 ft x 6 ft. = 27,000 gal.

Step 3

From the selection table, for a 28,000 gallon pool and a 1 °F/Hr rise

Required boiler output = 234000 BTU/Hr, Required heat exchanger = Model EZ-250

Step 4

Surface area = 30 ft. x 20 ft. = 600 sq. ft.

Heat loss = 12 x 600 (sq. ft.) x (80 - 65)(degreeF) = 108,000 BTU/Hr

Heat loss is the boiler output capacity.

Model	Pool Capacity (Gallons)
EZ-130	11,000
EZ-180	16,000
EZ-250	22,000
EZ-300	27,000
EZ-500	44,000
EZ-1000	88,000

E-Zee Flow™ Marine Series Sizing Guide

Swimming Pool:

Hot Side: Boiler Water 180°F-160°F

Pool Side: Maintained at 84°F

Pool Capacity (gallon)	Boiler Output (Btu/ HR)	1°F/ hr Heat Rise Heat Exchanger Model	Boiler Output (Btu/ HR)	2°F/ hr Heat Rise Heat Exchanger Model
8,000	67,000	NPH-180	134,000	NPH-180
10,000	83,000	NPH-180	166,000	NPH-180
12,000	100,000	NPH-180	200,000	NPH-300
14,000	117,000	NPH-180	234,000	NPH-300
16,000	133,000	NPH-180	266,000	NPH-300
18,000	150,000	NPH-180	300,000	NPH-300
20,000	166,000	NPH-180	332,000	NPH-500
22,000	182,000	NPH-300	364,000	NPH-500
24,000	200,000	NPH-300	400,000	NPH-500
26,000	215,000	NPH-300	430,000	NPH-500
28,000	232,000	NPH-300	464,000	NPH-500
30,000	248,000	NPH-300	496,000	NPH-500
32,000	265,000	NPH-300	530,000	2XNPH-300
34,000	282,000	NPH-300	564,000	2XNPH-300
36,000	298,000	NPH-300	596,000	2XNPH-300
38,000	315,000	NPH-500	630,000	2XNPH-300
40,000	331,000	NPH-500	662,000	2XNPH-300
42,000	348,000	NPH-500	696,000	2XNPH-500
44,000	364,000	NPH-500	728,000	2XNPH-500
60,000	497,000	NPH-500	994,000	2XNPH-500
80,000	662,000	2XNPH-300	1,324,000	3XNPH-500
100,000	830,000	2XNPH-500	1,660,000	4XNPH-500

NOTE: TABLE FOR REFERENCE ONLY- CONTACT DHT FOR SPECIFIC SIZING INFORMATION.

PERFORMANCE VALUES

Model	Nominal Capacity		Hot Water Water Flow		Cold Water Water Flow		Heat Transfer Area		Connection Shell	Connection Tubes
	kW	Btu/Hr	PSIG	USGPM	PSIG	USGPM	m ²	ft ²	inches	inches
NPH-180	53	180,000	0.4	7.93	1.1	55.48	0.44	4.7	1 ½	1
NPH-300	88	300,000	0.9	10.57	2.5	79.25	0.84	9	1 ½	1
NPH500	146	500,000	1.3	14.53	3.2	95.1	1.56	16.8	1 ½	1

Design Parameters	Tubes	Shell
Temperature	406°F (208°C)	406°F (208°C)
Pressure	150 PSI (1.03 MPa)	150 PSI (1.03 MPa)

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