How to choose the right air-conditioner

Example: You own a yacht and would like to aircondition a room of 5 m (length) x 5 m (width) x 2 m (height).

Step 1: Define the category of the cabin — **Category 2**

Determine the **category of the cabin**. We give an example for a cabin with an average glass area, for example a deck saloon.

Step 2: Define the net volume — **40 m³**

Determine the **net volume of the room** (5 m x 5 m x 2 m = 50 m³; subtract 20 % for furniture in the room; 50 m³ – 10 m³ = 40 m³; If you want to air condition the whole boat, please calculate the **sum of your rooms**.

Step 3: Define your climate region — **Normal region**

Determine the **climate region** where you spend most of your time. For example the Mediterrean Sea is a "normal region" in the climate category.

Step 4: Identify your cooling requirements — **20,000 BTU/h**

Result: You need an air conditioning system with a 20,000 BTU/h **cooling performance**.

Step 5: Decide between a self-contained and chiller system — **BlueCool S20**

Depending on the demands you can decide on a **self-contained or chiller system** with a cooling capacity of 20,000 BTU/h.

Step 1 — Step 2 — Step 3 — Step 4

	Category 1		
	portlights only, cabin(s) all below deck [400 BTU/m³]		
	region: normal	cold	hot
Volume of the rooms [m³]*	4,000	3,000	5,000
10	8,000	6,000	10,000
20	12,000	9,000	15,000
30	16,000	12,000	20,000
40	20,000	15,000	25,000
50	24,000	18,000	30,000
60	28,000	21,000	35,000
70	32,000	24,000	40,000
80	36,000	27,000	45,000
90	40,000	30,000	50,000
100	44,000	33,000	55,000
110	48,000	36,000	60,000
120	52,000	39,000	65,000
130	56,000	42,000	70,000
140	60,000	45,000	75,000
150	64,000	48,000	80,000
160	68,000	51,000	85,000
170	72,000	54,000	90,000
180	76,000	57,000	95,000
190	80,000	60,000	100,000
200			

*Volume of the rooms L x W x H (m³)

For precise BTU calculation, please refer to our dedicated BTU calculation tool, available on the Marine Navigator.

The right cooling capacity

Volume of the rooms L x W x H (m³)	Category 1: portlights only, cabin(s) all below deck (400 BTU/m³) region: normal	cold	hot
10	4,000	3,000	5,000
20	8,000	6,000	10,000
30	12,000	9,000	15,000
40	16,000	12,000	20,000
50	20,000	15,000	25,000
60	24,000	18,000	30,000
70	28,000	21,000	35,000
80	32,000	24,000	40,000
90	36,000	27,000	45,000
100	40,000	30,000	50,000
110	44,000	33,000	55,000
120	48,000	36,000	60,000
130	52,000	39,000	65,000
140	56,000	42,000	70,000
150	60,000	45,000	75,000
160	64,000	48,000	80,000
170	68,000	51,000	85,000
180	72,000	54,000	90,000
190	76,000	57,000	95,000
200	80,000	60,000	100,000

Volume of the rooms L x W x H (m³)	Category 2: average glass area, cabins partly below deck (500 BTU/m³) region: normal	cold	hot
10	5,000	3,750	6,250
20	10,000	7,500	12,500
30	15,000	11,250	18,750
40	20,000	15,000	25,000
50	25,000	18,750	31,250
60	30,000	22,500	37,500
70	35,000	26,250	43,750
80	40,000	30,000	50,000
90	45,000	33,750	56,250
100	50,000	37,500	62,500
110	55,000	41,250	68,750
120	60,000	45,000	75,000
130	65,000	48,750	81,250
140	70,000	52,500	87,500
150	75,000	56,250	93,750
160	80,000	60,000	100,000
170	85,000	63,750	106,250
180	90,000	67,500	112,500
190	95,000	71,250	118,750
200	100,000	75,000	125,000

Volume of the rooms L x W x H (m³)	Category 3: glass area above average, saloon above deck (600 BTU/m³) region: normal	cold	hot
10	6,000	4,500	7,500
20	12,000	9,000	15,000
30	18,000	13,500	22,500
40	24,000	18,000	30,000
50	30,000	22,500	37,500
60	36,000	27,000	45,000
70	42,000	31,500	52,500
80	48,000	36,000	60,000
90	54,000	40,500	67,500
100	60,000	45,000	75,000
110	66,000	49,500	82,500
120	72,000	54,000	90,000
130	78,000	58,500	97,500
140	84,000	63,000	105,000
150	90,000	67,500	112,500
160	96,000	72,000	120,000
170	102,000	76,500	127,500
180	108,000	81,000	135,000
190	114,000	85,500	142,500
200	120,000	90,000	150,000

Volume of the rooms L x W x H (m³)	Category 4: very large glass areas, saloon and wheel house above deck (750 BTU/m³) region: normal	cold	hot
10	7,500	5,625	9,375
20	15,000	11,250	18,750
30	22,500	16,875	28,125
40	30,000	22,500	37,500
50	37,500	28,125	46,875
60	45,000	33,750	56,250
70	52,500	39,375	65,625
80	60,000	45,000	75,000
90	67,500	50,625	84,375
100	75,000	56,250	93,750
110	82,500	61,875	103,125
120	90,000	67,500	112,500
130	97,500	73,125	121,875
140	105,000	78,750	131,250
150	112,500	84,375	140,625
160	120,000	90,000	150,000
170	127,500	95,625	159,375
180	135,000	101,250	168,750
190	142,500	106,875	178,125
200	150,000	112,500	187,500

*Volume of the rooms L x W x H (m³)

For extreme climatic conditions such as the Persian Gulf with sea-water temperatures of 32 °C and air temperatures of 40 °C, you have to add 25 to 30 % onto the calculated figure. On BlueCool P-Series units it is also recommended that the condenser is increased in size.