

For hot areas it would be wisely to use a cooling system like an air conditioner to cool your LED display to minimize failures and expand the life time of your LED display. An air conditioner is nowadays a not very expensive cooling system but can be made expensive due to the power consumption of it. For that it is wisely to buy an energy efficient air conditioner for your LED display without having troubles in the near future.

To buy an energy-efficient air conditioner for LED display, you must first determine what capacity, or size, you need. This is important for two reasons:

- An undersized unit won't cool adequately a LED display in extremely hot weather.
- An oversized air conditioner can also adversely affect your comfort. The unit may switch on and off too often, without running long enough to dehumidify the LED display properly or cool the space uniformly. And it will consume more energy than necessary.

Step 1: Calculate basic cooling capacity you will need for your LED display to meet the typical cooling load

Use this table to find the basic cooling capacity in Btu/h you'll need based on total LED display area to be cooled.

LED Display Basic Cooling Capacity by Total Area of the LED Display

Total Area of LED Screen		Basic Cooling Capacity
SQM	SQ. FT.	BTU/H*
9-14	100-150	5000
14-23	150-250	6000
23-28	250-300	6500
28-33	300-350	7250
33-38	350-400	8000
38-41	400-450	8750
41-46	450-500	9650
46-51	500-550	10500
51-65	550-700	12500
65-93	700-1000	15000
93-111	1000-1200	17700
111-149	1200-1600	19000-24000
149-167	1600-1800	24000-27000
167-260	1800-2800	27000-33000

For a 22.6m² (240 sq. ft.) LED display, the basic cooling capacity will be 6000 Btu/h. If the cooling capacity of the air conditioner is more than 12,000 Btu/h, consider installing two smaller units. Otherwise, a single unit might require a larger amperage circuit (20–30 amperes) or a dedicated 240-volt circuit; consult an electrician for more information.

Step 2: Additional factors that can influence the loading capacity of the air conditioner for LED Displays

Answer the questions below. If a question doesn't apply to your situation, leave the space blank. Then add or subtract from the basic cooling capacity to arrive at the approximate size of room air conditioner you should buy.

LED Display Capacity Deviations determined by External Variables of the LED Display

Additional Sizing Considerations	Add to	Subtract from	the Basic Cooling Capacity
(Let's take as an example a 6,000 Btu/h for a 22.6m² LED Display)			
If the LED display faces due north or northeast or is heavily shaded,	10%		subtract 10% of the basic cooling capacity (600 Btu/h).
If the LED display is extremely sunny (facing west and southwest),	10%		add 10% of the basic cooling capacity (600 Btu/h).
If the LED display is poorly insulated,	15%		add 15 percent of the basic cooling capacity (900 Btu/h).
What air conditioner will you buy for a 22.6m ² LED display if point 2 and 3 apply?			7,500 Btu/h