

Online Extras

Wind, Earth, Water or Fire: Which CO₂ Are You?

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Simple air conditioners, even “window bangers” can be modified for use in a sealed growing environment with carbon dioxide supplementation. Besides being able to maintain higher and more precise levels of CO₂ in the growing atmosphere, the grower will have precision control over the grow room’s most important parameter - temperature.

To reduce electrical costs by cutting down on the frequency of cycling by the AC, growers can install or continue to use their air-cooled lighting systems. These still keep the environment “sealed” because the hot air removed by the reflectors from the lamps is sealed off from the growing environment by the protective glass. This helps to keep the additional CO₂ in the room where it belongs, while removing heat from the largest source in the grow room - the lamps.

If an air-conditioner isn’t possible, go with the air-cooled reflectors and a “smart” environmental controller, such as the unit featured in this article. This way, the exhaust fans won’t need to empty the air out of the room as often to evacuate heat when using air-cooled lighting. The air cooled shades will keep most of the heat out of the grow room.

The exhaust fan(s) will only cycle on when the temperature or humidity set-points are exceeded. The “smart” feature of the controller will stop your CO₂ enrichment from running (tank/regulator or gas fired generator) when the exhaust cycles, saving you from wasting money generating valuable CO₂ that is being exhausted out with the hot air. This way, the air-cooled lighting will take away most of the heat



and the exhaust fan will need to cycle much less frequently, affording the grower a window to boost CO₂ above ambient levels, greatly improving yields and growth rates. When the exhaust does cycle, you won’t be wasting valuable CO₂ thanks to the integrated controller.