

## Maui Brewing Co Solar Hot and Chilled Water System

### Introduction

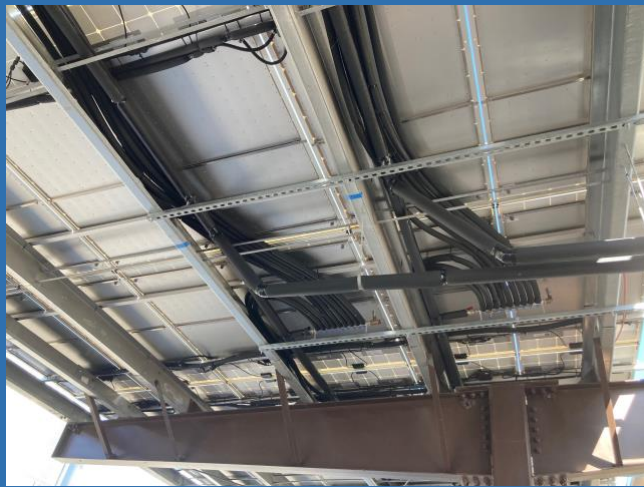
SunDrum® Solar has completed a 220 module hybrid solar PV-T array at Maui Brewing Corporation, Kihei HI. This array includes 220 SDM100-400 800Wt collectors matched with Solar World 325We modules and 16 GK 3133 glazed collectors with 30 tons of heat pump capacity. The system provides 160F brew water to the brew house hot liquor tank and <40F chilled water to the cold liquor tank.

The system is designed to use the PV-T modules to provide electricity and pre-heat brew water up to 140F, then during daylight hours the glazed system will top off to 160F. Also during the day thermal energy will be removed from the 3000 gal cold storage tanks to make chilled water and be used to pre-heat brew water to 110F. At night when there is no hot brew water demand the array will be used as an emitter to reject energy extracted from the cold storage tanks using the black body effect. Up to 40% of the energy can leave the planet resulting in a system that not only provides chilled water but cools the planet. The system is modeled to run at an unprecedented COP of 16. Typical air sourced heat pump water heaters run at a COP of 3 or less to provide the same energy.

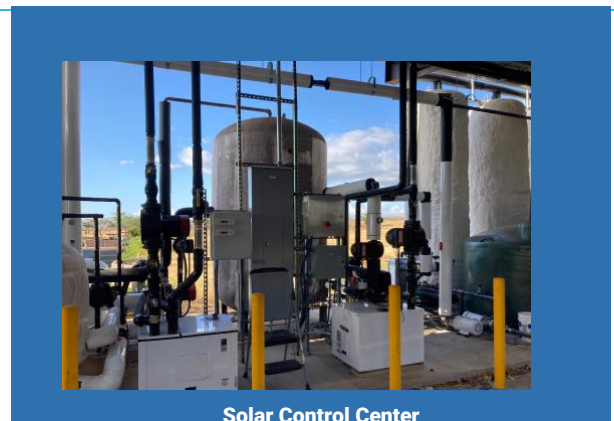


### System Information

<b>Location:</b>	Kihei HI, USA
<b>Application:</b>	160F process water + <40F chilled water
<b>Rated Power Output:</b>	248kW, (220kWt, 72kWe)
<b>Yearly Energy Output:</b>	128MWe 1,575MWh
<b>Yearly CO2 Reduction:</b>	860,000lbs
<b>Solar Collectors:</b>	220 SDM100-400, 800Wt
<b>System Format:</b>	Indirect Closed Loop
<b>Storage Capacity:</b>	9,000gal
<b>Backup Heating:</b>	Propane Steam



Array with Header and Home Run



### Contact Information

SunDrum Solar | [www.sundrumsolar.com](http://www.sundrumsolar.com)

