

Solar Tower

Introduction

Ingame Tooltip:

Solar Tower 2062:863

Contributing Green Energy towards the future

Surround with rings of Solar Reflectors

The Reflectors increase the internal heat value of the Tower (see below for formula)

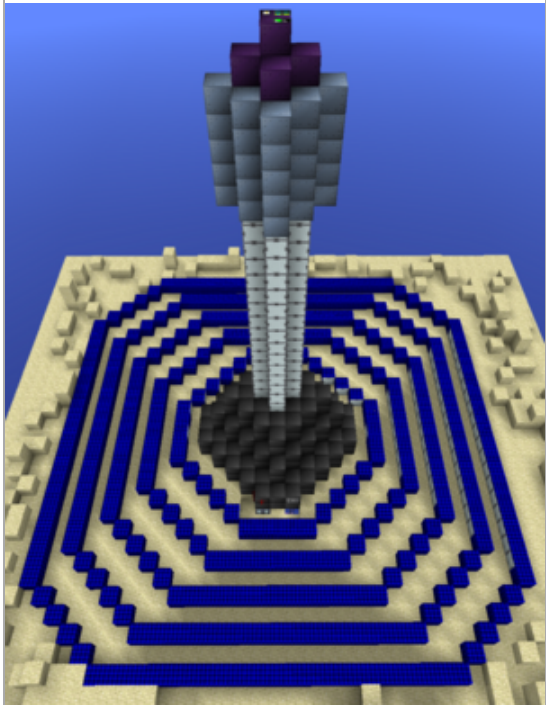
Each Reflector ring increases tier, the first ring is required for the Tower to work

Input: Solar Salt (Cold)

Output: Solar Salt (Hot)

Every cycle (10 seconds), heat increases and all the Cold Solar Salt is heated

Solar Tower



Mod	GT++
Tier	Early IV
Size	5x8x5

Converting Cold to Hot Solar Salt reduces heat, equal to the amount converted

This conversion only happens if heat >= 30000 and controller efficiency = 100%

If there's more Cold Salt than heat, all the heat is used up and returns to 0

The heat increase is most efficient at exactly half of maximum heat

Minimum efficiency at 0 or 100000 heat, maximum efficiency at 50000

Heat Efficiency formula: $(\text{currentHeat} - 50000)^{0.8} + 7000 / 7000$

Heat gain per cycle: $\text{numberHeaters} \times \text{heatEfficiency} \times (10 + \text{bonus})$

Bonus: 1 ring = +1, 2 rings = +2, 3 rings = +4, 4 rings = +8, 5 rings = +16

1 ring = 36, 2 rings = 88, 3 rings = 156, 4 rings = 240, 5 rings = 340

Construction

To construct the solar tower you will need a large flat area for the base and the rings. The usage of the Multiblock structure hologram projector is advised as the player can sneak right click on the controller block to autoplace the blocks into the world. Holding more then one Hologram projector in a stack can affect the tier of placement allowing the player to place the rings as well.

Once placed the player then needs to right click with the soft mallet to enable the multiblock.

Power Generation

The solar tower can provide a maximum of 8840 heat per 10 seconds which is the cycle rate of the solar tower. To obtain this heat rate the internal heat must be kept at a steady 50,000 with five rings of solar reflectors. The heat is converted into hot salt at a rate of 1:1 and then the hot salt can be converted into super heated steam at a rate of 1:1,000.

This would result in a maximum output of 42,200 super heated steam a tick. (Math ahead: 8840 heat / 10 seconds to 884 heat per second / 20 ticks for 44.2 heat per tick then times by 1000 for 42,200 super heated steam.

Usage

Inserting solar salt into the input hatch will convert into hot salt which can be converted into super heated steam and return back the cold salt to be reused into the solar tower.

The hot salt can be used in either the Thermal boilers at a consumption maximum rate of 100 per second or in the large heat exchanger at a consumption maximum rate of 320 per second.

A max tier solar can output enough solar salt for 8.84 thermal boilers or 2.62 Large heat exchangers with both outputting the same amount of super heated steam.

The large heat exchangers are cheaper to produce then the Thermal boilers but do not work well with fractional amounts so at best the solar tower will keep two of them at full efficiency at all times.

GT++		[Collapse]
Blocks		[Collapse]
Blocks/Casings	Botmium Machine Casing • Laurenium Machine Casing	
Machines	Cold Trap • Computer Cube • Reactor Processing Unit	
Multiblocks	GT Processing	Amazon Warehousing Depot • Boldarnator • Cryogenic Freezer • Cutting Factory • Dangote Distillus • Density^2 • FusionTech Mk IV • High Current Industrial Arc Furnace • Industrial 3D Copying Machine • Industrial Centrifuge • Industrial Coke Oven • Industrial Electrolyzer • Industrial Extrusion Machine • Industrial Material

		Maceration Stack • Ore Washing Plant • Steam Grinder • Steam Squasher • Utupu-Tanuri • Volcanus • Whakawhiti Wera XL • Wire Factory • Zyngen • Alloy Blast Smelter • Compact Cyclotron • ExxonMobil Chemical Plant • IsaMill • Grinding Machine • Reactor Fuel Processing Plant • Sparge Tower • Thermal Boiler
	GT++ Processing	
	Resource Prod.	Algae Farm • Tree Growth Simulator • Zhuhai Fishing Port
	Powergen	Large Advanced Gas Turbine • Large Generator Array • Large Semifluid Burner • Rocketdyne F-1A Engine • Solar Tower • Thorium Reactor (LFTR) • XL Turbo Gas Turbine • XL Turbo Plasma Turbine • XL Turbo HP Steam Turbine • XL Turbo Steam Turbine
	Other	Matter Fabrication CPU • Molecular Transformer • Power Sub-station
		<div>Items<div>[Collapse]</div></div>
Tools		Portable Scanner

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