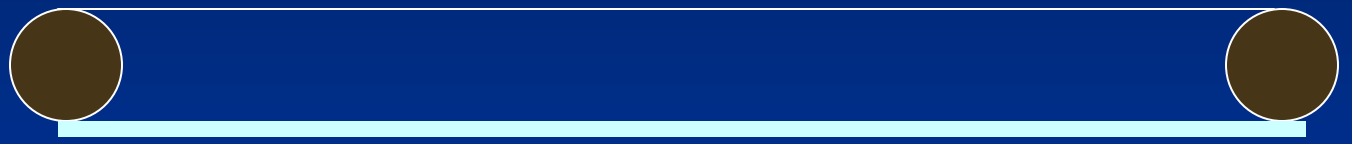
Vacu-Dish Concentrating Technology from A Better Focus Co.

Vacu-Dish Technology

How Does it Work?

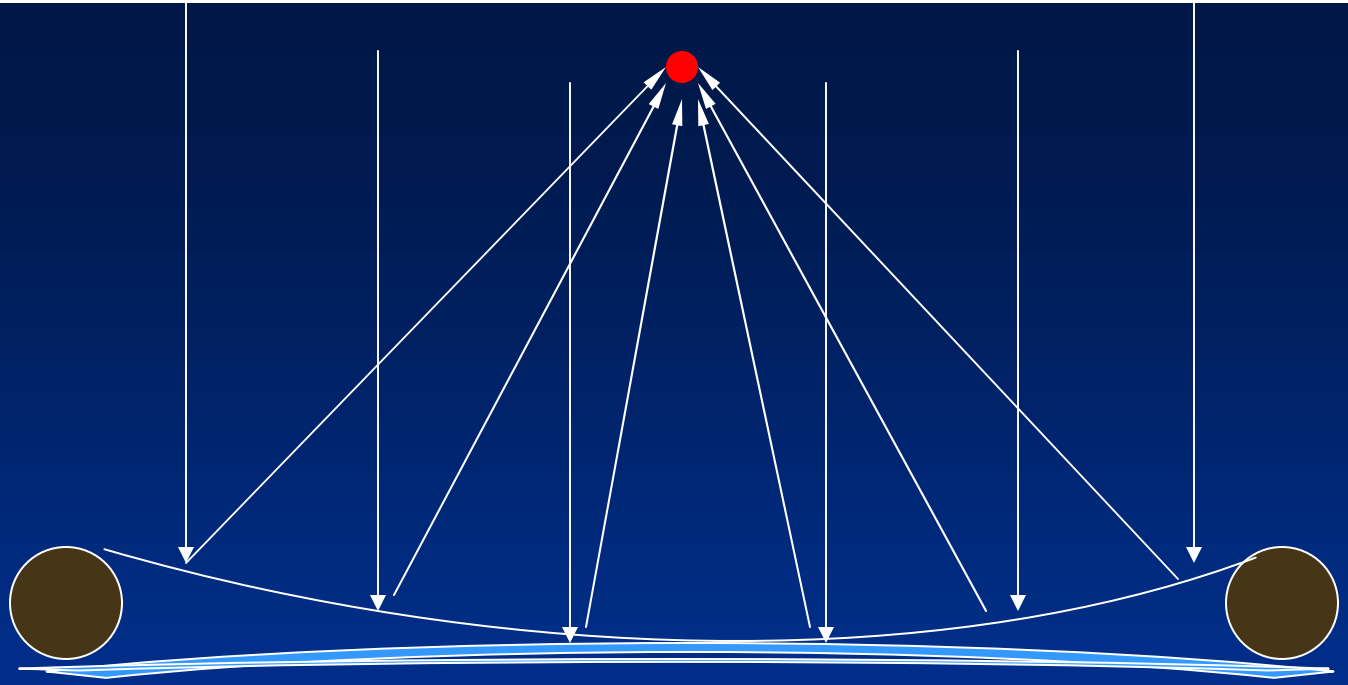
Reflective film is precisely stretched across a perfectly round frame



A tight seal is required so that a vacuum can be pulled inside the frame.

Vacuum hold time is several days without repumping

Patent pending



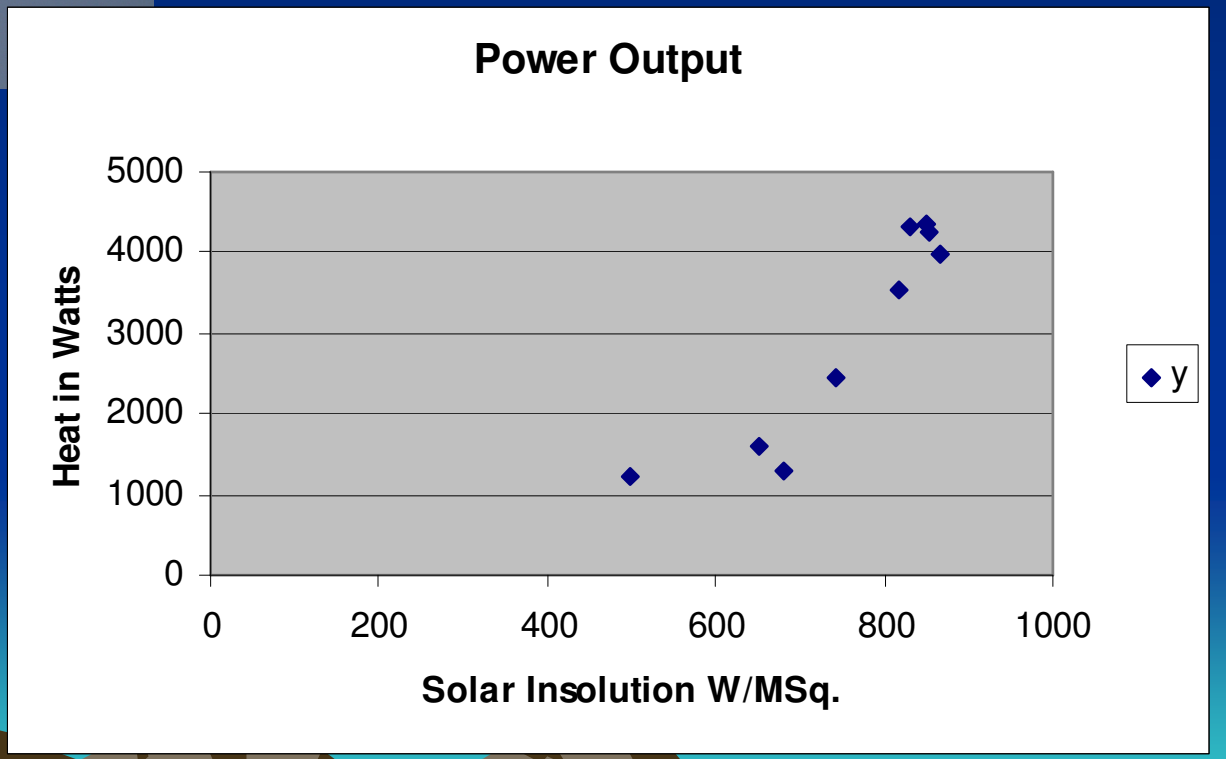
With Application of vacuum,
The film deforms into a concave shape,
focusing light to a single hot spot.
The backboard also becomes slightly concave,
Increasing the total strength of the assembly

Patent pending

Reciver test rig for heating water to measure power(1650F)

900C (1250 F) maximum temperature

Power Output



¼ Scale Model of a 4-Dish Sun-Tracking System

¼ Scale Model of a 4-Dish Sun-Tracking System

4 dishes focused
on a single 5” dia. spot

Addressing Catastrophic Wind and Hail Events

Testing of ¼ scale model at 50 mph

- Weathervane stowage mode turns dishes away from the wind, protecting reflective surfaces from blowing sand and hail
- Dishes rotate upwards to significantly reduce surface areas incident to the oncoming wind
- Note positive pressure inside dishes, which establishes a safe convex shape to the mirror, and also prevents damaging rippling of the film
- Stowage mode is the default and unpowered- requires no motors or processors to implement

Mini Power Tower Implementation

- Implementation as a mini power tower with a common fixed receiver is optically inferior
  - Off-Axis operation most of the day
- Integral receiver advantages
  - Tracker cost is significantly reduces
  - Fixed receiver is easier to design and maintain

Unlike most existing large power tower arrangements,
this is a focusing system, requiring only a 10-12” aperture at the receiver.

Next Step- Full Scale Unit

- We are seeking a company or institution that has a need for steam or hot water, and is interested in jointly developing a full scale unit for solar steam generation
- 25 HP (68KBTU / hr.) of steam (or pressurized hot water)generation,
- Up to 100 PSI
- Scalable up to 125 HP (100 Kw) by adding additional trackers
- Desired partner attributes
  - Industrial/Institutional user with a year-round need for steam or pressurized hot water
  - Must have good solar resource
  - Must be willing to share performance data
  - Must be willing to share in the construction costs
- A Better Focus Co. is willing to share intellectual property jointly developed.

Interested parties email or phone

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Summary

- The use of reflective film enables a lightweight dish design
- Lightweight dish design enables a lightweight tracking structure
- But large dish surface areas still must endure high wind events
- Weathervane stowage mode protects the reflective surfaces, and upward rotation reduces surface area presented to the wind by 60%
- Dish/Thermal reciever implementation is optically optimal
- Mini power tower is optically inferior, but much less costly, and offers good scalability