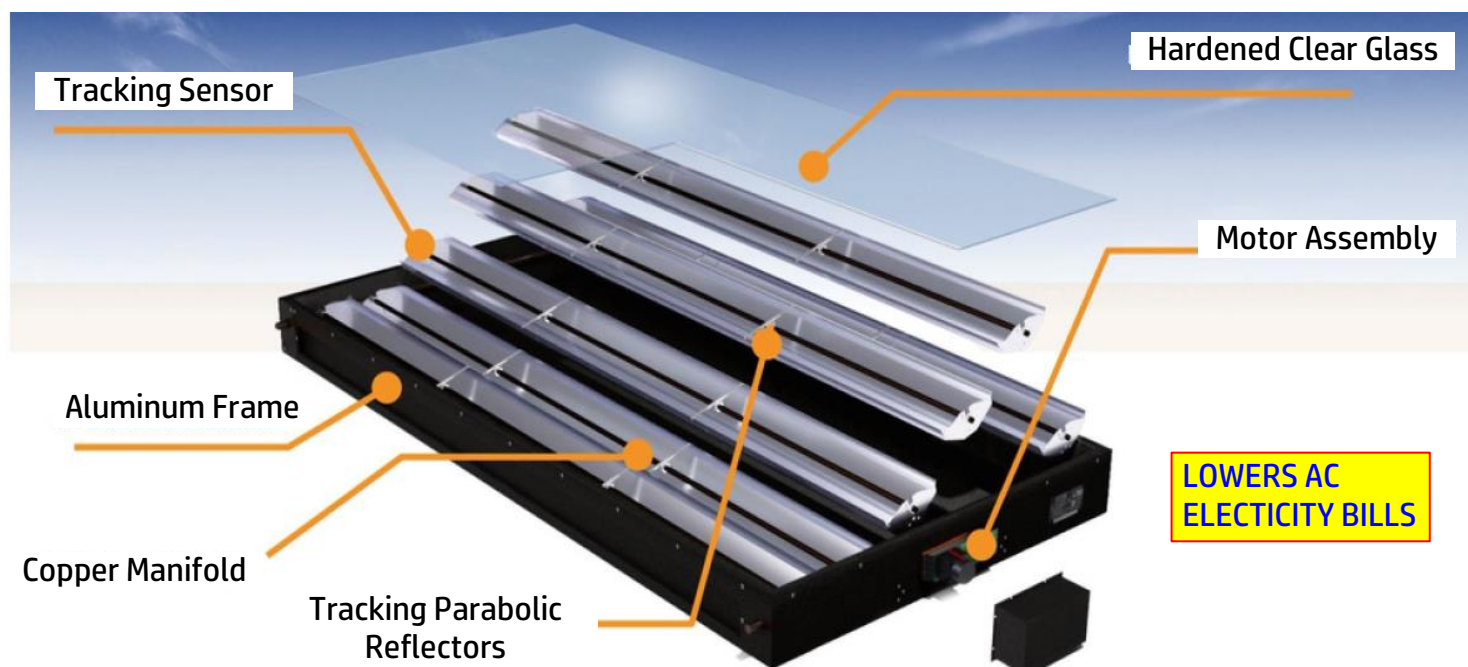


TRACKING PARABOLIC TROUGH PANEL (TPTP)



SAVES 20% TO 40% ELECTRICITY

Savings can go up to 60%, depending on the amount of sunlight. When averaged over the year the savings is between 20-40%

ROI OF ~36 MONTHS

While life of Panel is 15+ years

~1100% MORE SPACE EFFICIENT THAN PV PANELS

The Tracking Parabolic Trough Panel (TPTP) takes ~32 sq ft of space, saving ~3,500 watts while a comparative PV Panel will produce just ~300 watts in the same space.

LIFE OF THE HVAC SYSTEM IS IMPROVED

Since the TPTP Panel is doing the work of the compressor, it always runs on partial load. This reduced RPM over time results in enhanced life of the machine

2 YEAR WARRANTY

Provided by Smint TIQ on manufacturing defects

SUPPORTED BY MOST INDIAN AC MANUFACTURERS

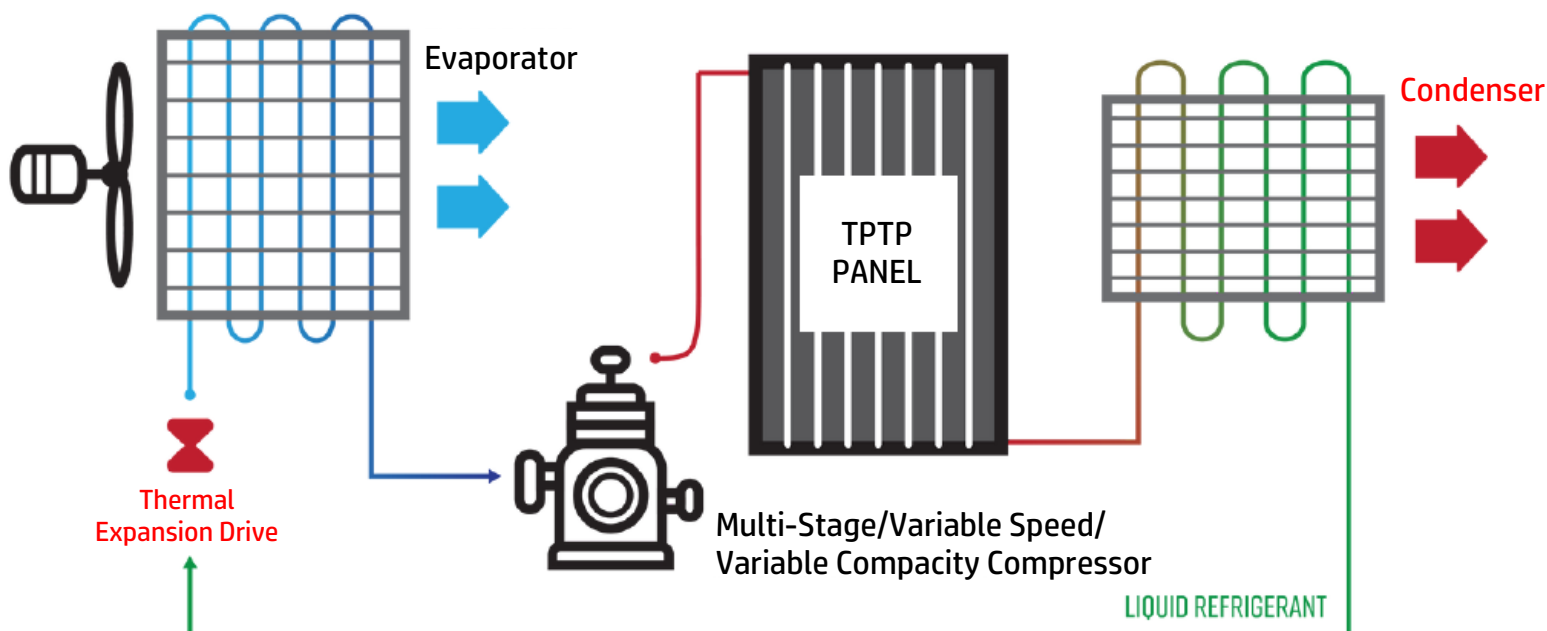
Carrier, Toshiba, Voltas, Blue Star, LG etc. support the systems where the TPTP Panel is used

HARDENED GLASS - HARDENED CLEAR GLASS

- ❑ Single Panel is suitable for 7.5 ton | 10HP | 90,000 BTU | 24,000 Kcal/h | 28Kw of cooling capacity
- ❑ System is scalable to any size HVAC project with variable / inverter compressor ACs (VRF, chiller, ductable or package)
- ❑ **12% GST and accelerated depreciation for tax benefits**



TRACKING PARABOLIC TROUGH PANEL (TPTP)

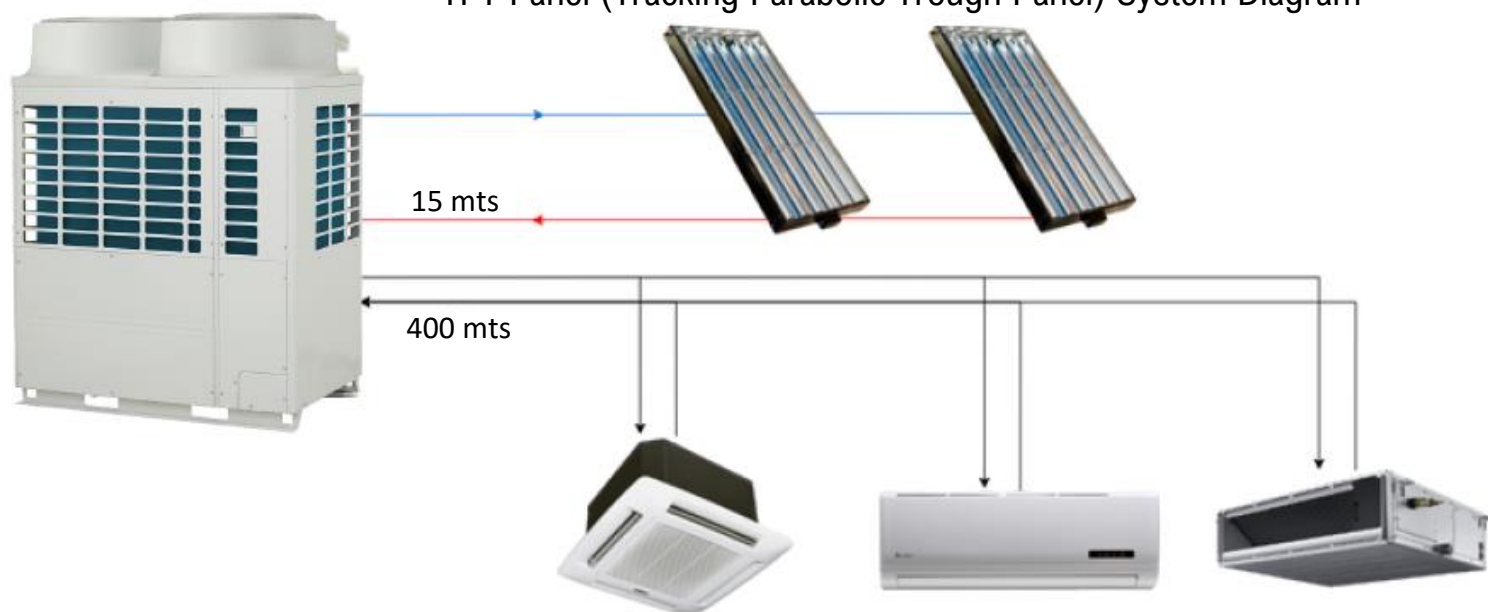


Refrigerant flow diagram with TPT Panel (Tracking Parabolic Trough Panel)

- ❑ **Refrigerant gas** with high temperature and pressure **leaves the compressor** and enters the **TPT Panel**
- ❑ The TPT Panel **harnesses the sun's energy** by reflecting the light on parabolic mirrored concentrators. The light is **focused on the copper pipes** that are coated with specialized absorption paint.
- ❑ Based on the solar thermal intensity, refrigerant temperature and internal load, the advanced **microprocessor decides the modulation** of the parabolic reflectors to ensure only **adequate heat is added** at the most optimum operational point
- ❑ This further heated refrigerant gas is **returned from the panel** outlet into the **HVAC units condenser**
- ❑ Due to the heat, the compressor needs to do **less work in the next cycle**, hence it slows down. The reduction in RPM of the compressor **correlates with the heat added by the TPT Panel**
- ❑ Hence, by **adding heat using the TPT Panel**, Perfect can **reduce the electricity consumption** of any Inverter AC **by 25-40%**
- ❑ Works with multi-stage, **variable speed, and variable capacity compressors**, including tandems, and single speed compressors with Variable Frequency Drives
- ❑ The hot refrigerant gas from the compressor is connected to the **top inlet of the TPT Panel**
- ❑ **Heat and pressure are added to the refrigerant**, generated by the sun and the heated/pressurized refrigerant is **returned from the panel** outlet to the HVAC units condenser
- ❑ By adding heat to the refrigerant using the TPT Panel, we can **reduce the compressor's energy consumption by up to 40%**
- ❑ Upgrades for new and existing cooling systems

Available in various sizes and capacities for HVAC-R systems ranging from 3-Ton to 500-Ton +, this program can retrofit and upgrade existing R-22, 407C, 134A and R-410A systems while providing HVAC energy savings of up to 40%

TPT Panel (Tracking Parabolic Trough Panel) System Diagram



Features, Construction & Specification

- ☐ **Right -Temp system** eliminates stagnation conditions & controls high-temperature limits
- ☐ Tracks daily **east to west** & returns to east at the end of day. Tracking controller & **brushless stepper motor** are serviceable through motor cover
- ☐ Designed for **15+ year life**
- ☐ Single-phase input power with **<5 watt consumption**
- ☐ **Powder-coated** to resist harsh environments
- ☐ **Removable glass top** for easy access
- ☐ **Scalable** for side-by-side mounting applications
- ☐ **Little to no maintenance cost**

IoT Condition Monitoring

- ❖ Thermal Mass flow
- ❖ Thermal Effectiveness
- ❖ Pressure Monitoring
- ❖ Energy Saved

Collector Case/Frame

100% Aluminium enclosure; 8011-H14 Aluminium; Size - 8ft x 4ft

Cover:

Hardened clear glass, 4mm thick

Capacity

One HTS Panel ideal for 7.5 tons / 10 HP / 90,000 BTU of cooling & heating

Insulation

9mm thick EPDM Insulation

Weight / Dimensions

86kg, 100" x 52" x 7"; Reflector area: 8ft x 4ft

Concentrators

Extruded aluminum reflector; Metalized aluminum foil mirror

Absorbers

Copper tube: 5/8", 1-1/8"; Black selective paint: absorptivity .92/.96

Sun Trackers

Two shaded phototransistors and brushless stepper motor; 12 vcd, 1.5w

Mounting Provisions

Adjustable stand provided; Recessed lip on frame for clamping