

COMPRESSION HEAT RECOVERY

ACTIVE COOLER - FOR HEAT SOURCES GREATER THAN 170°F



ElectraTherm's Active Cooler uses an Organic Rankine Cycle (ORC) to convert the heat from engine cooling circuits into emission-free power while eliminating parasitic cooling loads. The system prioritizes engine cooling requirements while producing power or at a minimum, net-zero cooling. The system fulfills cooling requirements regardless of power generation, which eliminates the need for an alternative radiator. The Active Cooler utilizes an induction generator which allows for simplified electrical connection and start up. Exhaust gas heat can also be converted to electricity with an additional heat exchanger and larger ORC system, furthering improving energy efficiency.

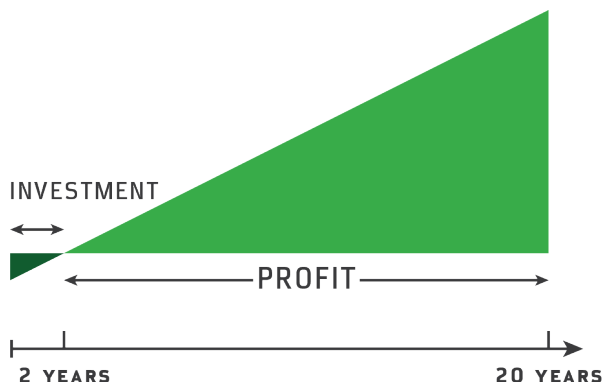
- // Provides full-load cooling for engine.
- // Ability to generate up to 75 kWe (gross).
- // No additional emissions or fossil fuels.
- // Easy installation with remote operation.
- // Simple, robust design with minimal footprint.
- // Minimal operating costs and maximum up-time.
- // Short payback period (2 - 5 years).
- // Qualifies for clean energy incentives.¹

EXAMPLE APPLICATION²

- // 1.6 MW engine + AC800
- // 8000 hours of operation annually
- // Power Output (Net): 67 kW
- // Radiator Offset: 10 kW
- // Annual Power Output: 616 MWh

SAVINGS / REVENUE

- \$61,600 per year at \$0.10/kWh
- \$92,400 per year at \$0.15/kWh



1. Incentive eligibility varies based on region.
2. Results supported by extensive testing and real-world installations.

FACTORS THAT MAKE A SUCCESSFUL INSTALLATION

HEAT

Our systems utilize heat sources above 170°F converting the heat energy into electricity. Higher temperatures typically have higher power output and therefore a faster return on investment.

RUN HOURS

Some units run all the time, and some are only used intermittently. The more time an application is operational, the faster the return on investment.

VALUE OF POWER

The power generated by the Active Cooler can be sold to the grid, or offset power used onsite. This gives the Active Cooler a revenue stream. The higher the value of power, the faster the return on investment.



GAS COMPRESSION DEMONSTRATION

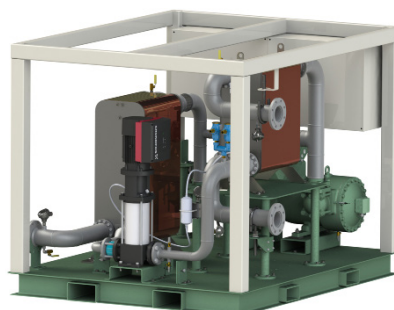
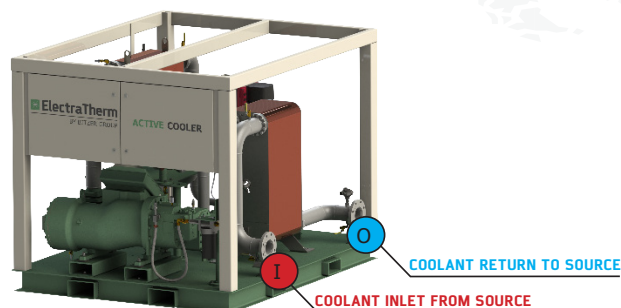
At a natural gas compression site in Oklahoma the Active Cooler provided cooling for the engine while generating clean electricity - serving as a radiator alternative that generates power.

ACTIVE COOLER AC800 PARAMETERS

Thermal Input (Heat Rejected)*	> 380 kWth
Hot Water Inlet (Temperature)**	158-302°F
Hot Water Inlet (Flow Rate)	45-240 gpm
Power Output (Gross / Net)	Up to 75 kW / Up to 65 kW
Weight (skid option)	14,300 lb
Dimensions (skid option)	7.5' x 33' x 6.6' (W*L*H)

*Loads larger than 800 kWth may require a custom design or secondary unit.

**Higher temperature heat sources require an additional heat exchanger.



ABOUT ELECTRATHERM

ElectraTherm is a global leader in Organic Rankine Cycle (ORC) heat recovery. ElectraTherm has shipped over 100 ORC units to over 13 countries, clocking over 2,000,000 hours of operation. Supported by a group of dedicated partners and backed by BITZER, the world's largest independent manufacturer of refrigeration compressors, the ElectraTherm team continues to develop industry-leading waste heat recovery systems that are good for business and the planet.

ElectraTherm By BITZER Group

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