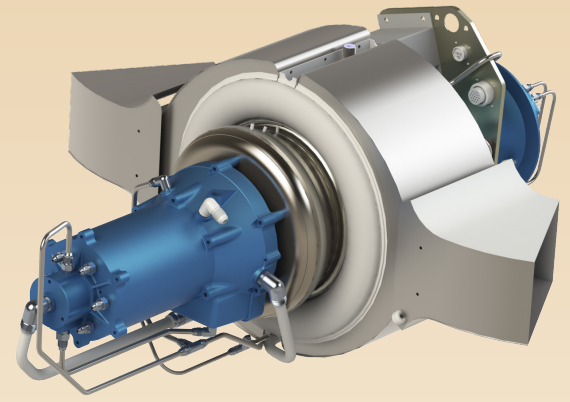




TA65-1

RECUPERATED TURBOALTERNATOR

CURRENTLY IN DEVELOPMENT



SPECIFICATIONS (SEA LEVEL ISO STANDARD DAY)

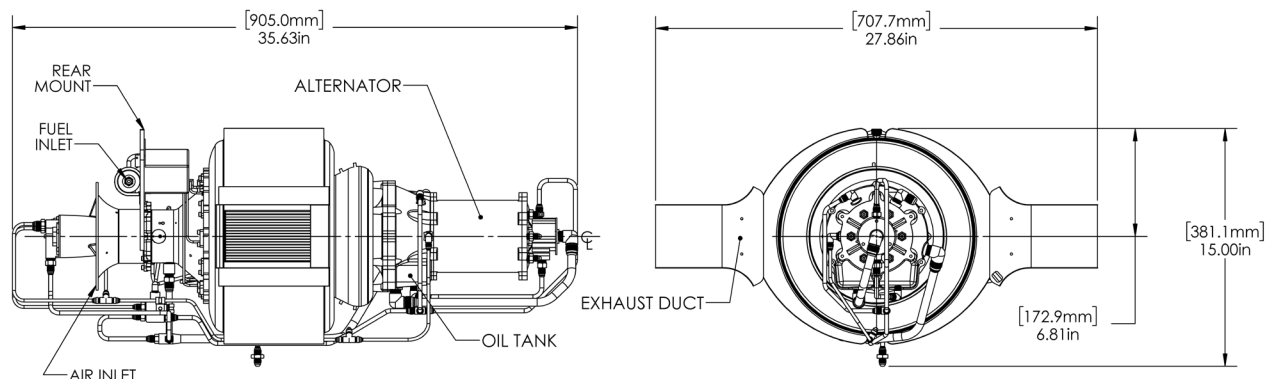
POWER OUT MAIN ALTERNATOR @ 1010C TIT	60 KW @ 705VAC RMS 3 PH, 1267 HZ
POWER OUT STARTER ALTERNATOR	5 KW @ 450V RMS, 3 PH 3000 HZ
MASS (COMPLETE ENGINE WITH ACCYS)	30 KG (66 LB)
FUEL	JP-4, JP-5, JP-8, JET A, JET A-1
OIL	MIL-L-23699
ATTITUDE LIMITS	PITCH: ± 45° ROLL: ± 30°
HEAT REJECTION	4.5 KW (OIL AND ALTERNATORS COMBINED)

DESCRIPTION

The TA65 is a 1.5 Spool Gas Turbine Driven Alternator “Turboalternator” Intended for Use on Unmanned Vehicles and Ground Power Units.

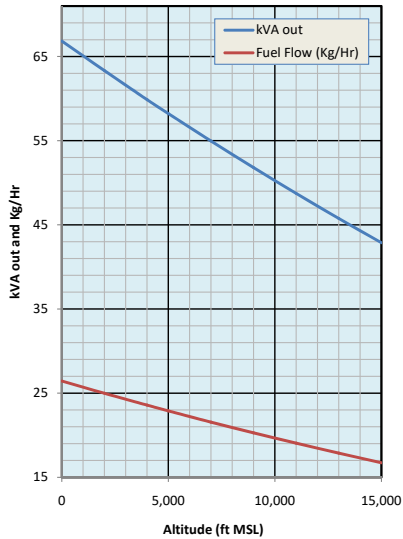
Features Include:

- 60 KVA 3-Phase Slotless, Brushless, Oil-Cooled Main Alternator
- 5 KVA 3-Phase Slotted, Brushless, Air Cooled Starter/Alternator
- Two-Stage Axi-Centrifugal Compressor
- Two-Stage Radial-Axial Turbine
- Reverse-Flow Annular Burner with Patented Shear Atomizing Fuel Nozzles
- Multi-Pass Annular Exhaust Heat Recuperator

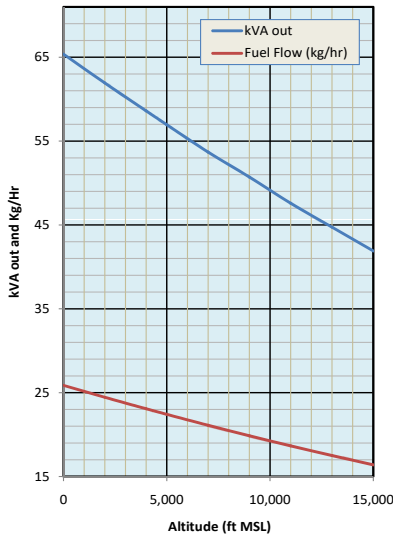


SEA LEVEL PERFORMANCE

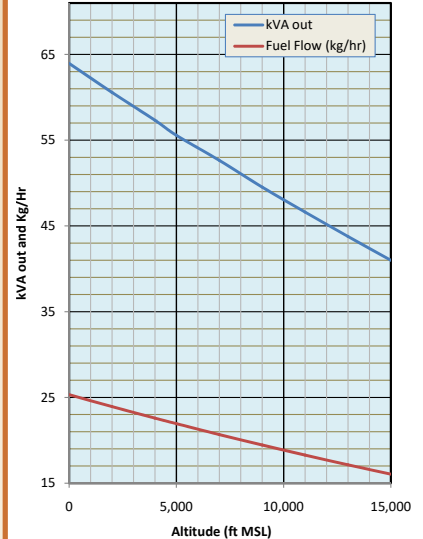
Electric Power Out & Fuel Flow vs. Altitude
1010C Turbine Inlet Temperature
ISO SLS, 94% Electric Conversion Efficiency



Electric Power Out & Fuel Flow vs. Altitude
1000C Turbine Inlet Temperature
ISO SLS, 94% Electric Conversion Efficiency



Electric Power Out & Fuel Flow vs. Altitude
988C Turbine Inlet Temperature
ISO SLS, 94% Electric Conversion Efficiency



BASIC ENGINE INCLUDES

- High-Voltage Air-Cooled Brushless Starter Alternator (*Alternate Output Voltages are Available*)
- Low Tension Ignition Unit with Single Igniter Plug
- Variable-Speed Fuel Pump or Variable Flow Current-Driven Torquemotor Valve
- 20 Micron Fuel Filter
- Integral Oil Tank
- Oil Pump and 3-Micron Filter
- Oil Pressure Switch
- Magnetic Chip Detector
- Electronic Starter Drive Unit
- Gas Generator Hall-Type Speed Sensor
- Power Turbine Exit Temperature Sensor (*Type K*)
- 4-Point Engine Mount
- Compressor Inlet Temperature Sensor (*Type K*)

CUSTOMER PROVIDED ACCESSORIES

- Output Rectifier/Power Conditioner
- Battery (*Currently, the engine requires 225 volts for starting*)
- Air Filter (*if required*)
- Alternator Oil Cooler and Associated External Lines
- Engine Oil Cooler and Required External Lines
- Oil Temperature Sensing Bulb
- Fuel Tank Boost Pump to Provide 5 PSI Above True Fuel Vapor Pressure to the Engine