AC SINE WAVE FILTER

How many ways can you use 200 kW of clean 3-phase power?

Liquid cooled AC Sine Wave Filter

JDES developed this rapid prototype using a standard electrical cabinet and JDES technology. This project included electrical design to define and select the passive filter components, mechanical expertise for high power packaging and high power density water cooling, and production AC supply software inside the inverter.

High power density

✓ Meets IEEE 519 harmonic limits.

FILTER

AC SINE WAVE FILTER Specifications

Voltage

Nominal Output	480VAC
Operating Voltage Range	456 to 504 VAC

Current

Line Currents	350 A RMS with 3-Φ loads
	Future Possible unbalanced loads and 1-Φ loads

Fundamental Frequency

Nominal	50 Hz / 60 Hz
Potential operating range	30-90 Hz

Environmental

Ambient Temperature	-40°C to 85°C

Switching Frequency

Nominal	4 kHz
Potential operating range	3-10 kHz

The filter is intended to meet IEEE 519 harmonic limits through the PD400 operating envelope. An unloaded system will produce a 3.31% THD

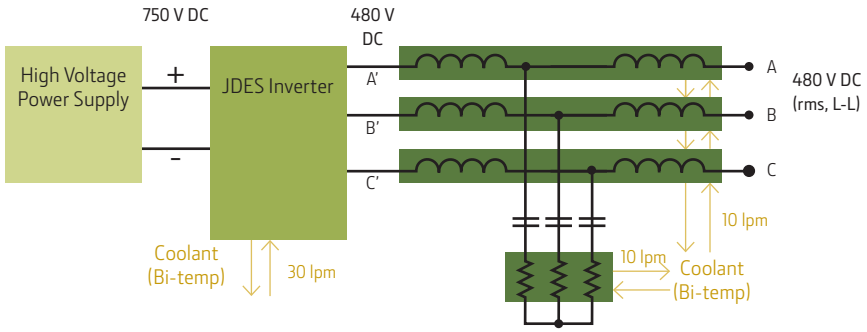
Dimensions

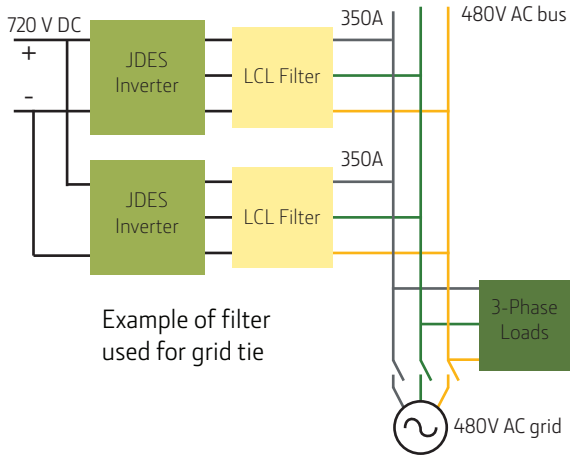
605L x 507W x 393T mm

Cooling

Maximum Inlet Coolant Temperature	70 °C
Minimum Flow Rate of Coolant	10 liters per minute
Possible Future	50°C coolant available

The filter is to be 50% - 50% Water/ethylene glycol cooled and operate in a 70 °C maximum temperature environment.





Example of filter used for grid tie

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