

SolarEdge Inverter Efficiency, Europe & APAC

Background

Inverter efficiency is defined as the ratio between inverter input power from PV DC and inverter output power. High inverter efficiency means lower losses, less heat to dissipate and higher reliability.

Like all inverters, SolarEdge inverters are characterized by two efficiency values:

- *Maximum efficiency*– the highest inversion efficiency at which the inverter can operate. This efficiency is attained at a specific inverter working point.
- *Weighted efficiency*– this efficiency takes into account the changing environmental conditions to which the inverter is exposed throughout the day and over the year and is calculated by measuring the inverter efficiency at various power loads. The weighted efficiency provides a more accurate inverter operating profile representation. The European weighting formula, optimized for mainland Europe irradiance conditions, is:

$$\eta\eta = 0.2 \cdot \eta\eta_{100\%} + 0.48 \cdot \eta\eta_{50\%} + 0.1 \cdot \eta\eta_{30\%} + 0.13 \cdot \eta\eta_{20\%} + 0.06 \cdot \eta\eta_{10\%} + 0.03 \cdot \eta\eta_{5\%}$$

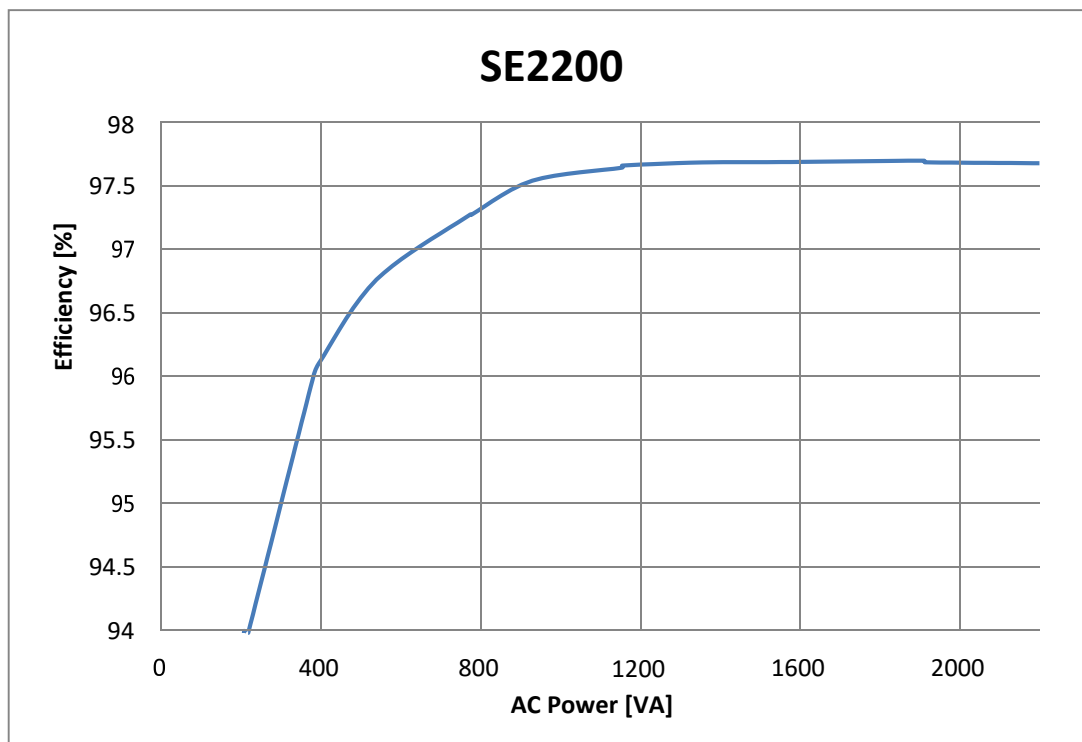
The weighted efficiency of traditional inverters depends on inverter input voltage and is typically measured for various voltages. Due to the fixed string voltage of the SolarEdge inverters they have just one efficiency curve. All measurements were done at a nominal AC grid voltage of 230V_{L-N}.

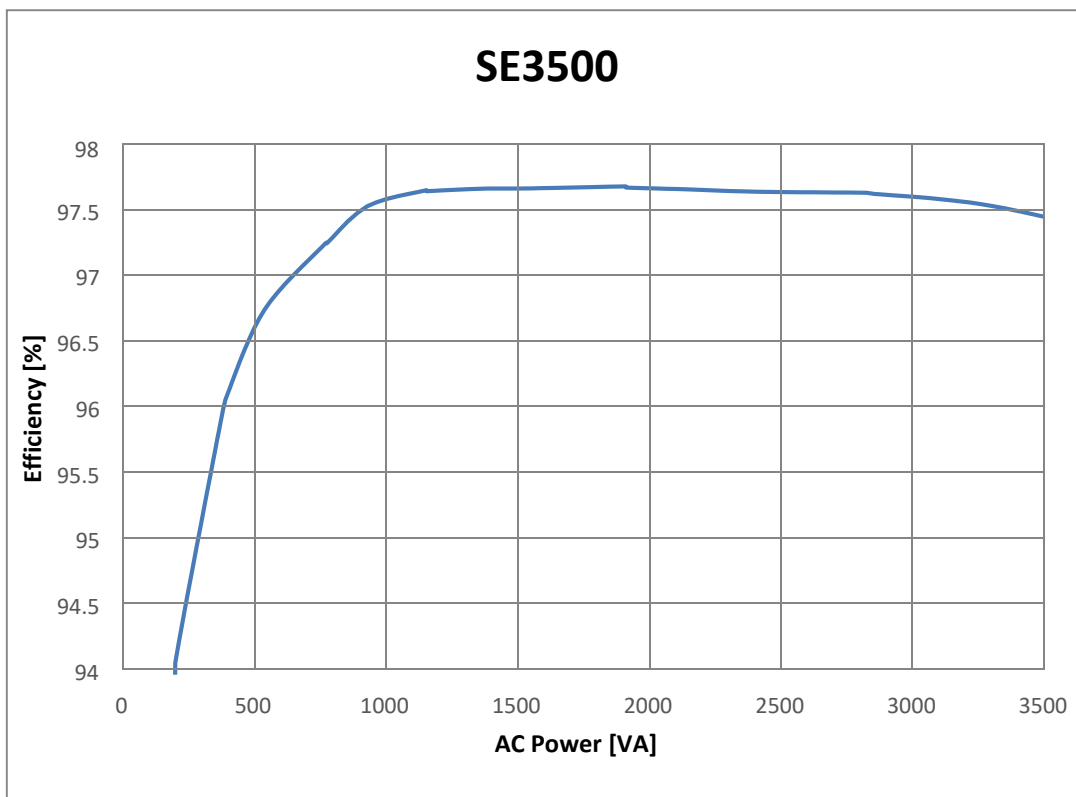
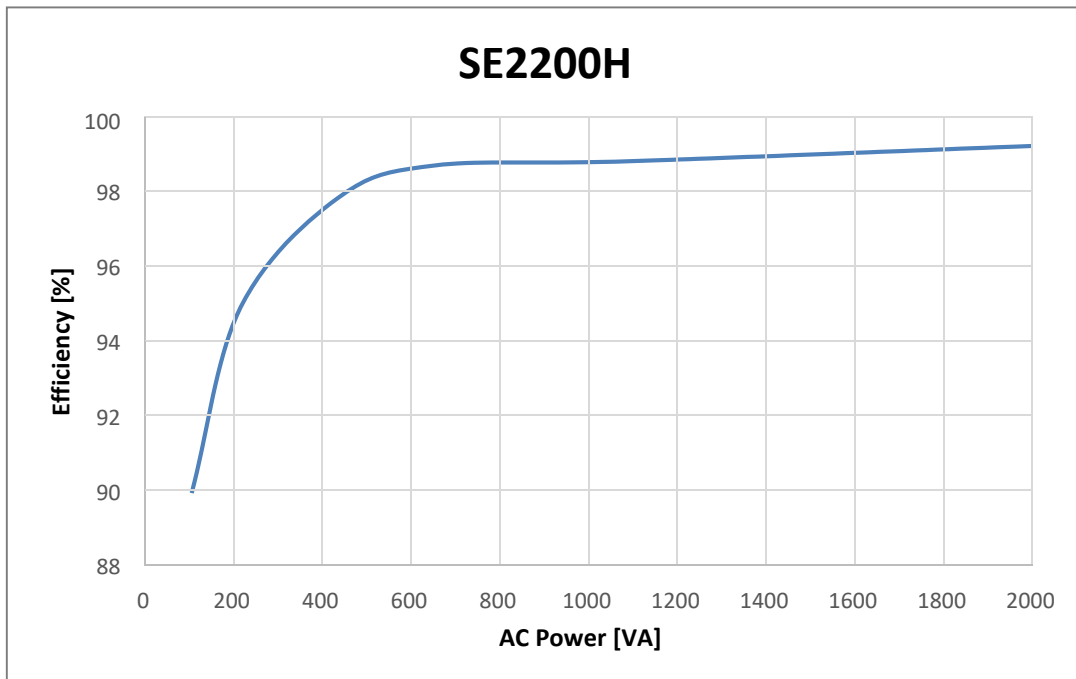
Inverter Efficiency Charts

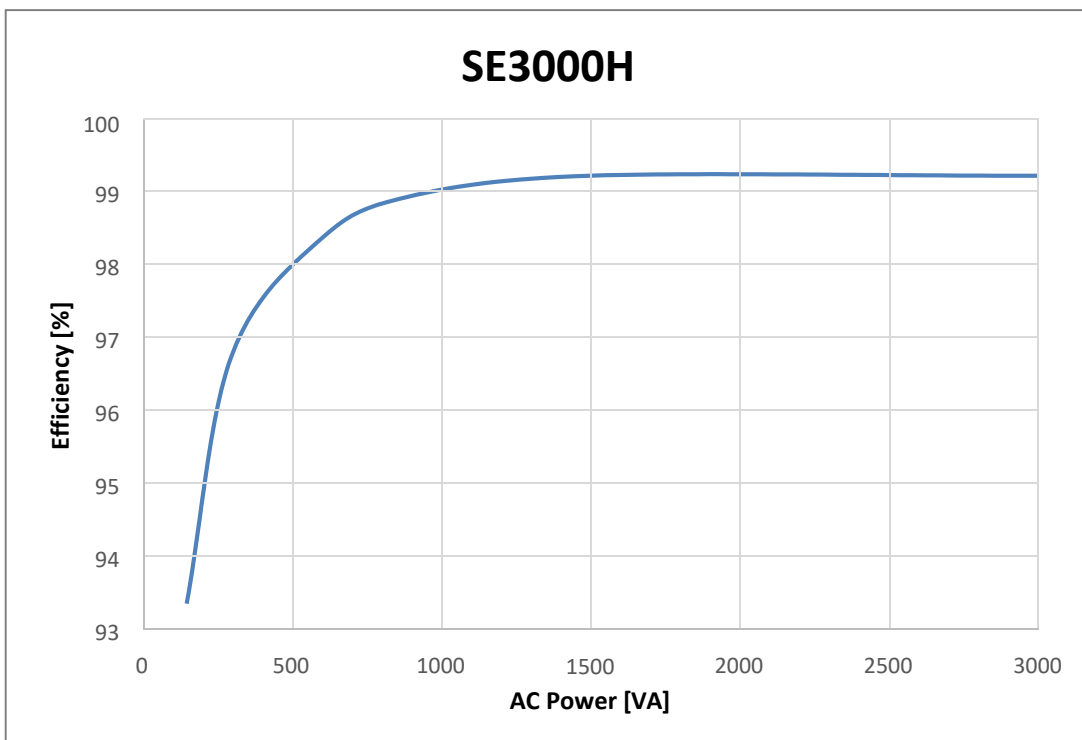
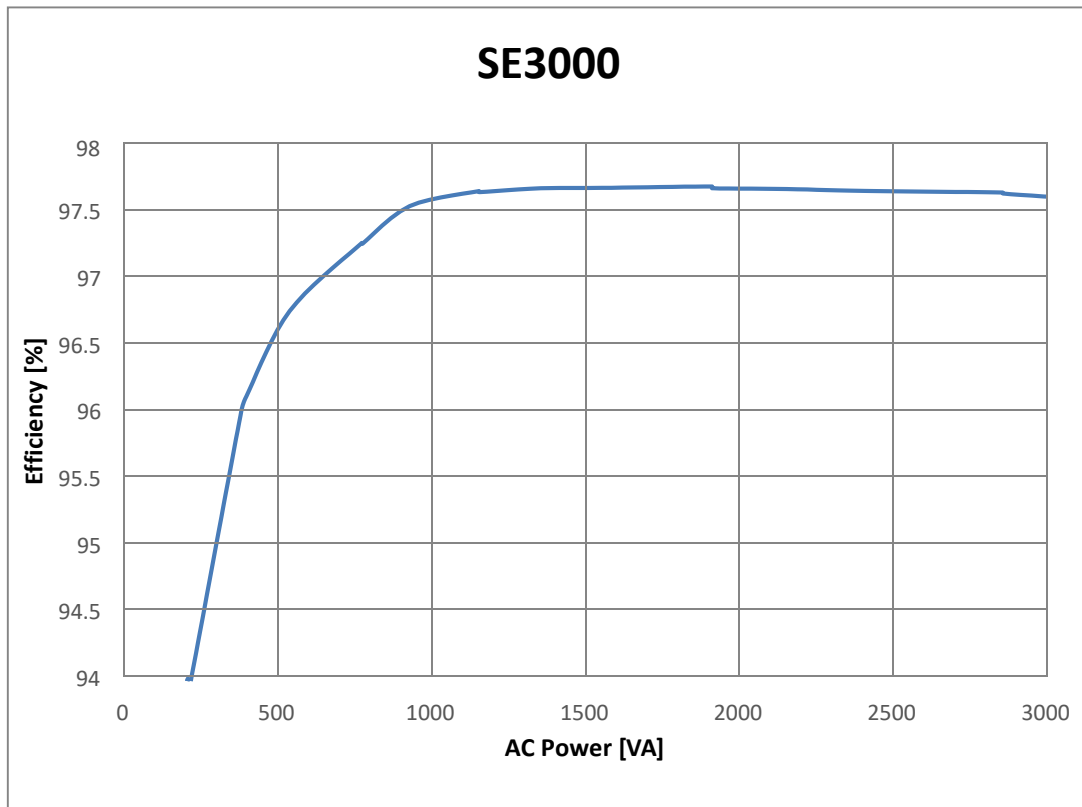
The weighted efficiencies of the SolarEdge inverters are detailed in the inverter datasheets. The efficiency curves of the SolarEdge inverters are presented below.

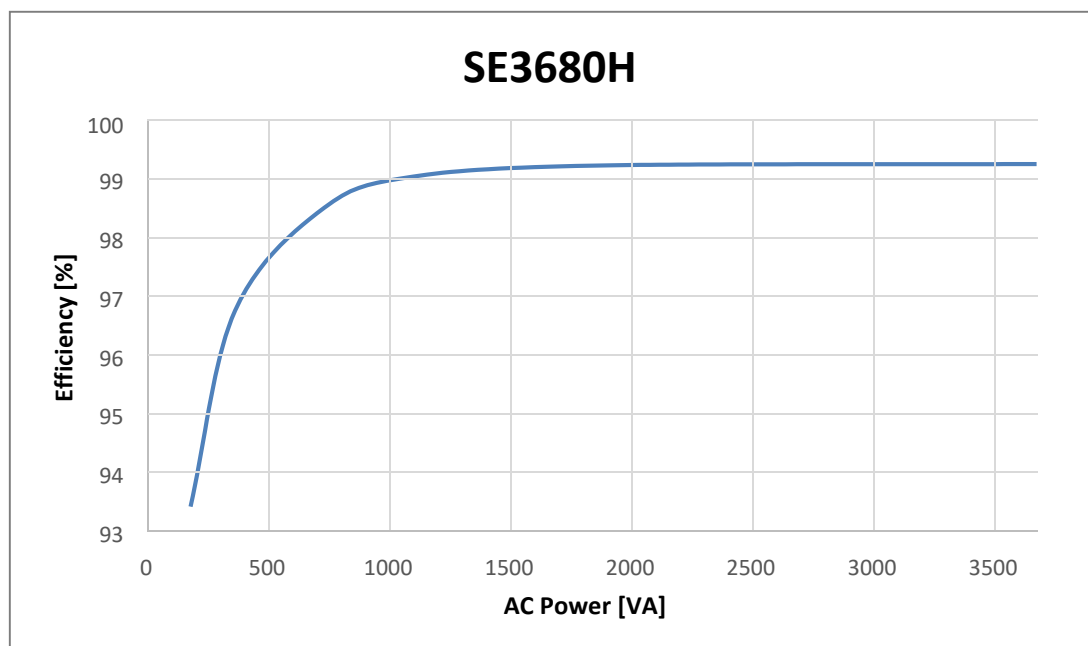
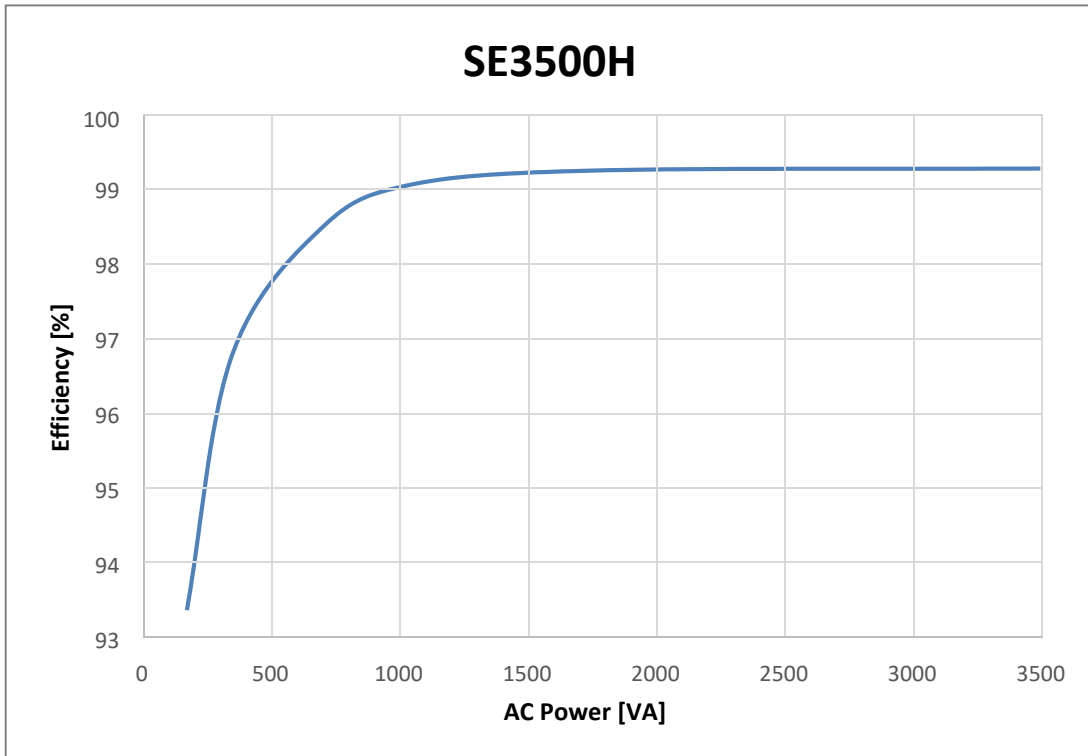
These efficiency curves are correct only for the grid types specified in this document. If connected to other grid types, inverters may produce a different efficiency curve.

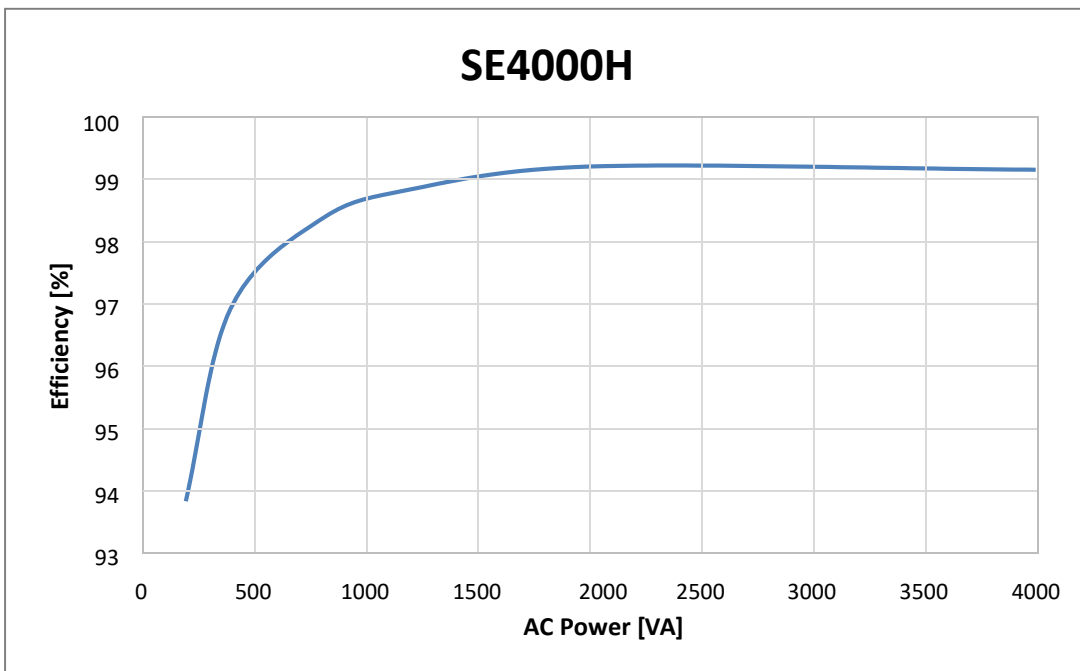
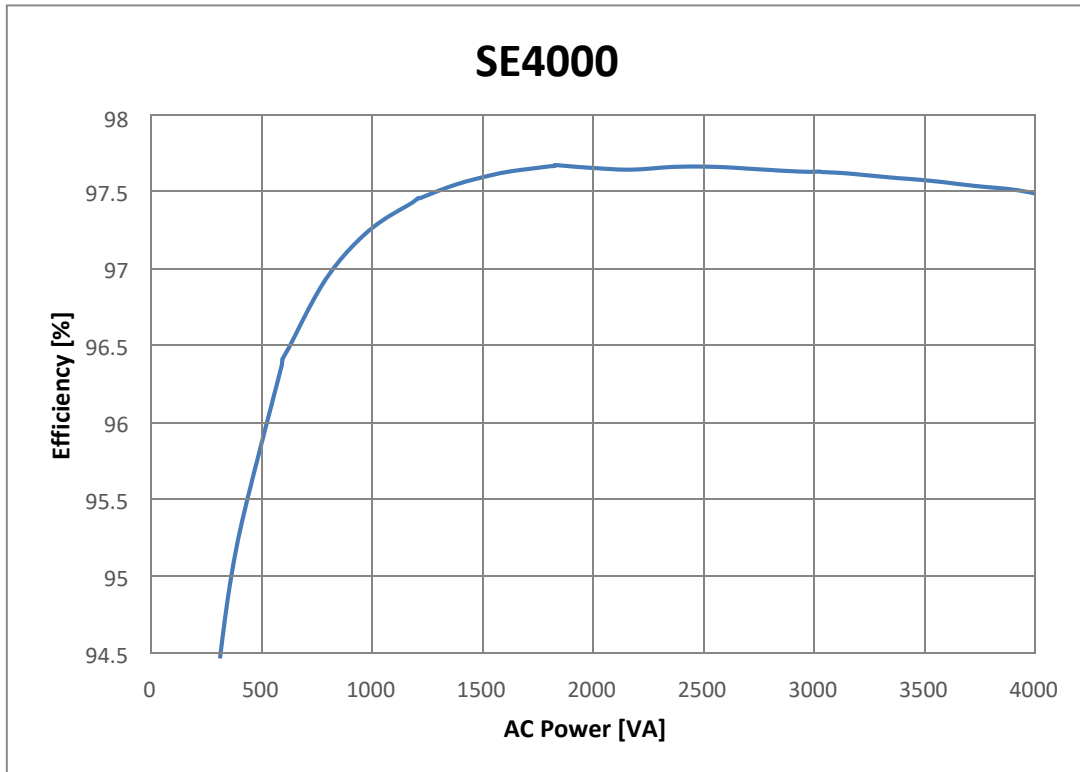
Single Phase Inverters

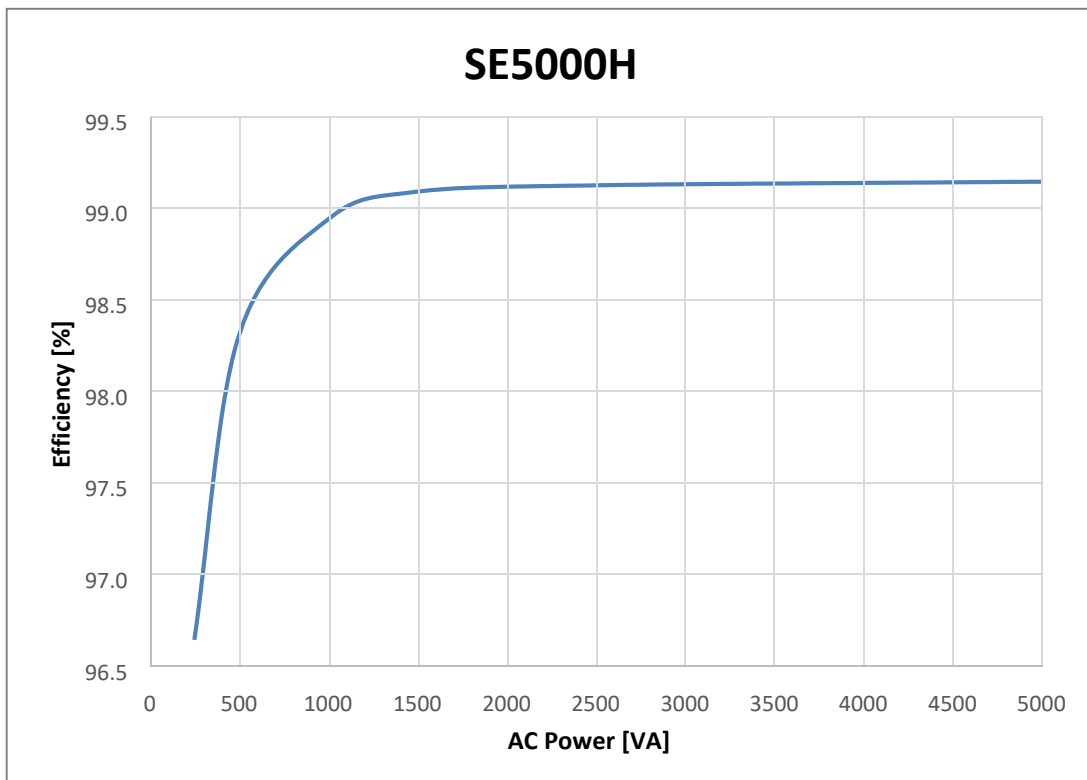
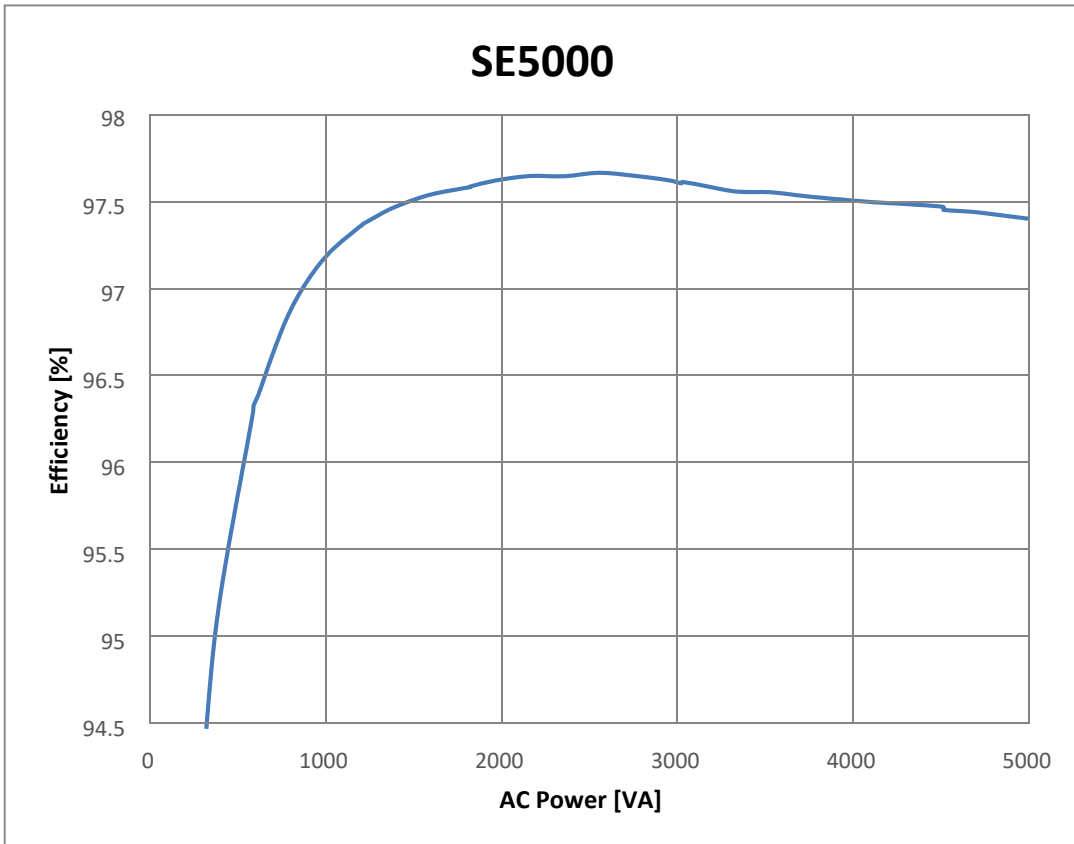


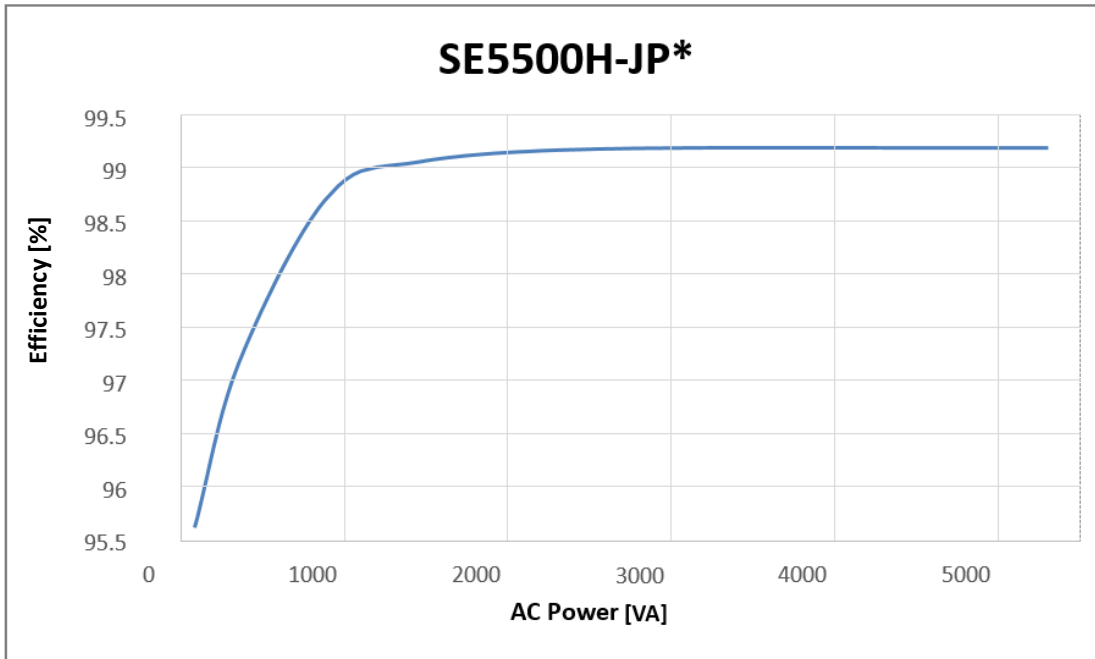




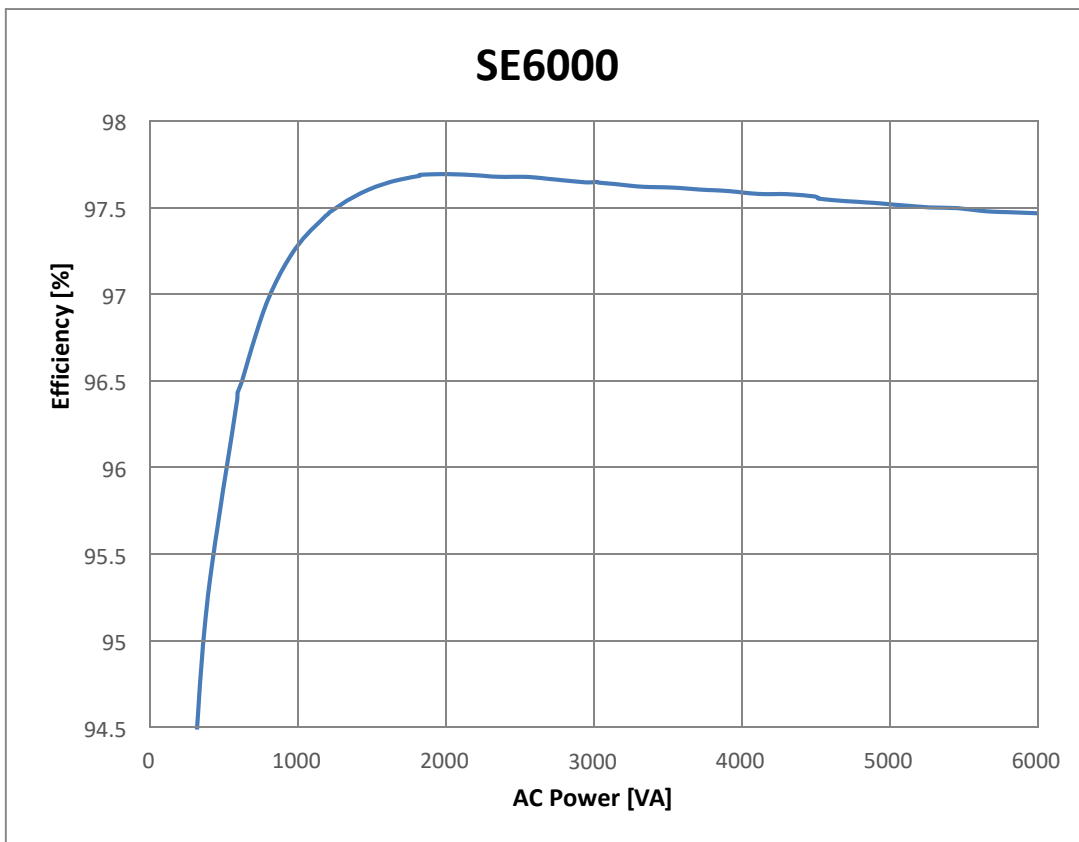


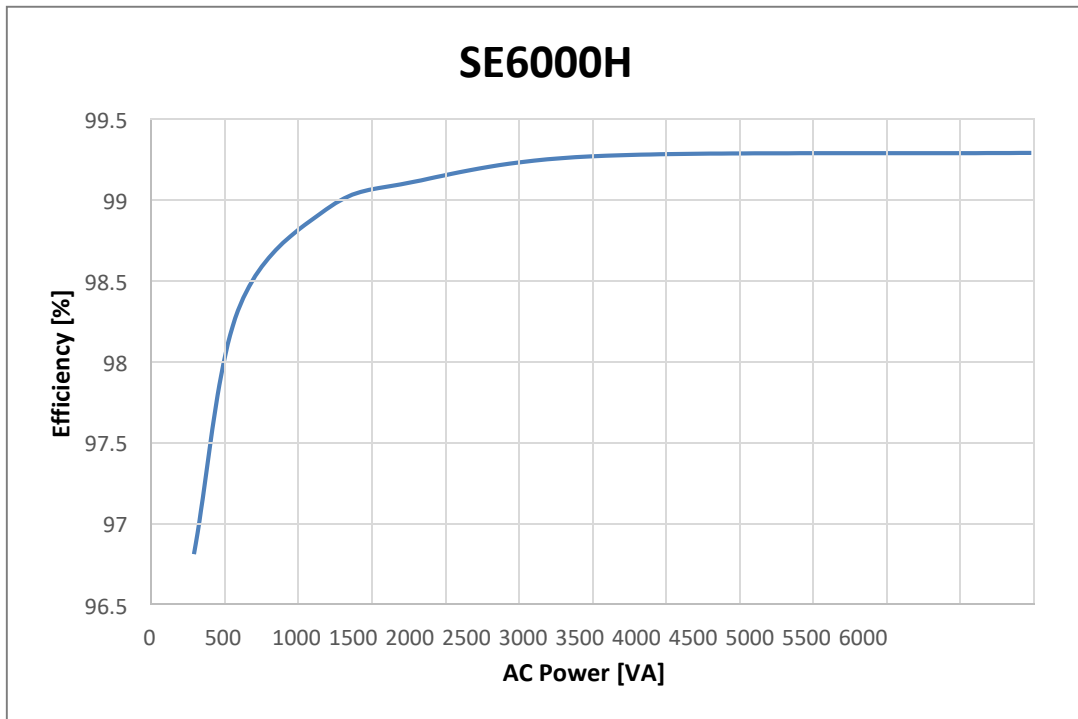






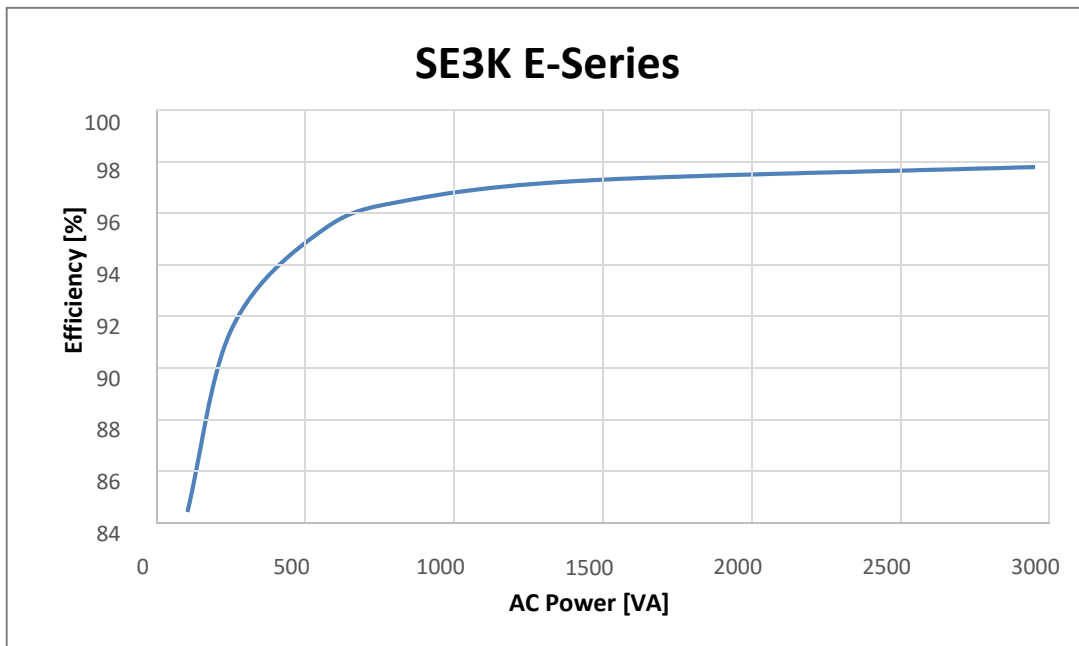
*The SE5500H-JP inverter model is available in Japan only

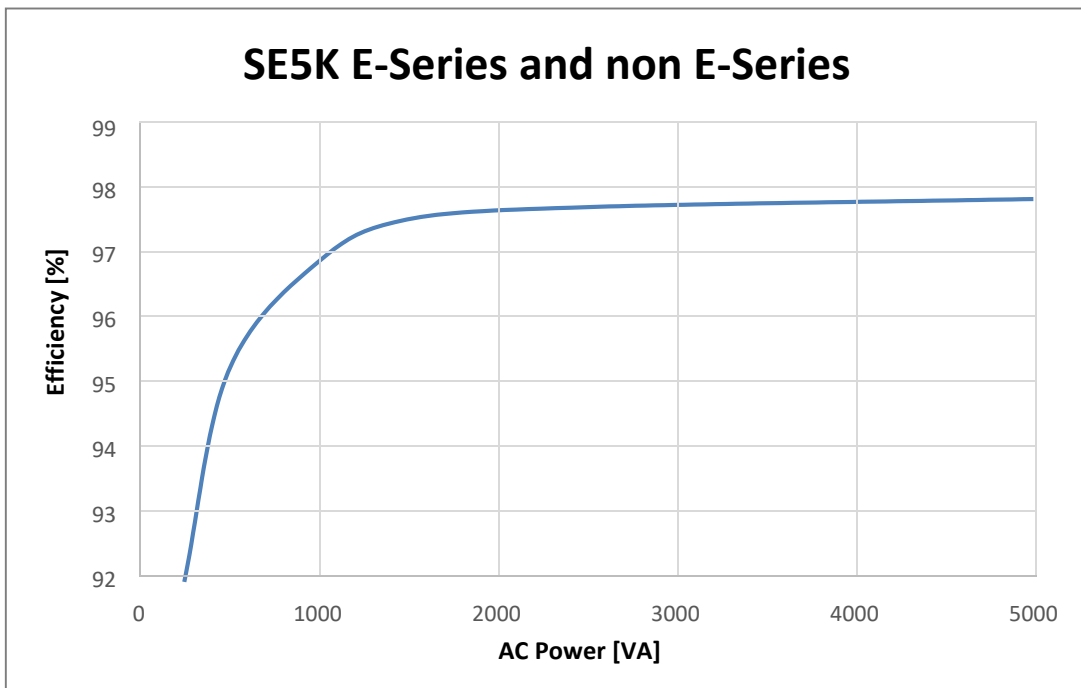
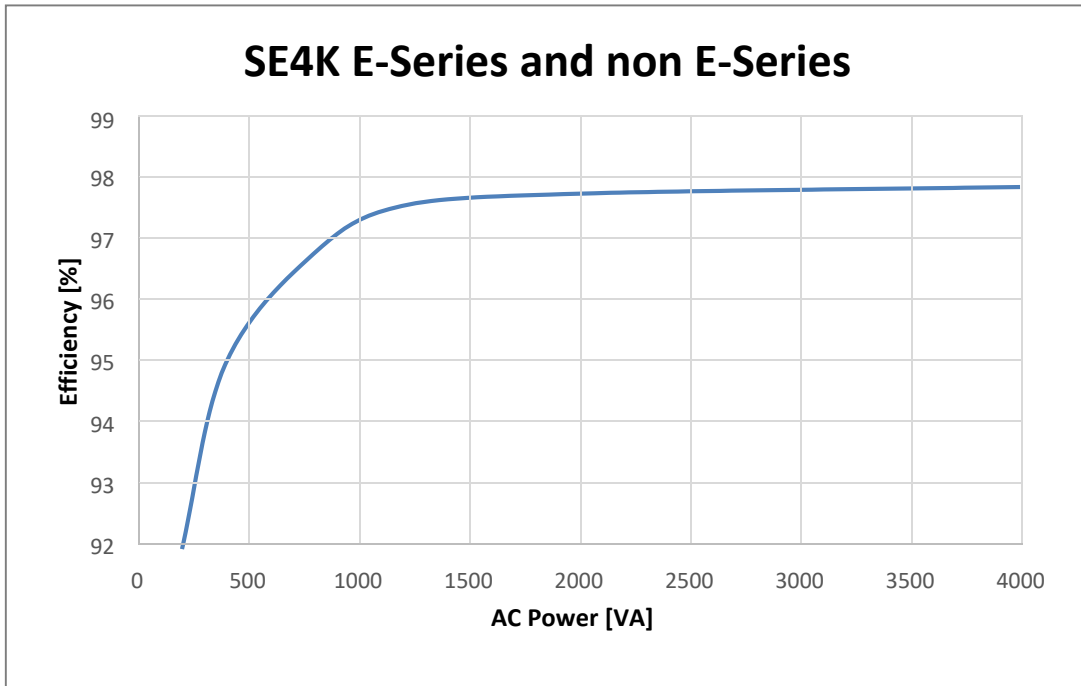


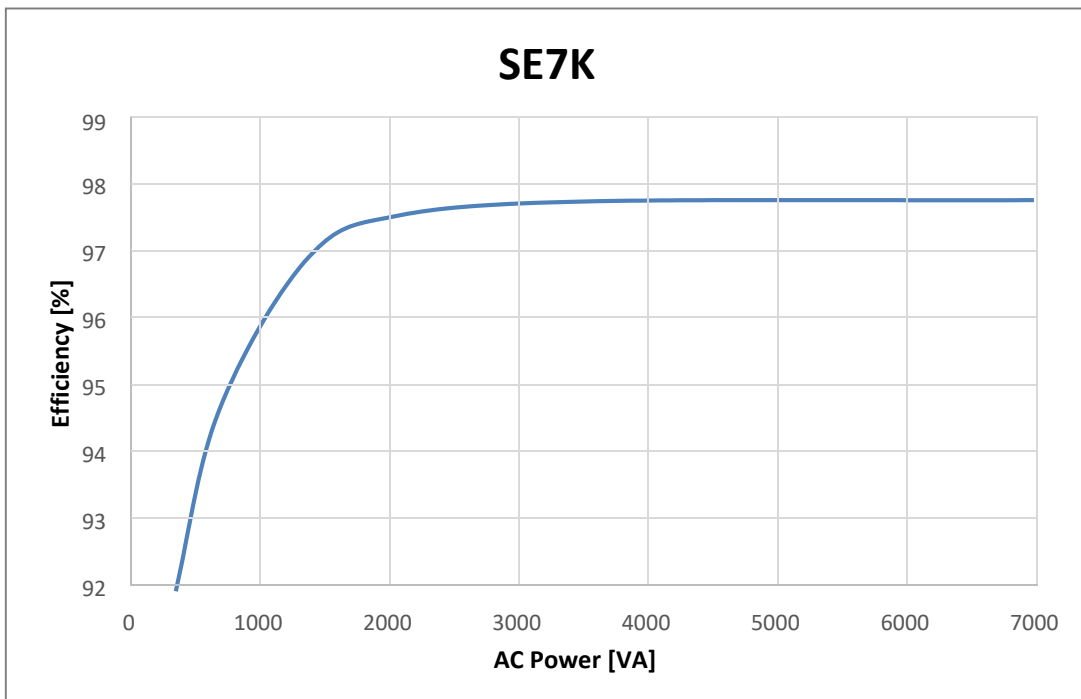
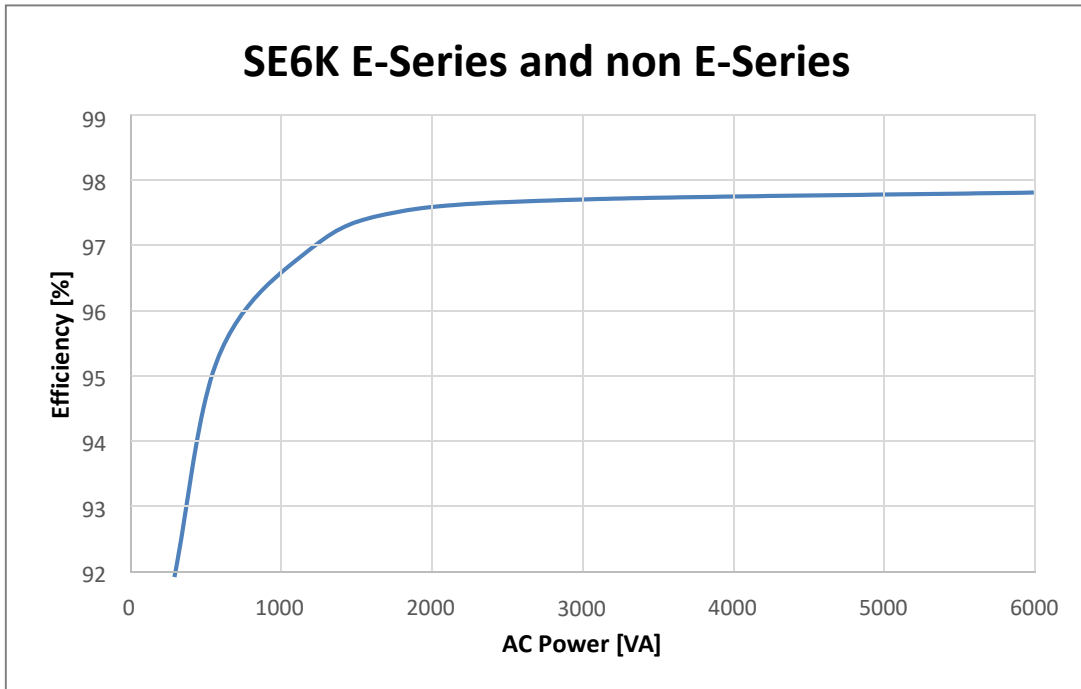


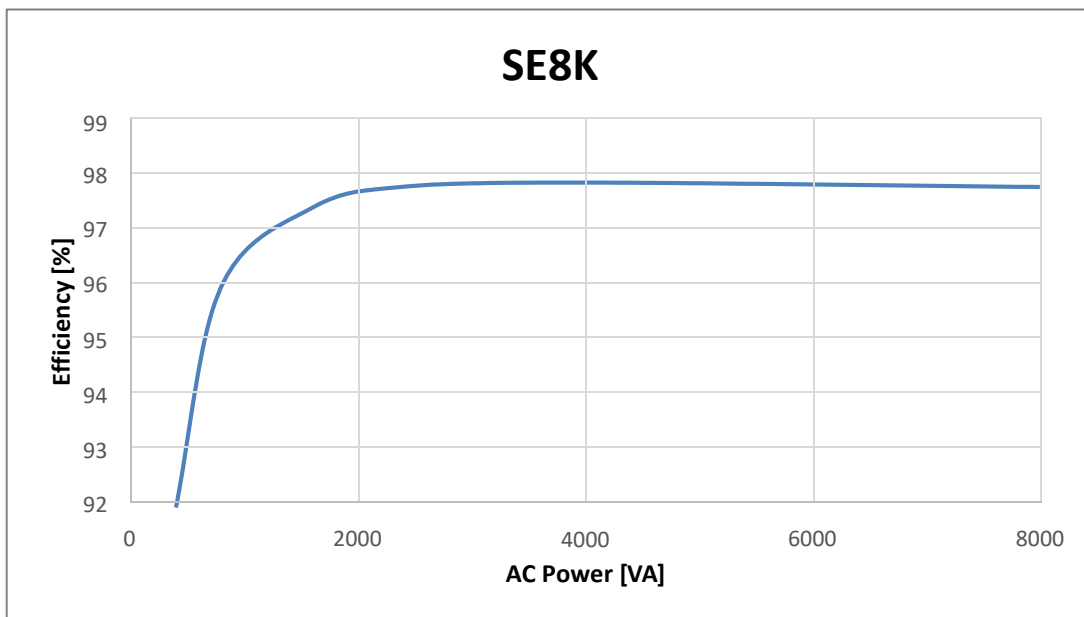
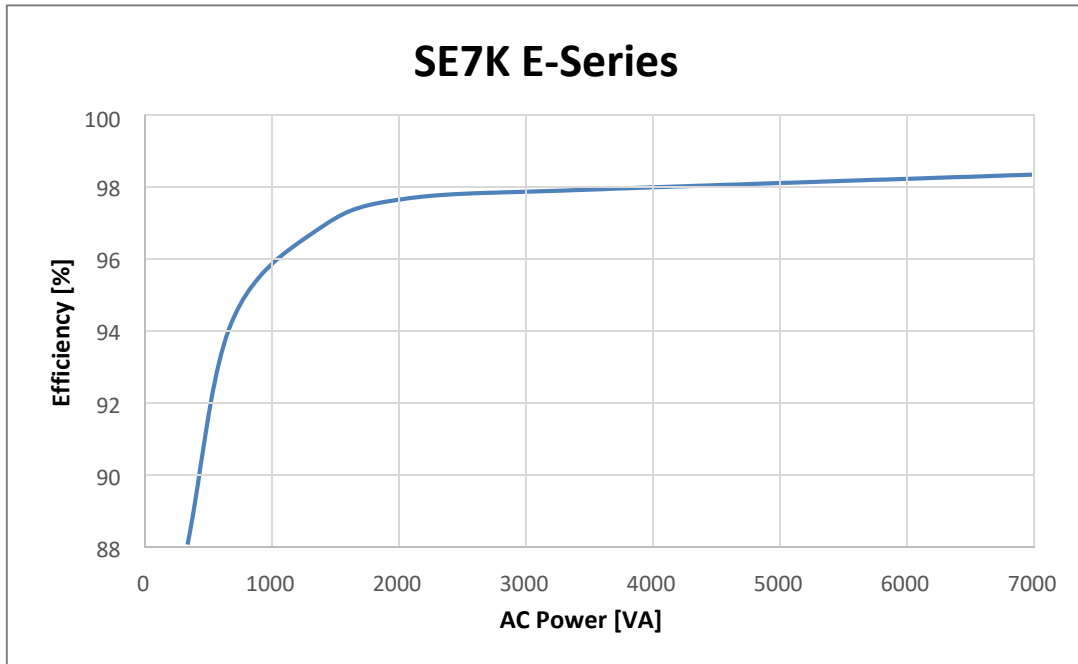
Three Phase Inverters

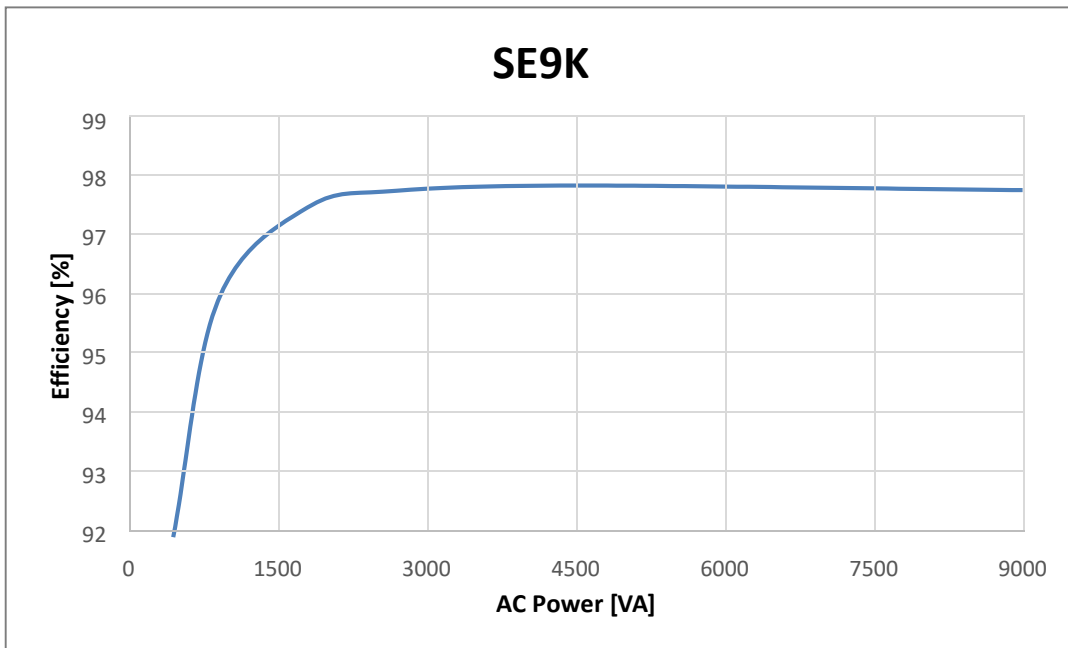
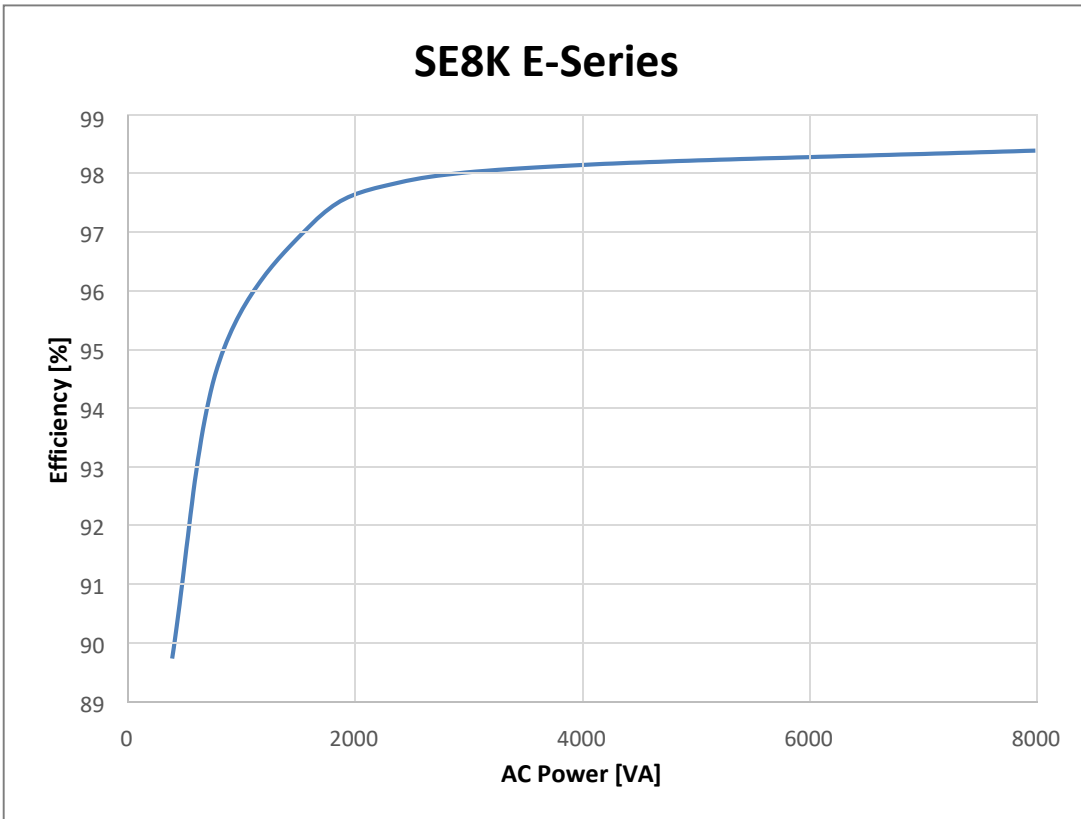
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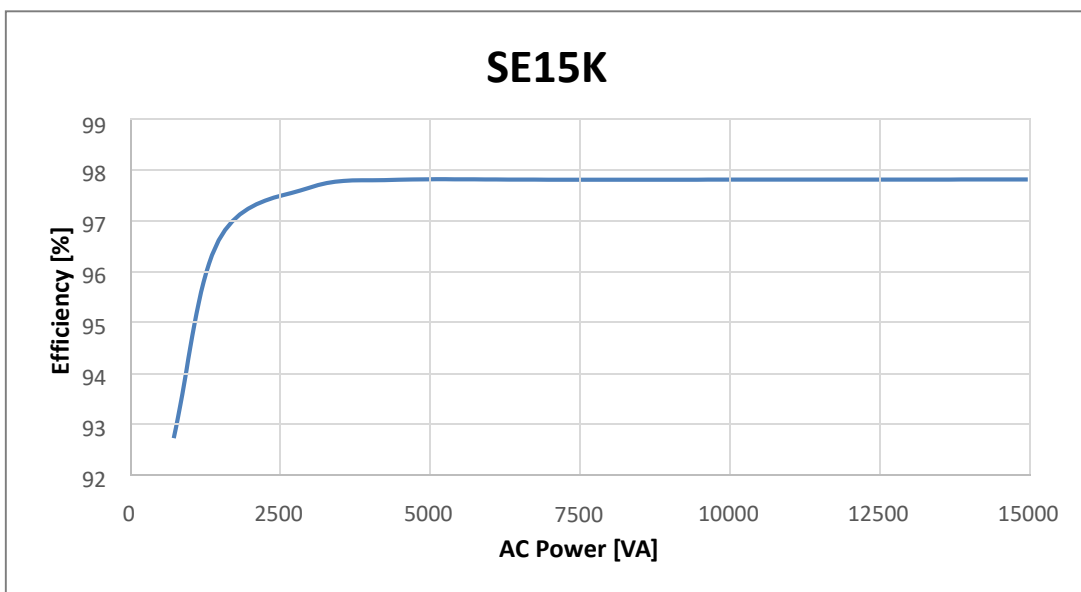
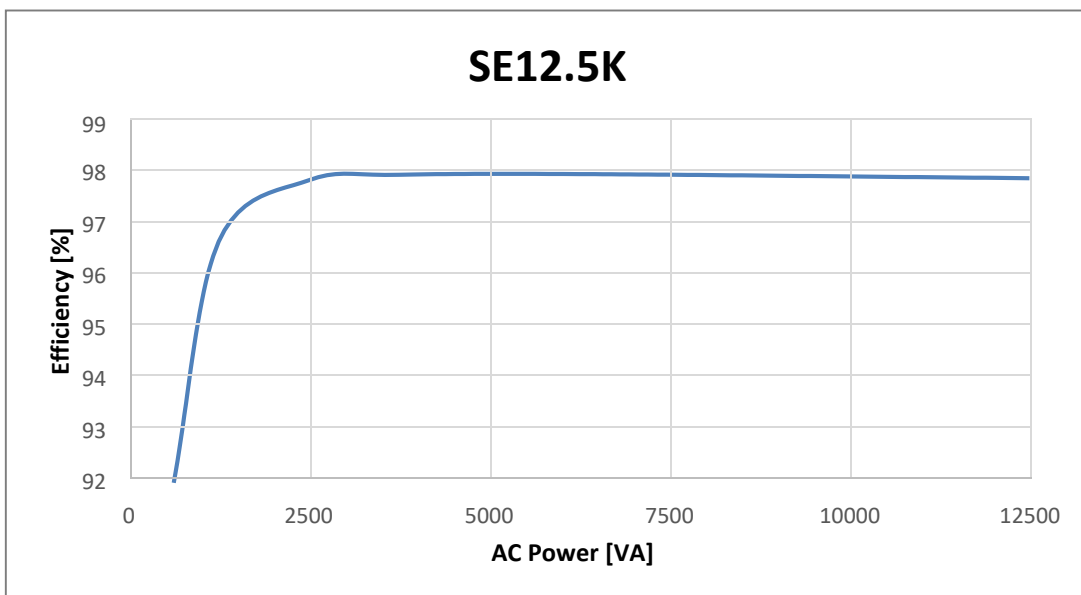
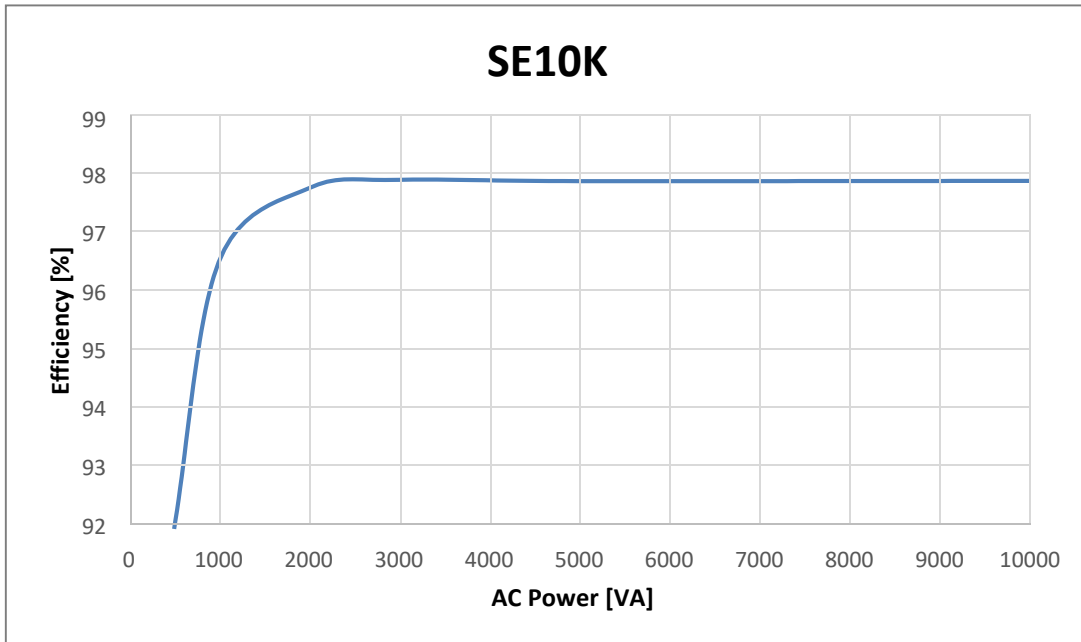


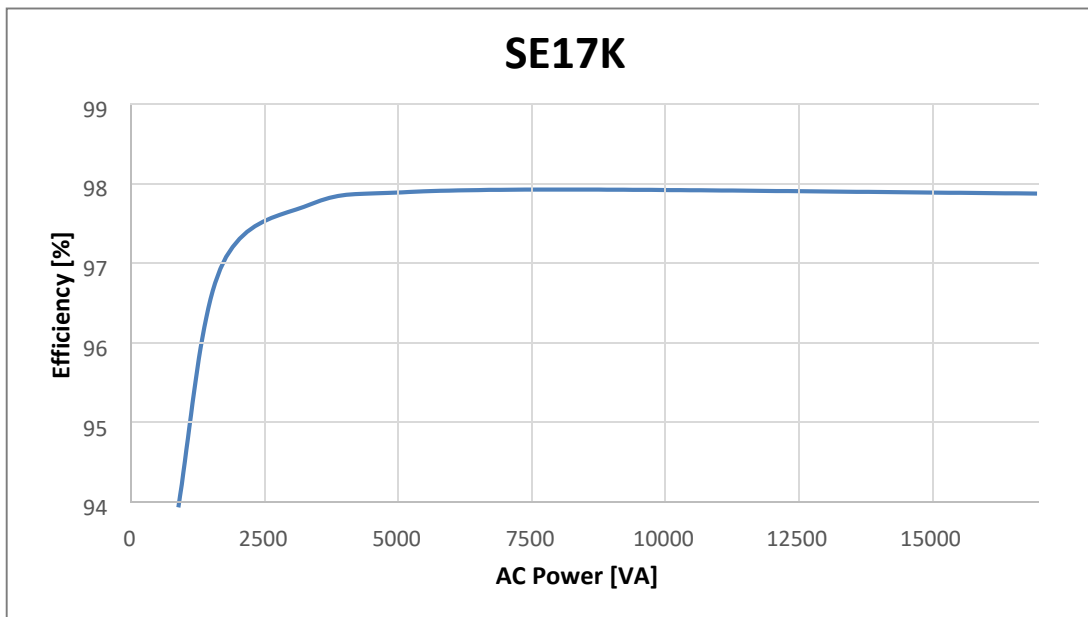
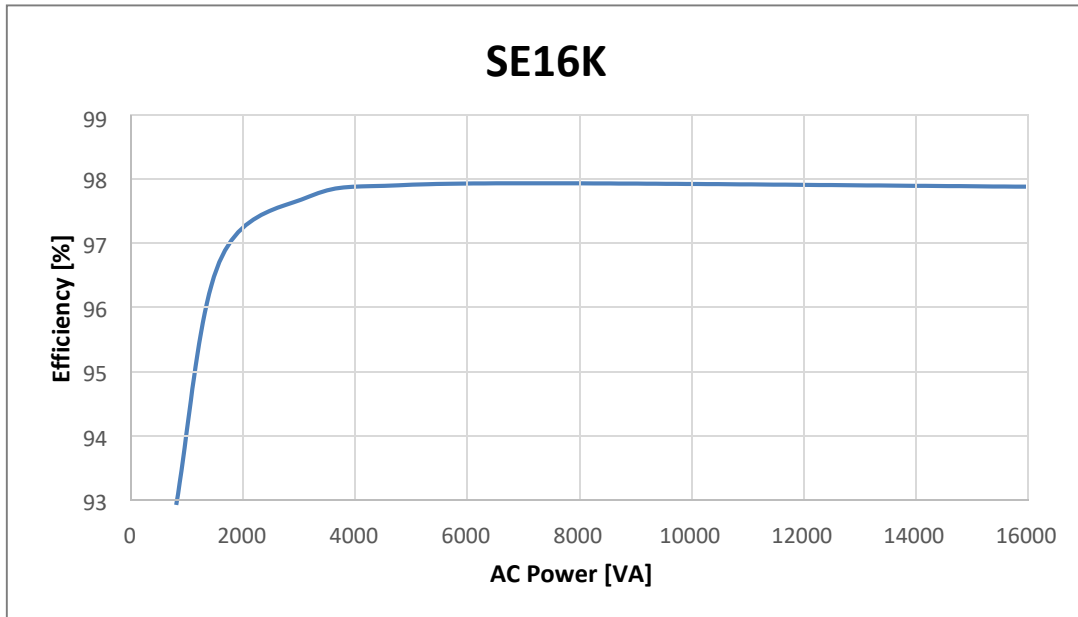


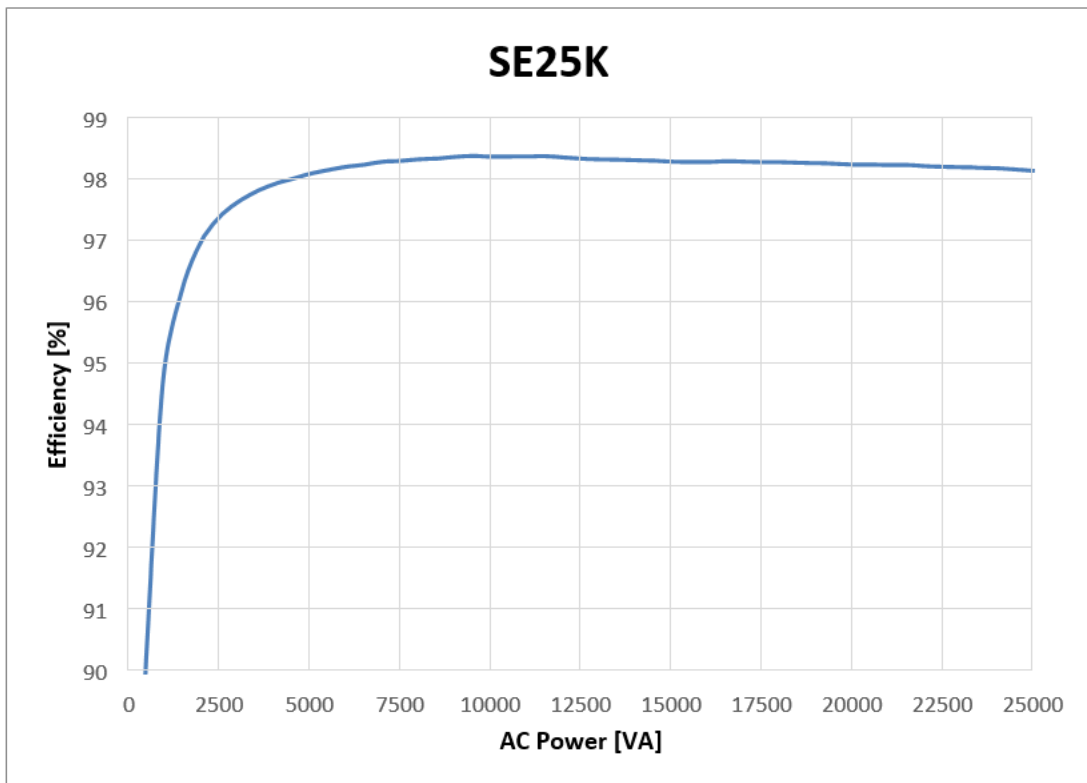
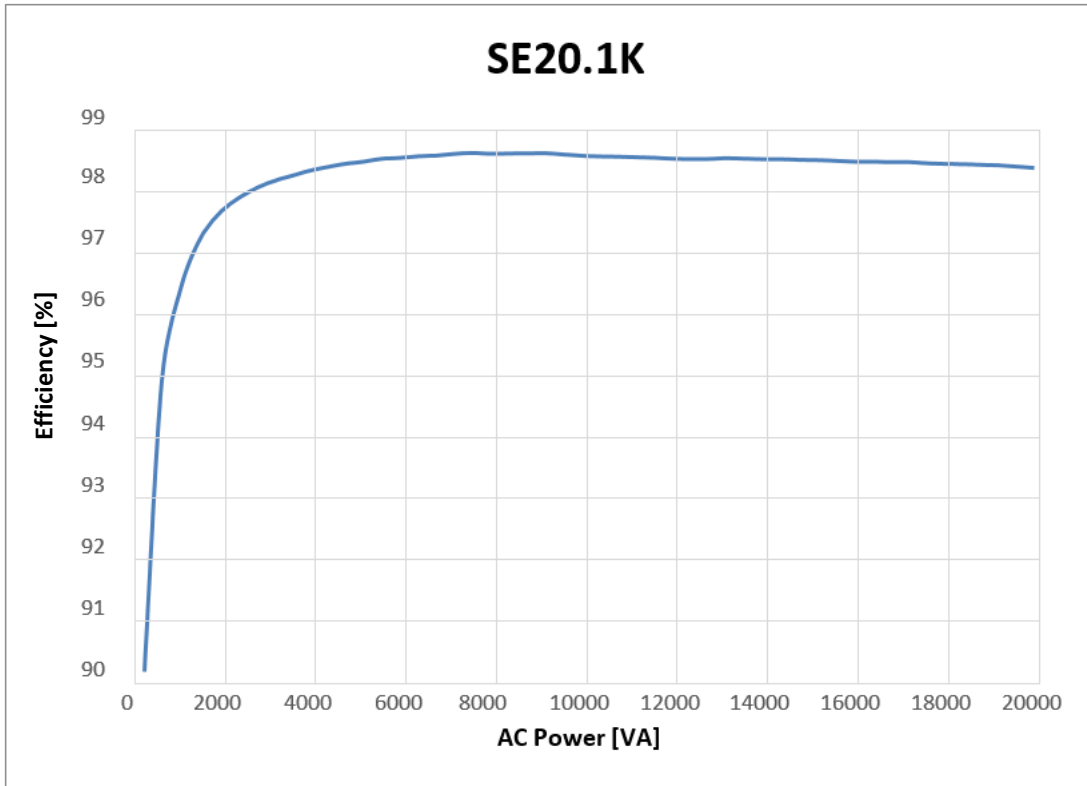


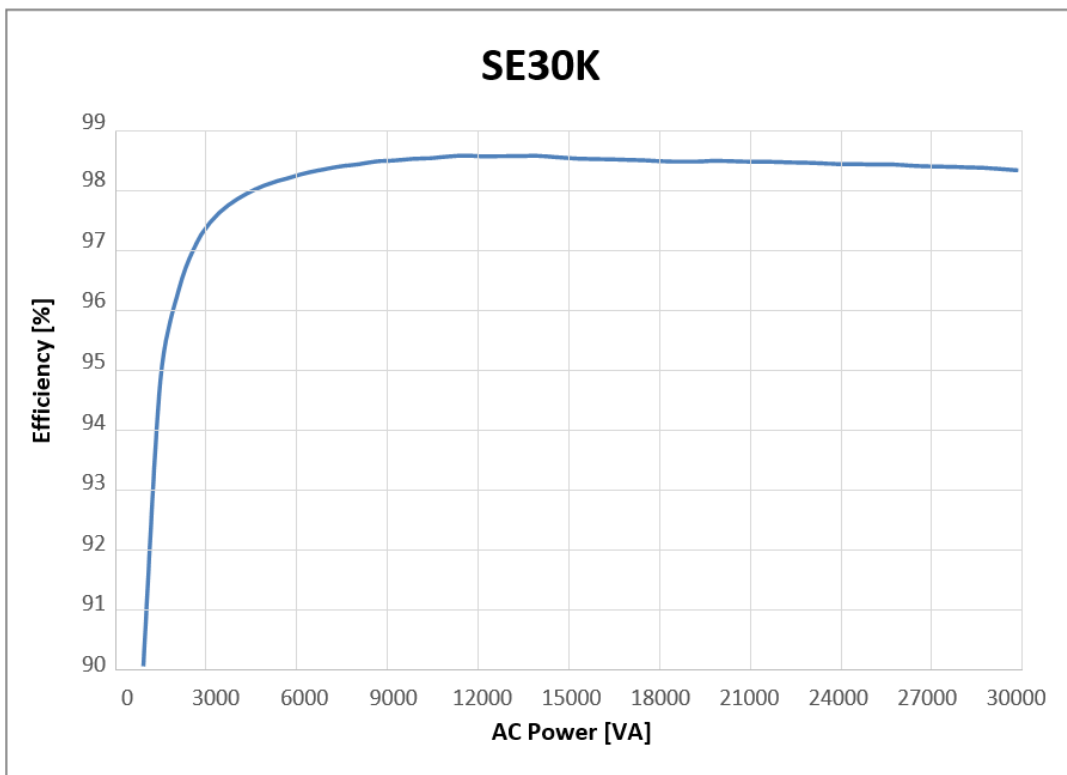
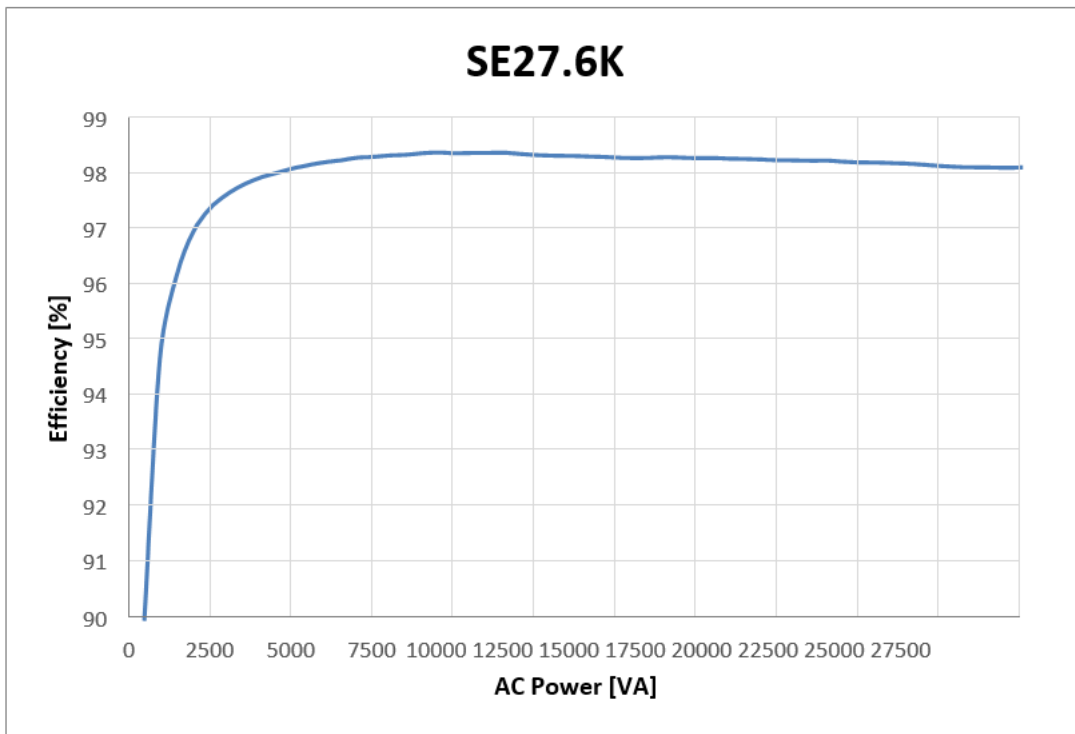


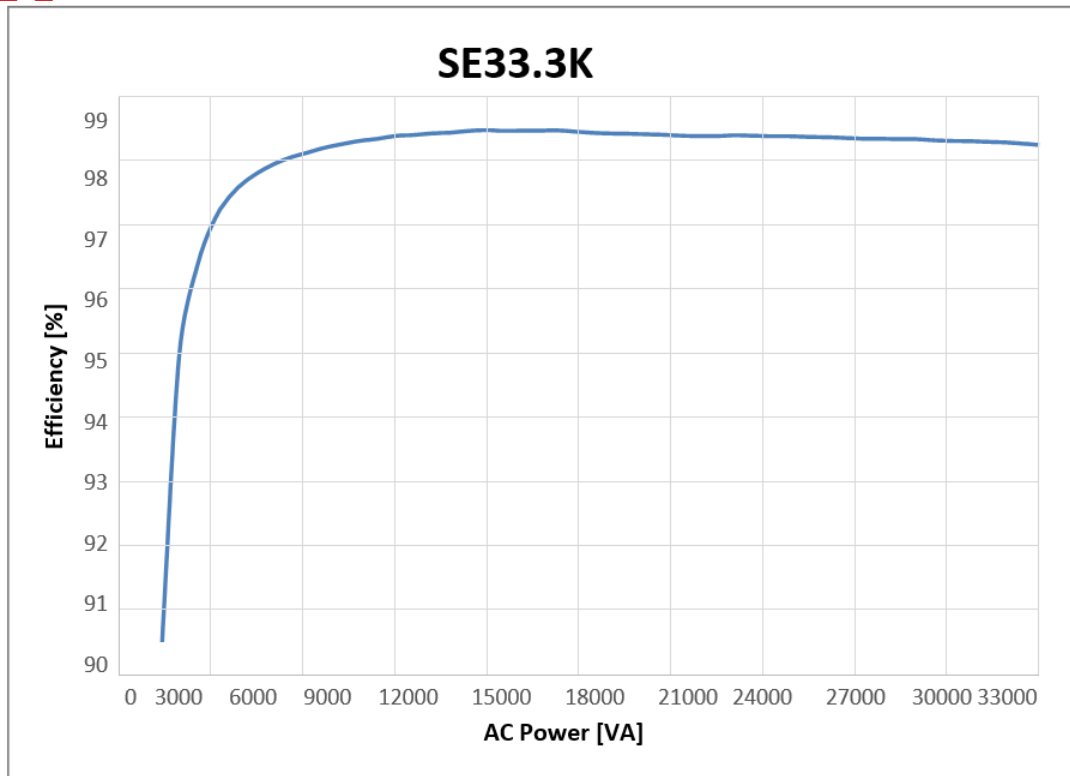




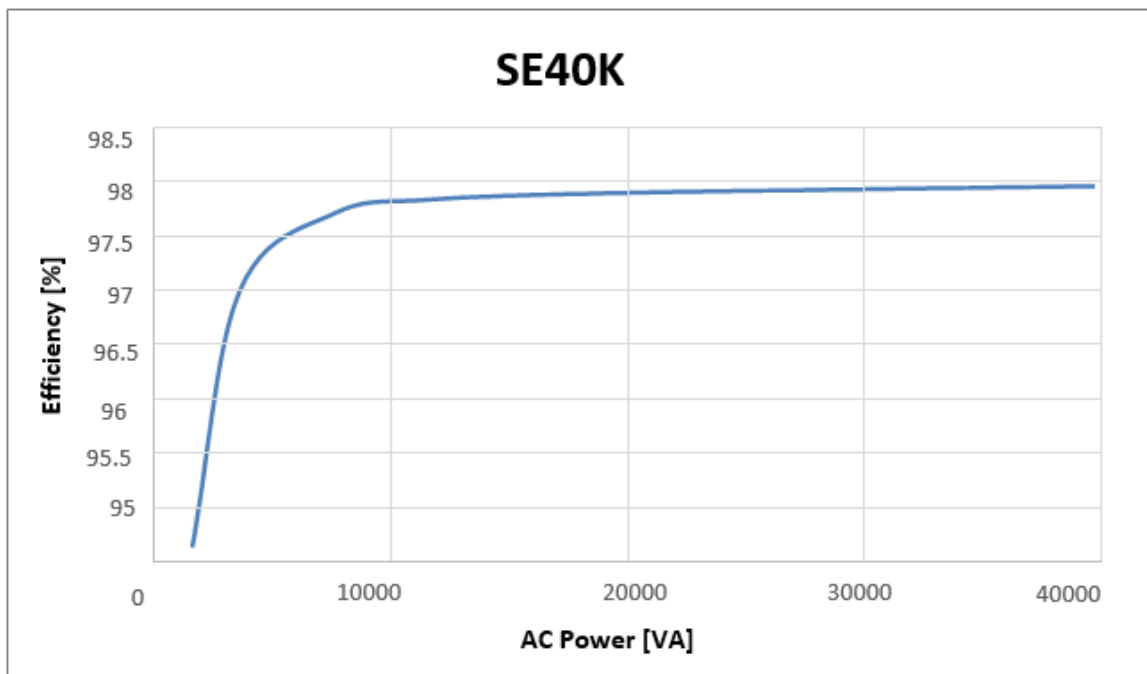
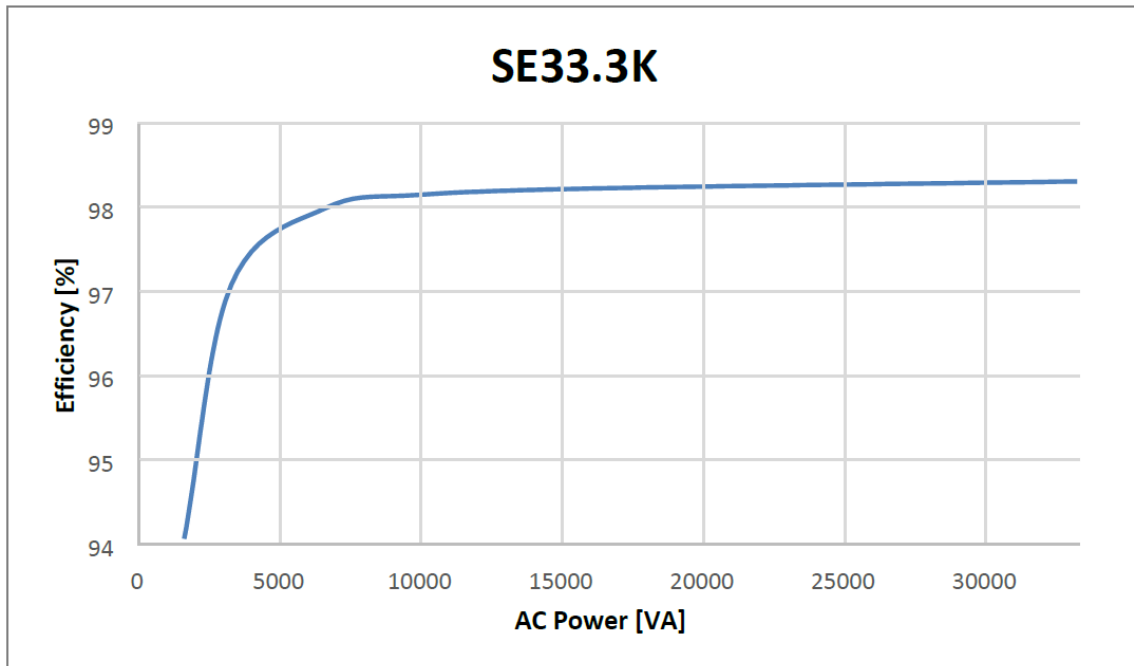




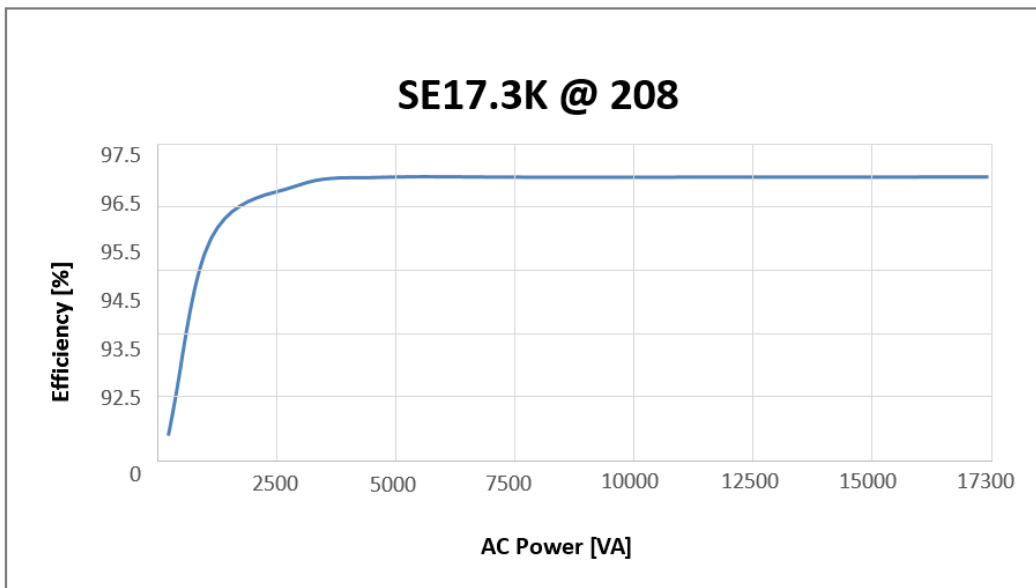
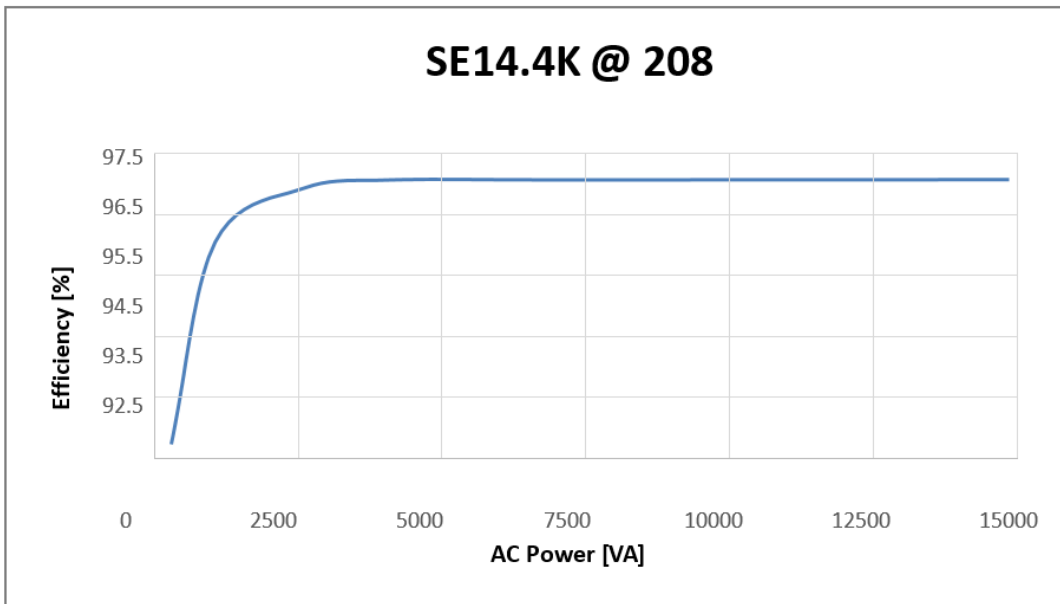




The following models are at a voltage of 277/480V:

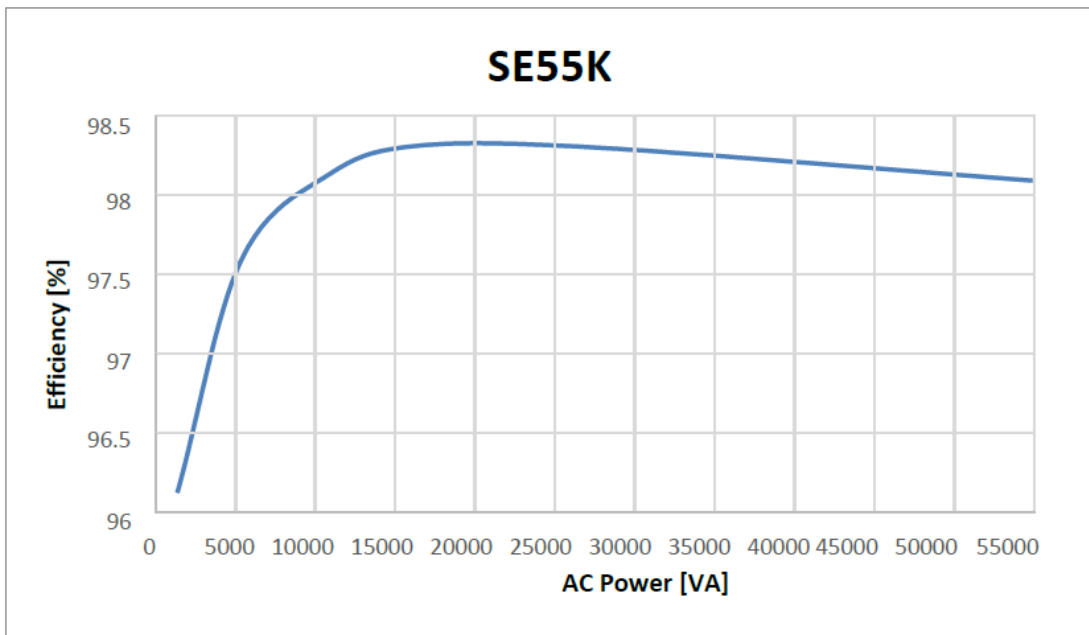
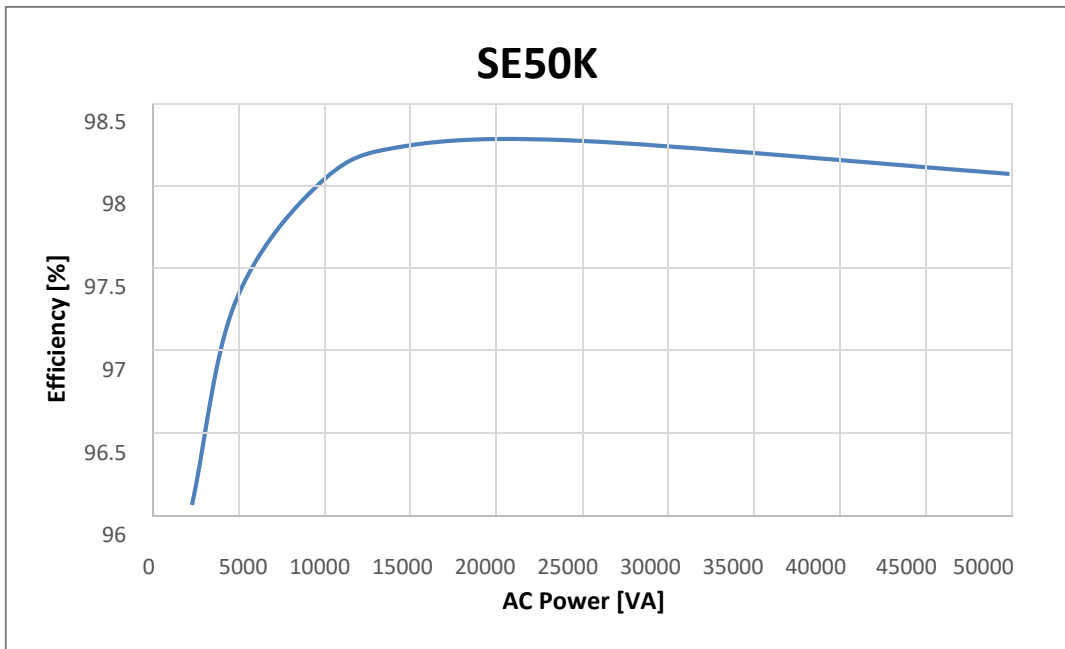


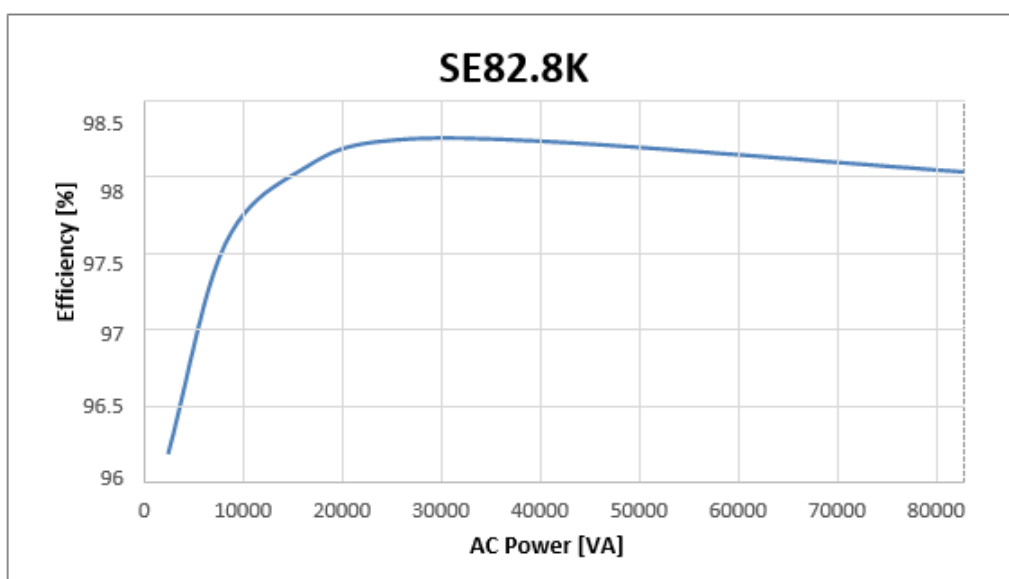
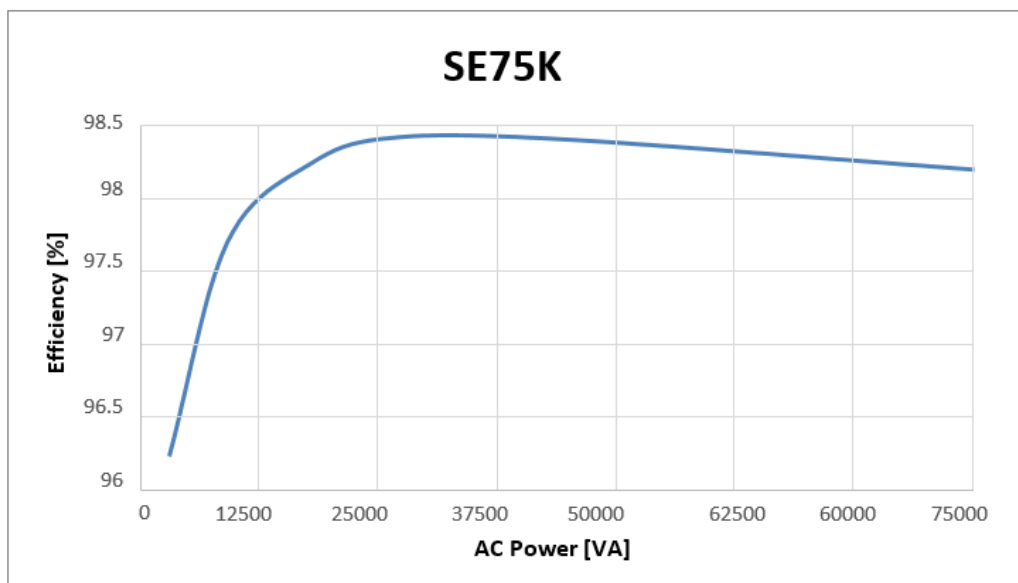
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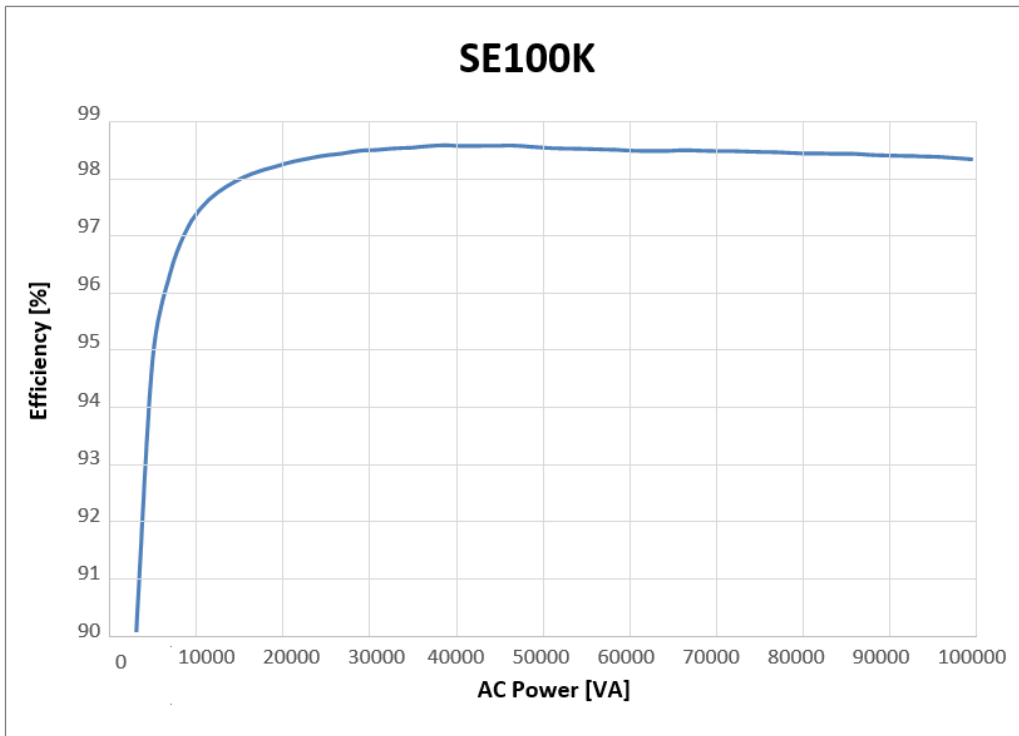


Three Phase Inverters with Synergy Technology

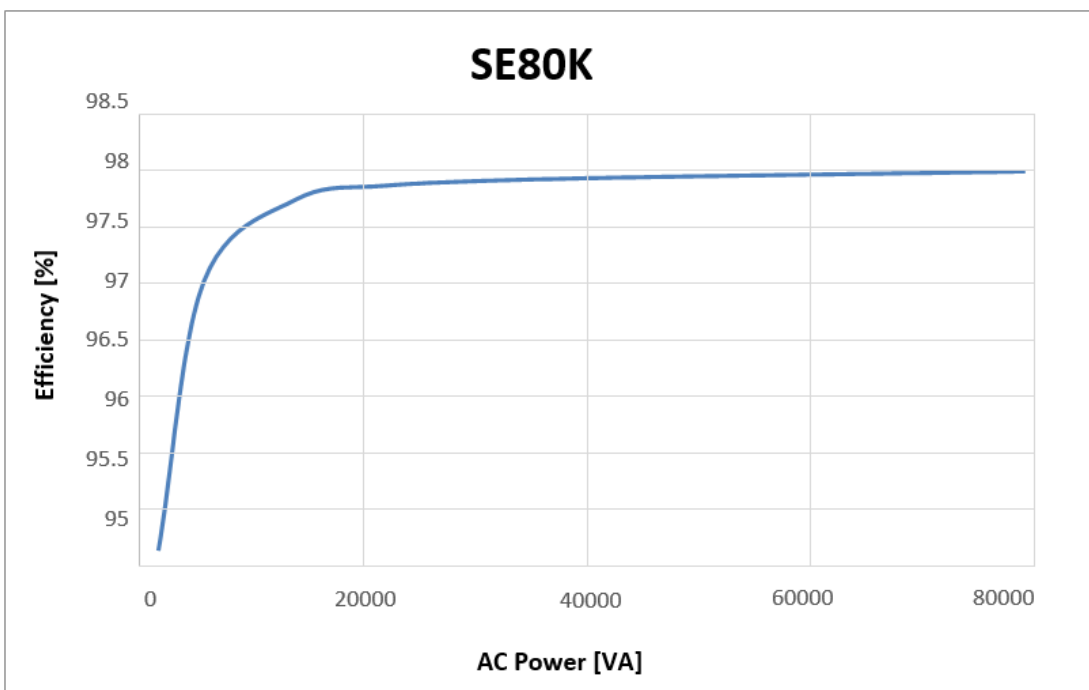
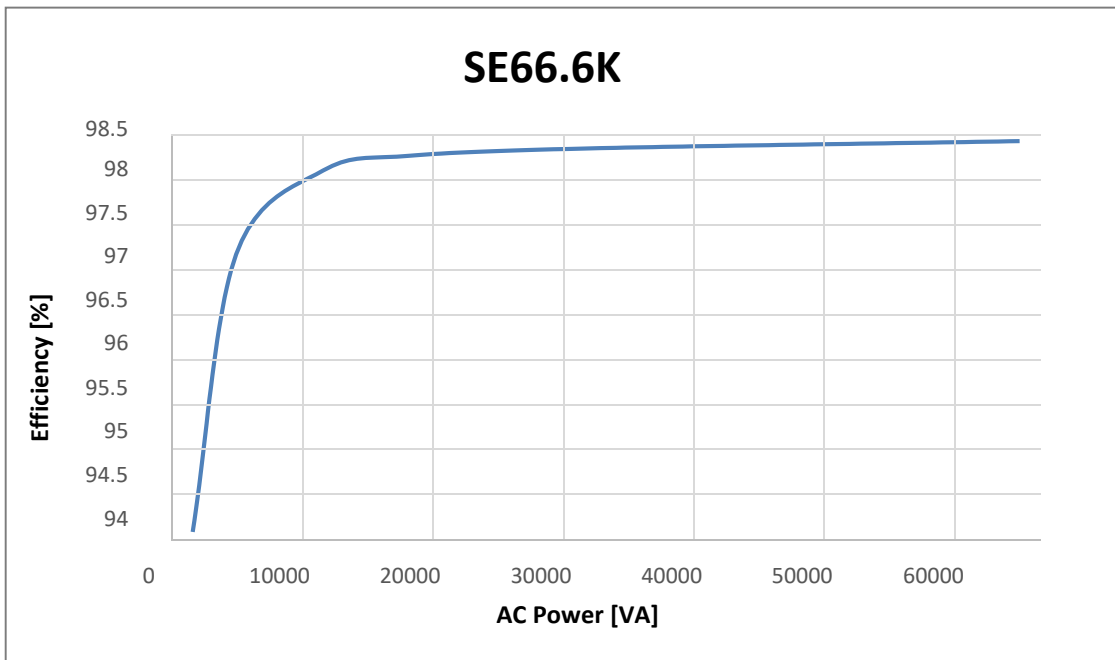
The following models are at a voltage of 230/400V:

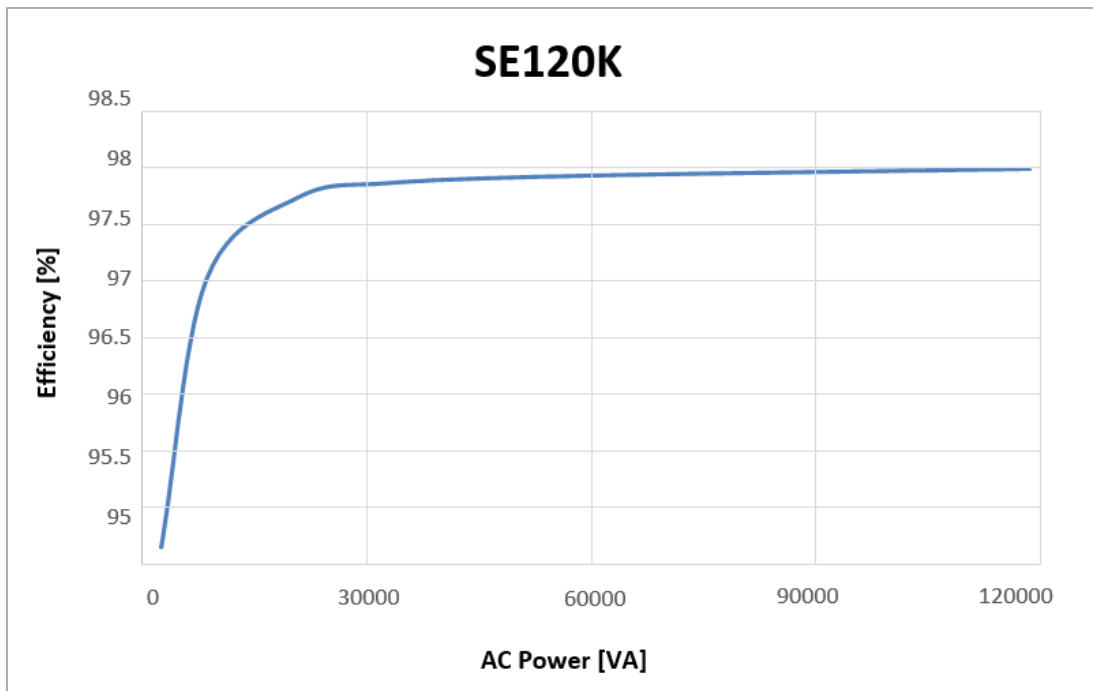
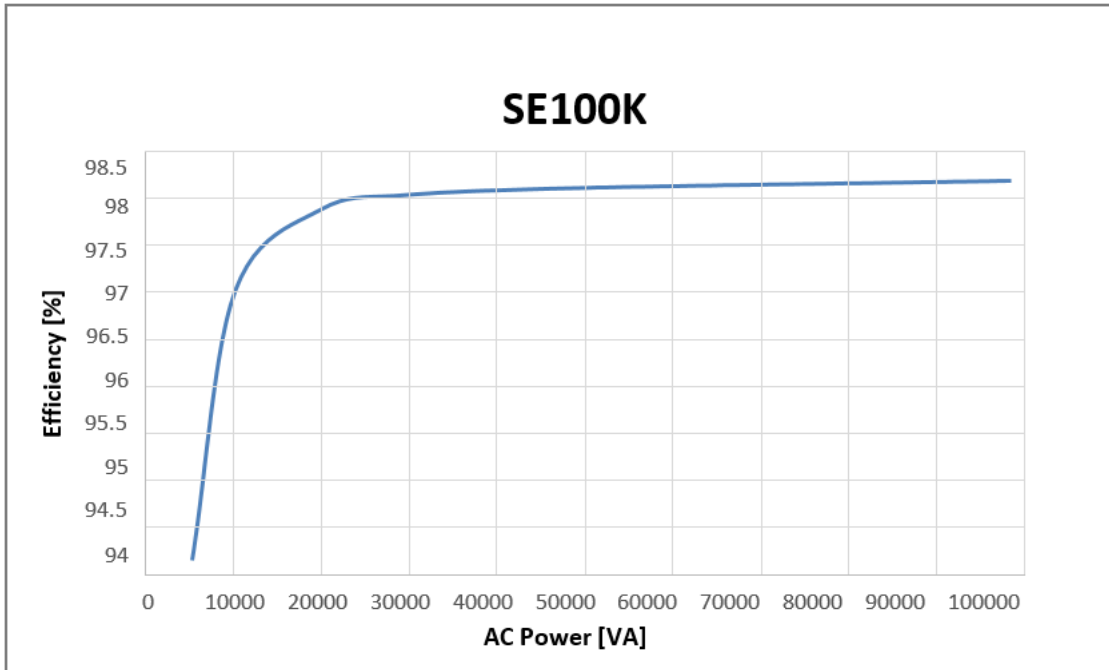






The following models are at a voltage of 277/480V:





The following models are at a voltage of 208V:

