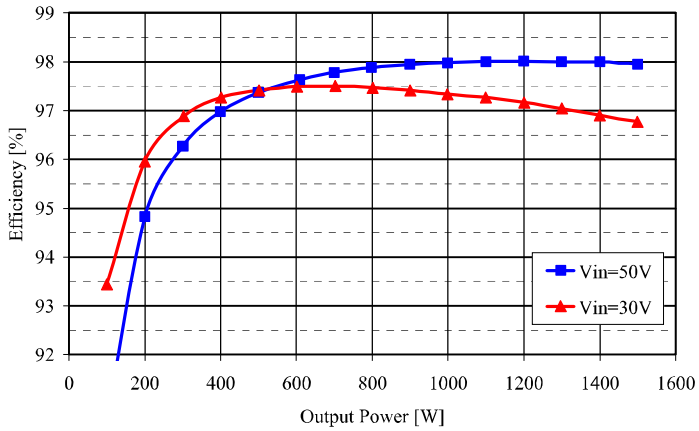

Fig. 23. Measured converter efficiency including drive power.

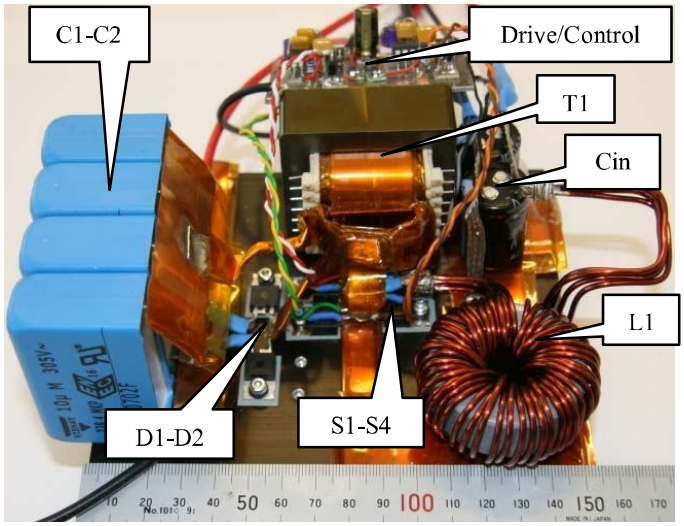

Fig. 24. Photo of 1.5 kW prototype isolated full-bridge boost converter.

3.8 Conclusion on Design of High-Current Converters

The following is a list of some of the conclusions that can be drawn from the analyses presented in this chapter.

- High-power low-voltage converters have extremely low input impedances, requiring extremely low impedance levels in circuits, components and interconnections to achieve high conversion efficiency.
- Extensive interleaving is needed to avoid proximity effect in transformer windings.
- Interleaving of windings and low number of primary turns provide extremely low transformer leakage inductance and stored leakage energy.
- Primary side switch voltage clamp circuits will be bypassed by the extremely low transformer leakage inductance and will thus not work.