

## Soldering Solar Flex Circuits

**Objective** Heat multiple joints on solar flex circuit strips to 500 °F (260°C) within ten seconds for a soldering application.

**Material** Flexible solar panel, Solder Plus Paste 63NC-A, 0.0625" (1.59mm) thick Teflon sheets

**Temperature** 500 °F(260°C)

**Frequency** 278 kHz

**Equipment**

- Ambrell 1 kW induction heating system equipped with a remote workhead with one 1.2  $\mu$ F capacitor
- An induction heating coil designed and developed specifically for this application.

**Process** A specially-designed induction coil is used to provide even heat in the area where the wires on the solar circuits overlap. A very light coat of solder paste is applied to the circuit connections and a small amount of pressure is applied to the Teflon sheets to hold the circuits together. Power is applied for 10 seconds to flow the solder paste and bond the wires to the flex circuits

**Results/Benefits** Induction heating provides:

- Consistent and repeatable results
- Non-contact clean heating
- Flameless process

