Heating aluminum wire to create screens

**Objective**  
To heat aluminum wire to temperature for a wire coating curing application

**Material**  
- Aluminum wire (0.145”/3.7 mm)

**Temperature**  
450 °F (232 °C)

**Frequency**  
18 kHz

**Equipment**  
- Ambrell EKOHEAT 50 kW, 15-45 kHz induction heating power supply with a remote workhead
- A single position, forty turn helical coil (2.5’/0.8 m long) designed and developed for this application

**Process**  
Temperature indicating paint was used to indicate when the wire met temperature. It took just 3 seconds for the wire to achieve 450 °F (232 °C). In production, there will be a coating which may require slightly more energy. Since it was not included during testing a precise number cannot be given, but heating time should be in that vicinity.

**Results/Benefits**  
- **Speed:** Induction will double production due to more rapid heating than infrared lamps can offer; with induction 100 feet per minute can be run instead of 50 feet per minute with infrared
- **Repeatability:** Induction is highly repeatable and easy-to-integrate into manufacturing processes
- **Working Environment:** Induction introduces less heat into the work environment than competitive processes
- **Applications Lab:** This client was working with a competitor but decided to work with Ambrell due to Ambrell’s superior responsiveness and expertise
The induction coil with the wire inside it.