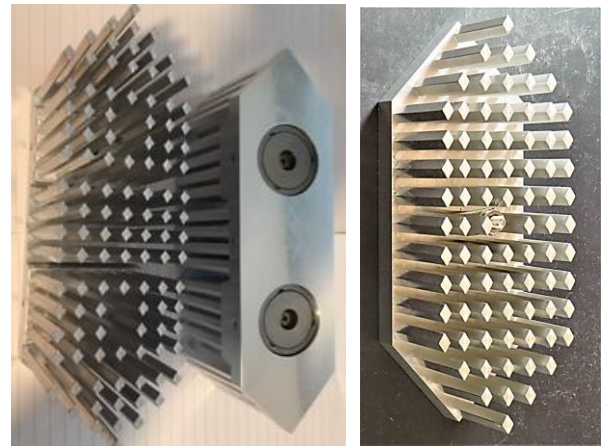


## Magnetic Mounted Potshell Cooling Fins

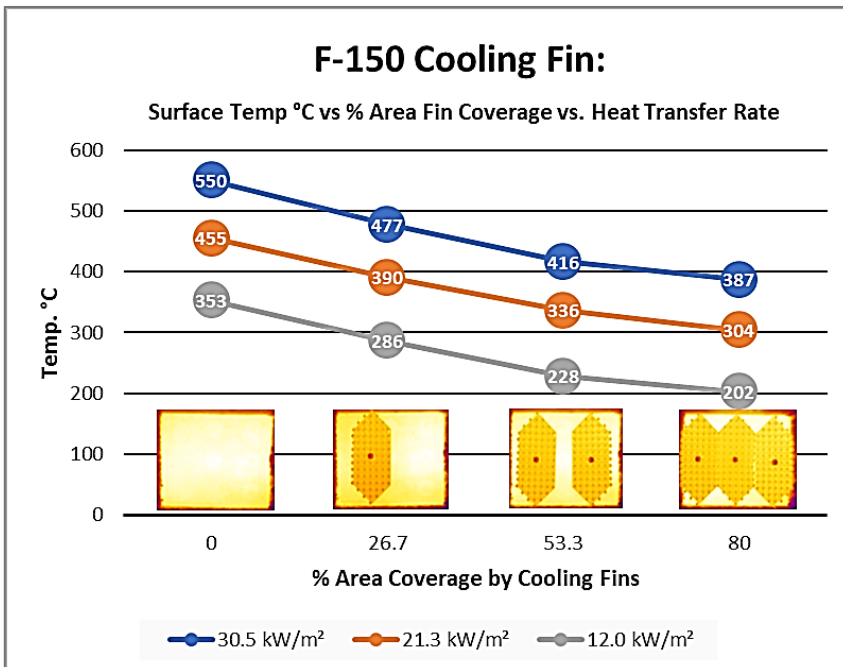
Potshell temperatures will vary significantly and repeatedly each anode rotation due to anode setting, ambient temperature, anode effect, etc. Bath superheat and ledge thickness is dependent on heat generation and bath chemistry (bath ratio). Excess superheat results will melt the frozen ledge, exposing the sidewall refractory to dissolving in the bath.

- Increase Frozen Bath Ledge thickness to increase life of the sidewall refractory at the molten metal zone.
- Enable higher potline amperage by removing more sidewall heat to aid in maintain a protective ledge.
- Immediately reduce sidewall steel temperature, by up to 150+ degrees Celsius, depending on coverage.
- Fins are inexpensive, reusable, and may be easily installed on operating pots.



Model F-210: 210 mm long x 60 mm wide, 2 magnet

Model F-150: 150mm long x 60 mm wide, 1 magnet



- The magnets are rated for up to 550 C operation.
- The fins fit between existing welded steel fins on the potshell sidewall. The cooling fins work by providing ~10x more cooling area than they cover, and extend outside of the hot air layer that exists adjacent to the sidewall.
- The hexagon design with aligned cooling pins sheds dust to maintain cooling effectiveness.

# Pot Sidewall Cooling

Without fins – Steady State Conditions:

- Upper sidewall temperature between steel fins ~470 C.
- Lower sidewall temperature between steel fins ~440 C
- See line temperature profile chart below
- Ambient air temp ~26 C below pots

With Fins – Steady State Conditions:

- Upper steel sidewall temperature ranges from 320 C – 420 C, a decrease of 50 C – 150 C.
- Lower steel sidewall temperature range from 250 C – 400 C, a decrease of 40 C - 190 C.

