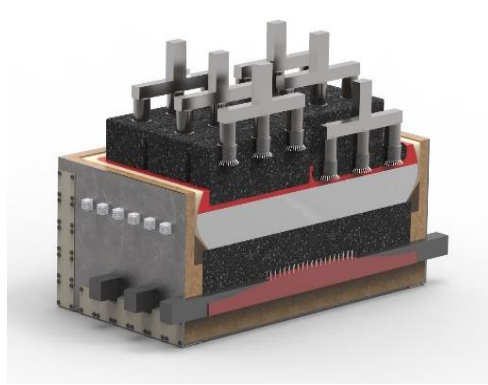


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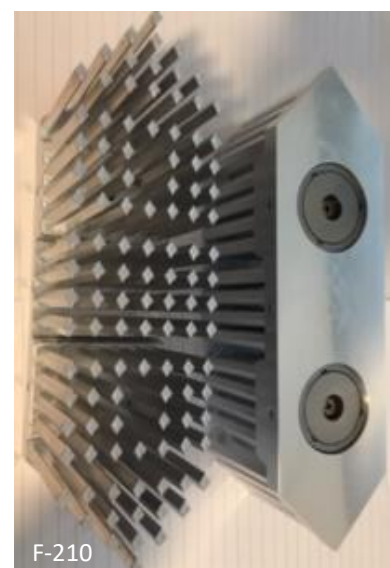
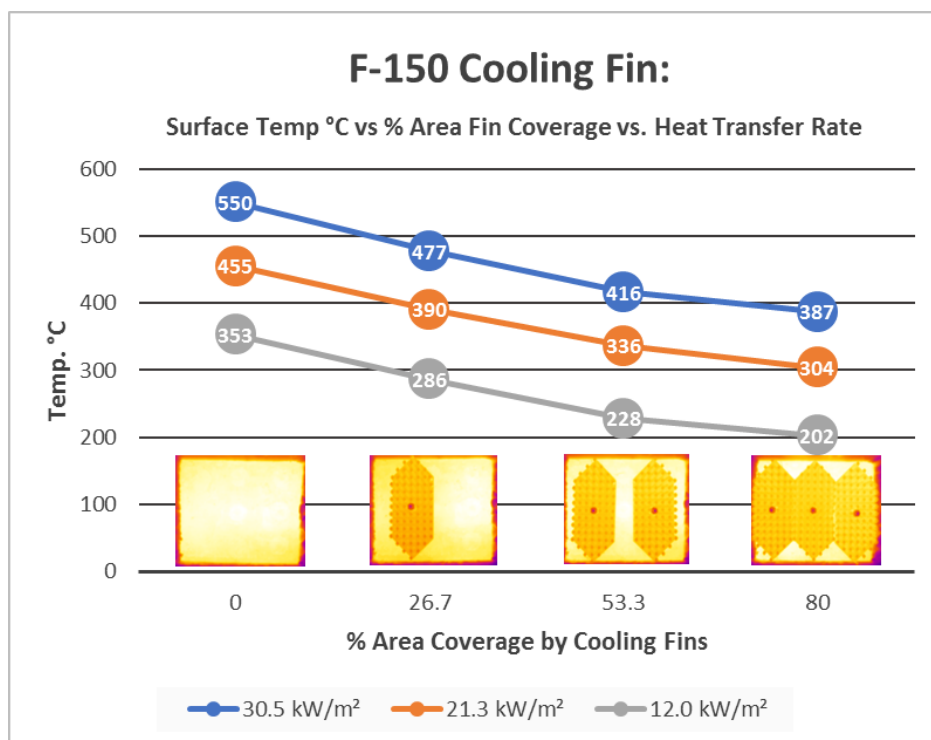
Technologies to Improve the Performance of  
Existing and New Aluminium Reduction Cells

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## Magnetic Mounted Potshell Cooling Fins

- Extend the life of your pot sidewall refractory.
- Enable higher potline amperage by removing more sidewall heat and maintaining more frozen bath ledge in the molten metal hot zone.
- Immediately reduce sidewall steel temperature, by up to 150+ degrees Celsius.
- Fins are inexpensive, reusable, and may be easily installed on operating pots.



- The model F-150 cooling fin measures 150 mm long x 60 mm wide with one magnet, the F201 measures 210 mm long x 60 mm wide, with two magnets. 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 cool outside of the hot air layer that exists adjacent to the sidewall.
- The hexagon design with aligned cooling pins reduces the buildup of dust to maintain cooling effectiveness.

CIPO patent PCT CA2014/051178, international patents pending.

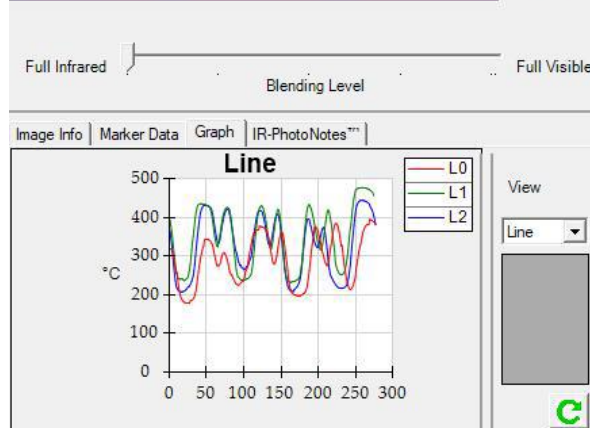
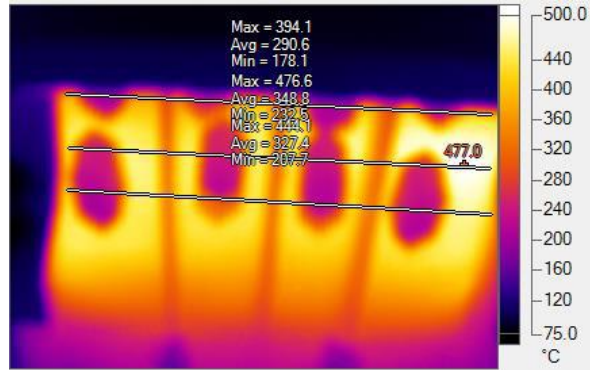
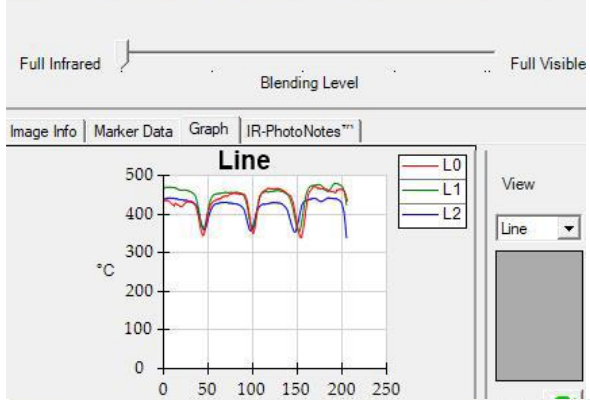
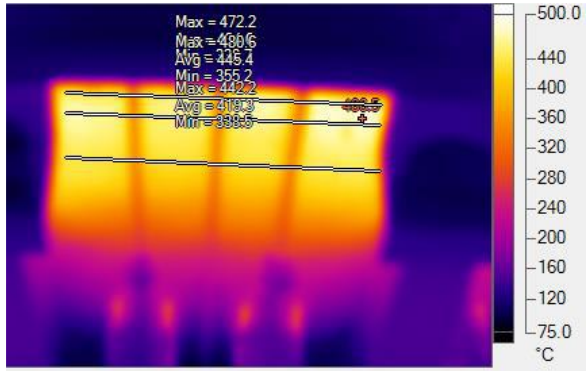
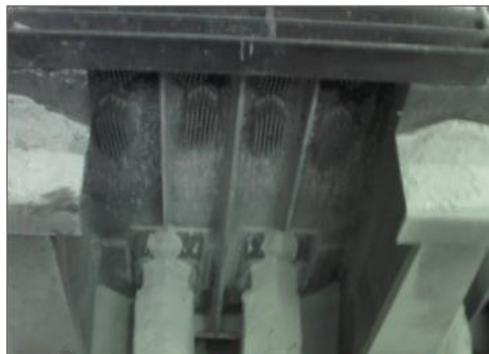
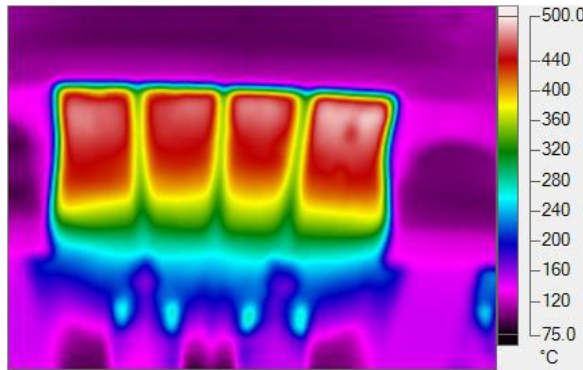
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Please contact AluCellTech  
for more information:  
[Sales@AluCellTech.com](mailto:Sales@AluCellTech.com),  
+1-905-330-9423

# Pot Sidewall Cooling

Initial steady state conditions without fins:

- Upper sidewall temperature between steel fins ~470 C.
- Lower sidewall temperature between steel fins ~440C
- 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.