KIMBALL PHYSICS KPI

Excellence in electron and ion optics

311 KIMBALL HILL ROAD, WILTON, NH 03086-9742 USA
Tel: (603) 878-1616 Tel: 1-888-KIM-PHYS (1-888-546-7497)
Fax: (603) 878-3700 E-Mail: info@kimphys.com Web: www.kimballphysics.com

Product Change Notification
Issue Date June 1, 2018

Dear Kimball Physics Customer,

This letter is to inform you of changes being implemented to the ES-423E Lanthanum Hexaboride Cathode.

Affected Products:	ES-423E LaB_6 Cathodes
Description of Change:	Removal of nickel plating process for carbon heater.
Reason for Change:	Nickel plating has been shown to adversely affect cathode performance and lifetime due to migration of nickel into the mounting strips (Fig 1) that carry current from mounting pins to carbon heater.
Impact on Cathodes:	Removal of nickel plating will: • Improve stability of cathode heater resistance (Fig 2). • Improve cathode lifetime due to more stable heater characteristic
Expected First Ship Date:	The transition to shipping cathodes without nickel plating will begin August 1, 2018. The Expected First Ship Date is the forecasted date that customers may expect to receive changed product. This is determined by the estimated date of inventory depletion on the PCN issue date. This may be affected by fluctuations in supply and demand.
Whom to Contact at KPI with Questions:	Kimball Physics is committed to providing excellent and reliable ES-423 cathodes. We are interested in your concerns or comments. If you have questions, please contact Margaret Charpentier (pcharpentier@kimphys.com).

Figure 1: EDS images of section ES-423 sub-base showing nickel (green) migration into mounting strip (red).

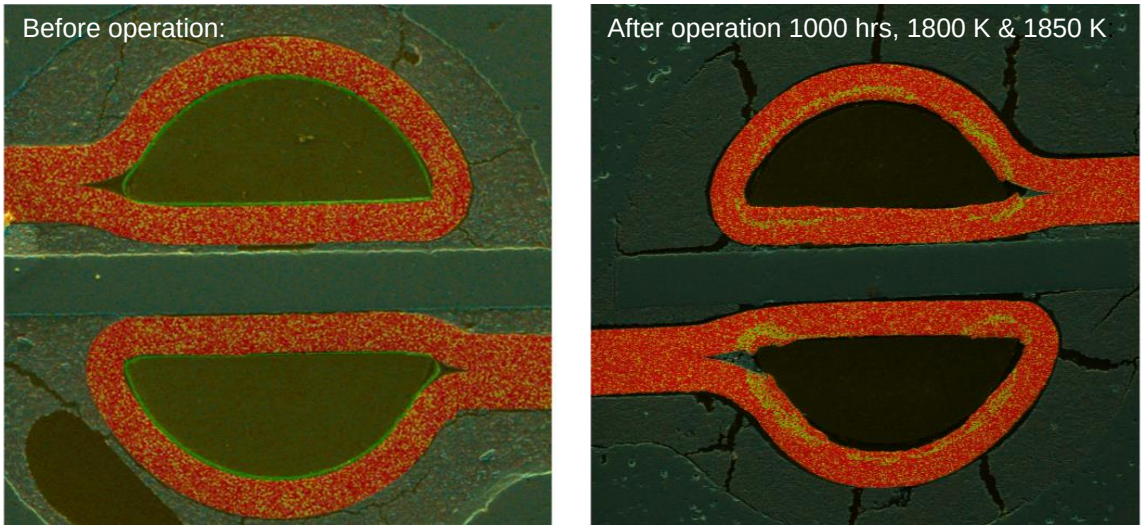

Figure 2: 48-hour Heater Resistance charts comparing resistance fluctuations with and without Ni plating for representative ES-423 cathodes.