Aluminum source ABN BF CL & CN

Cold lip and cold neck cells

- **Dedicated to Al material evaporation**
- **Enhance a cold lip effect & eliminates damages from Al creep**
- **Avoid specific damages with cold neck crucible for nitrogen atmosphere**
- **Uniformities better than ±1 %**

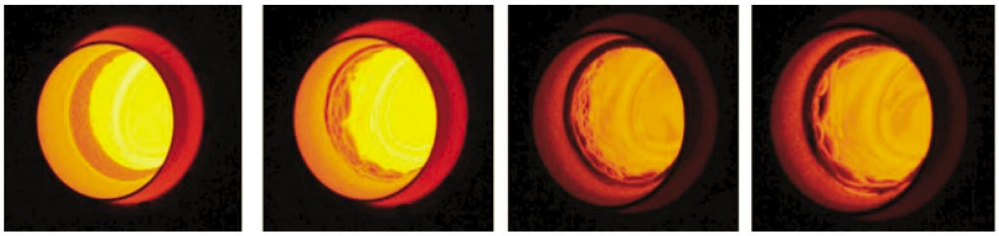
Product introduction

Riber Aluminum cells are designed specifically for Group III evaporation materials but mainly Aluminum. For S40 and S63 cells, the Aluminum cells are single zone, double zone for larger cells (see ABN DF section).

A Cold Lip Cell (CL) contains a single heater located at the bottom of the crucible, which accentuates the thermal gradient between the bottom and the top of the crucible, the top being cooler than the charge. For larger cells, a double zone (DZ) heater is used (ABN DF series). The negative thermal gradient is generated by balancing the power between the bottom and the top.

For application under nitrogen atmosphere obtained from ammonia (NH3) or high deposition rate plasma, we recommend using the Cold Neck assembly to enhance the cold lip effect of the cell. Here, an extra insert is added into the crucible (CN crucible). This configuration brings significant advantages, such as protecting the cell from damages due to aluminum creep and overflow.

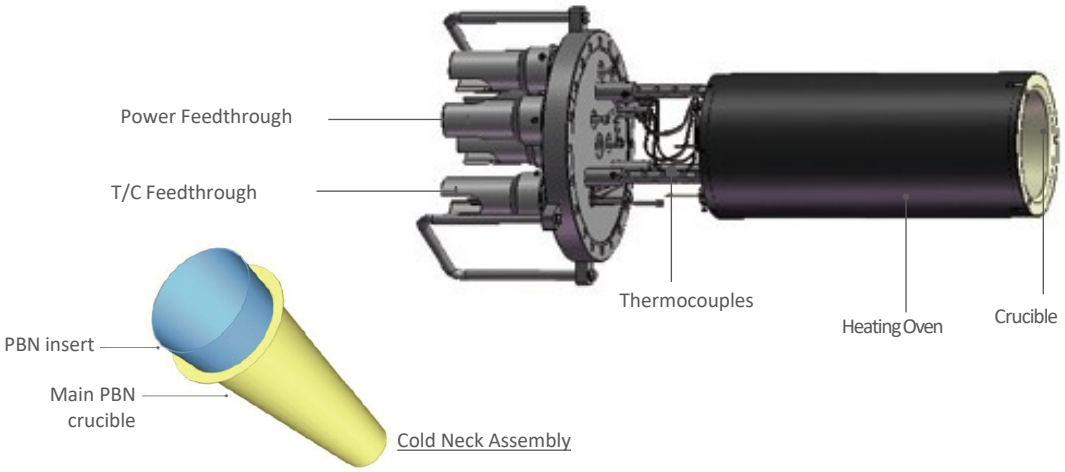
Hence the Aluminum charge capacity is increased by a factor of four compared to standard effusion sources.



1 Day | 4 Days | 8 Days | 12 Days

Cold Neck technology – no overflow, no Al creeping after 12 days of use
The Cold Neck is mainly used for the growth of GaN with NH3 or when high rate deposition are required.

Layout

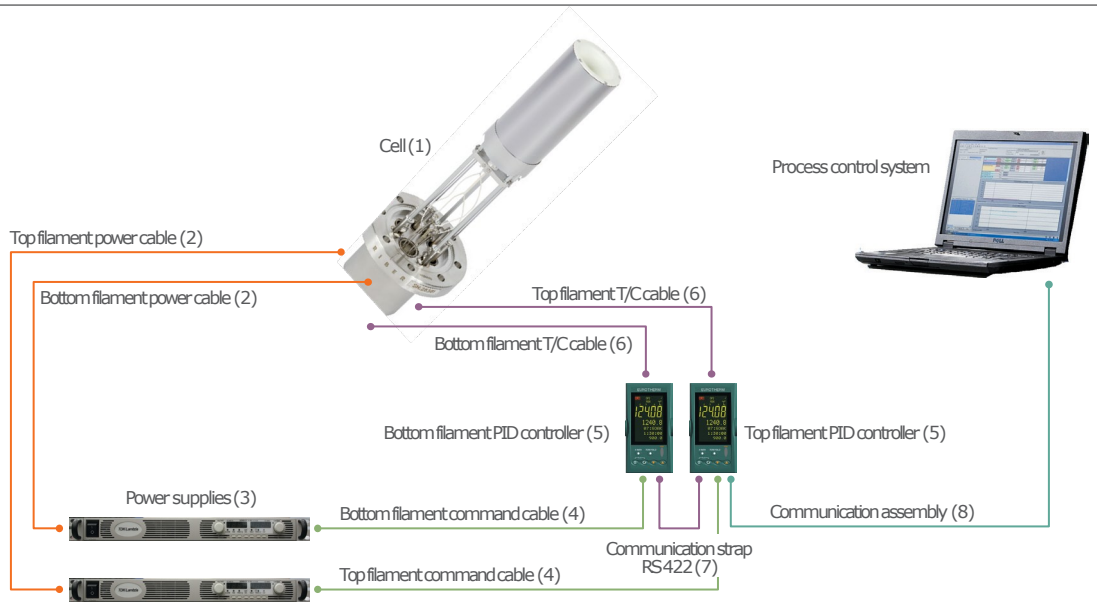


Specifications

Cell characteristics	ABN 135 BF	ABN 60/80 BF	ABN 700 CN
Source capacity	35 cc	60/80 cc	700 cc
Mounting flange	CF35	CF63	CF150
Temperature stability	± 0,2°C		
Crucible shape	Conical		
Crucible material	PBN		
Filament	One - Bottom	One - Bottom	Two – Top & bottom
Filament type	Tantalum filament		
Thermocouple type	C-type		
Typical operating temperature	750 – 1350°C		
Maximum outgassing temperature	1400 °C	1400°C	Bottom filament 1400 °C / Top filament 1300°C
Power required for maximum temperature* (top + bottom filaments simutaneously)	350 W	750 W	3460 W
Power supply	One power supply / One temperature controller	One power supply / One temperature controller	Two power supplies / Two temperature controllers
Cold Neck version available	Yes	Yes	Yes

For some versions and systems adaptations, integrated water cooling can be available

Component interfacing



CELLS & COMPONENTS – Aluminum Source ABN BF – Cold lip & cold neck

RIBER SALES AND SERVICE NETWORK

For more information, please contact your local sales representative

FRANCE
RIBER
31, Rue Casimir Périer
95 873 Bezons Cedex
France
Tel : +33(0)1 3996 65 91
Fax : +33(0)1 3947 4562
Email : customerservice@riber.fr

USA/CANADA
RIBER Inc
216, Route 206, Suite 17
Hillsborough
NJ 08844 USA
Tel : +1 732 603 0680
Fax : +1 732 603 8611
Email : customerservice@riber-us.com

CHINA
RIBER China
Room 1-8, Building A, Dart Tech Park
#516 Wenchuan Road, Baoshan District
Shanghai PR China
Tel : +86 (21) 635 66 266
Fax : +86 (21) 635 66 266
Email : customerservice@riber.cn

OTHER COUNTRIES
RIBER
31, Rue Casimir Périer
95 873 Bezons Cedex
France
Tel : +33(0)1 3996 65 91
Fax : +33(0)1 3947 4562
Email : customerservice@riber.fr

Email: info@riber.com

Website: www.riber.com

RIBER