

eH200 Ion Source

from Kaufman & Robinson

The Ion Beam Authority

COST EFFECTIVE design options are now available for R&D and small system installations. Kaufman and Robinson's next generation of gridless end-Hall ion beam products combine advanced technological and economic benefits which are designed to enable new process applications.



Features & Benefits

The design of the KRI eH200 ion beam product was developed with our world recognized expertise in plasma physics, ion source design and power control engineering, as well as our acquired process application knowledge. The eH200 incorporates the latest technical developments, along with inputs from our customers, assuring productivity in the most rigorous of environments.

The eH200 provides a cost effective option for R&D and small systems.

Applications

The eH200 product line produces a high current and low energy ion beam ideally suited for surface treatment and thin film growth applications such as:

- *Ion Beam Assisted Deposition (IBAD)*
- *In-Situ Substrate Precleaning*
- *Hard Carbon Based Coatings*

- High ion beam current meets critical arrival ratios for high deposition rates
- Low energy ion beam maximizes yield by minimizing ion bombardment damage from high energy ions on surfaces and interfaces
- Broad divergent beam improves throughput by uniformly covering a wide deposition zone thereby increasing the number of parts loaded per run
- Rugged and modular construction lowers consumable spare parts and maintenance time, reducing operational costs and downtime
- Field proven DC power modules simplify operation and maximize uptime
- Compact low profile source enables retrofit upgrades into active coating systems, thereby providing ion assist benefits via field installation
- Integration into OEM system automation by standard RS-232 or analog interface
- Gridless design feature requires no replacement or realignment of expensive grids, resulting in lower cost of operation

Performance Standards

With its performance standards, the eH200 product line allows the user to optimize a process recipe to achieve the desired film properties, resulting in proven film enhancements:

- Low film absorption and scatter
- Smooth film interfaces
- Hard abrasion resistant films
- Control of film stress
- Substrate surface activation
- Low temperature processing on temperature sensitive materials
- Spectral film stability when exposed to moisture and temperature
- Increased film adhesion
- Increased film density
- Control of film stoichiometry
- Higher index of refraction



**Kaufman
& Robinson**
The Ion Beam Authority

1306 Blue Spruce Drive • Unit A
Fort Collins, Colorado 80524
Phone 970.495.0187
Fax: 970.484.9350
<http://www.ionsources.com>

eH200F Ion Source

- Quick change cathode design for increased throughput
- 2" installed height suited for compact systems
- Enhanced magnetic circuit for process optimization
- Rugged quick release electrical connections



eH200F Power Controller

- Short and arc management through current limit protection
- Automatic and reliable neutralization
- Modular architecture with quick change power modules
- Reliable power modules with proven field experience
- Repeatable and stable ion beam parameter control



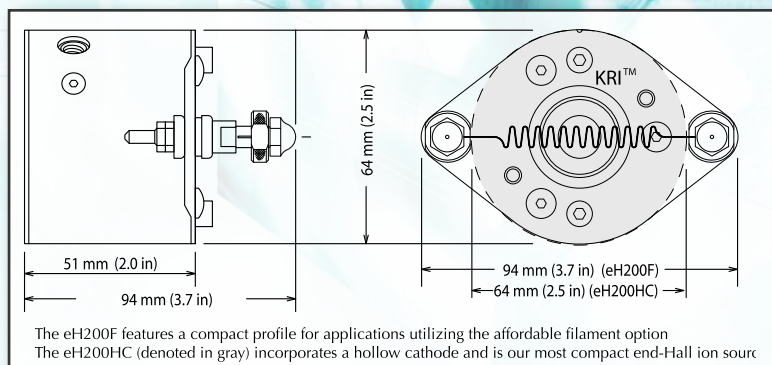
eH200F Modular Anode

- Removable anode module for bench-top maintenance
- Self-aligning anode module for simple reinstallation
- Double contoured anode for optimized plasma discharge
- Enhanced gas distribution for efficient gas management
- Shielded insulators for lower maintenance costs



Nominal Specifications

Dimensions (eH200HC) . . .	2.5" diameter x 2.0" high
Dimensions (eH200F) . . .	3.7" (*2.5") x 3.7" high
Cathode (eH200HC) . . .	Hollow cathode electron source
Cathode (eH200F) . . .	Filament
Anode voltage	40-300 Volts
Anode current	2 Amps (max)
Neutralization	Automatic
Cooling	Radiant
Gas compatibility	O ₂ , Ar, N ₂ , CH ₄ , others
Gas flows	1-20 sccm
Pressure range	< 1x 10 ⁻³ Torr
Mount	Remote or Direct
Power supply controller . .	Switch Mode
Rack mount	EIA 19"
Operation	Front Panel or Remote
Remote interface	RS-232 or Analog



Options and Accessories

- Filamentless via hollow cathode
- Angular mounting bracket
- Refractory metal gas reflectors
- Dual channel gas controller

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1306 Blue Spruce Drive • Unit A



伯东企业（上海）有限公司
HAKUTO ENTERPRISES (SHANGHAI) LTD.
TEL: (86) 21-5046 3511 FAX: (86) 21-5046 1490

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伯东企业（上海）有限公司
HAKUTO ENTERPRISES (SHANGHAI) LTD.
TEL: (86) 21-5046 3511 FAX: (86) 21-5046 1490

伯东企业（上海）有限公司 销售及售后服务中心

上海市外高桥保税区希雅路33号17#3楼B座

电 话: +86-21-5046-3511

传 真: +86-21-5046-1490

邮箱: ec@hakuto-vacuum.cn

官 网: <http://www.hakuto-vacuum.cn>

24 h售后维修专线: 1381-880-1372

伯东企业（上海）有限公司 北京办事处 销售中心

北京丰台区芳群园四区22号楼金城中心705室

电 话: +86- 010-8768-4988

传 真: +86-21-5046-1490

邮箱: ec@hakuto-vacuum.cn

官 网: <http://www.hakuto-vacuum.cn>

伯东企业（上海）有限公司 深圳办事处 销售中心

深圳市罗湖区宝安南路1036号鼎丰大厦501

电 话: +86- 0755-2547-3988. 643

传 真: +86-21-5046-1490

邮箱: ec@hakuto-vacuum.cn

官 网: <http://www.hakuto-vacuum.cn>

伯东国际通商股份有限公司 销售及售后服务中心

台北市中山区八德路二段308号6楼

电 话: +886-2-8772-8910

传 真: +886-2-8772-8918

邮箱: ec@hakuto-vacuum.cn

官 网: <http://www.hakuto-vacuum.com.tw>

新竹市埔顶路25号8楼之一

电 话: +886-3-5679508

传 真: +886-3-5670049

邮箱: ec@hakuto-vacuum.cn

官 网: <http://www.hakuto-vacuum.com.tw>