Electron Gun Beam System Selection Guide: Summary Form

The goal with the form is to enable you to summarize your requirements and research from the Kimball Physics website to find the best Electron Gun Beam System for your application.

Procedure:

1) Visit the Kimball Physics Website Learning Center and proceed to the section Electron Gun Beam System: Selection Guide (https://www.kimballphysics.com/learning_center/electron-gun-beam-systems-selection-workflow/)
2) If you are new to Electron Gun Beam Systems, you may first want to review the Electron Gun Beam System Tutorial in our Website Learning Center (https://www.kimballphysics.com/learning_center/electron-gun-beam-systems/)
3) Enter the summarized data that you gather into the sections and tables below so that they are available when you speak with customer service.

This information will give *us* better understanding of your intended application and will determine if your solution is available from our standard product line or if we need to consider custom configurations.

Summary Data

Date	Project	Company / Institution	Contact Information

1) Provide a brief overview of your intended application?

2) Do you already know your required Electron Energy, Beam Current, Spot Size and Working Distance from the end of the gun to the sample?

3) In what vacuum pressure range would you be operating?

4) Do you have any physical restrictions based on your chamber – e.g. dimensions of electron gun, mounting flange, insertion length.

5) Are there concerns about stray magnetic fields?

6) Deflection: Will beam deflection be needed, and if so, what distance range is desired?

7) Pulsing: Will beam pulsing be required? Do you have an estimate of the rates required.

8) Measurement and Visualization: Do you need a Faraday cup to measure the beam current ? Do you need to display the beam position with a Phosphor Screen?

9) Which Kimball Physics Electron Gun Systems have you found from your research that seem close to the requirements of your application?

	Low Energy		Medium Energy		High Energy
	FRA-2X1-2 /EGPS-1011		**EGG-3101 / EGPS-3101**		**EGH-6210 / EGPS-6210**
	ELG-2 /EGPS-1022		**EGG-3103 / EGPS-3103**		**EGH-6002 / EGPS-6002**
	EGA-1012 /EGPS-1012		**EGF-3104 / EGPS-3104**		**EGF-6104 / EGPS-6104**
	EFG-7 /EGPS-1017		EMG-4212 / EGPS-3212 (N/A)		**EGH-8100 / EGPS-8100**
	EFG-7 /EGPS-2017 (N/A)		**EMG-4212 / EGPS-4212**		**EGH-8105 / EGPS-8105**
	EGL-2022 /EGPS-2022		**EMG-4215 / EGPS-4215**		**EGH-8103 / EGPS-8103**
			EGF-4104 / EGPS-4104		EGH-8201 / EGPS-8201 (N/A)
			EMG-4210 / EGPS-4210		
			EMG-4193 / EGPS-4190		

Notes
N/A No Longer Available: (EFG-7 / EGPS-2017 -> EFG-7 / EGPS-1017), (EMG-4212 / EGPS-3212 -> EMG-4212 / EGPS-4212), (EGH-8201 /EGPS-8201-> EGH-8103 / EGPS-8103)

10) Other Additional Features and Restrictions

Please summarize your information to help us choose potential systems and options.

Parameter	Typical Ranges	Application Range	Notes
Electron Energy	1 eV to 100 keV		
Beam Current	1 nA to 20 mA		
Beam Power			
Beam Power Density			
Spot Size	15 µm (focused) to 500+ mm (flood beams)		
Vacuum Pressure			
Working Distance			
Beam Uniformity			
Pulsing Parameters			
Deflection /Focus Capabilities			
Measurement Capabilities			

Summary Notes

Notes:
1) Specifications and Product Subject to Change Without Notice
2) DE Altobelli, 2/19/2025
3) Document: Electron Gun Parameters Selection Summary 2025_0219

Additional Notes