Measurements with CsI and CVD Diamond Photocathodes

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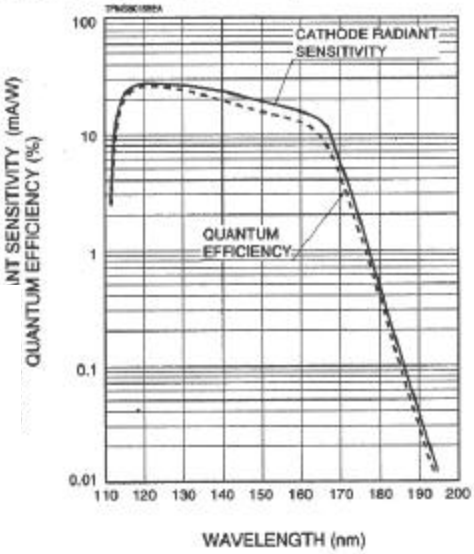
Photocathodes

CsI →

GENERAL

Parameter		Description/Value	Unit
Spectral Response		115 to 195	nm
Wavelength of Maximum Response		120	nm
Photo-cathode	Material	Cs-I	—
	Minimum Useful Size	8 × 12	mm
Window Material		MgF_2	—
Dynode	Structure	Circular-cage	—
	Number of Stages	9	—
Direct Interelectrode Capacitances	Anode to Last Dynode	4	pF
	Anode to All Other Electrodes	6	pF
Base		JEDEC No. B11-88	—
Suitable Socket		E678-11A	—

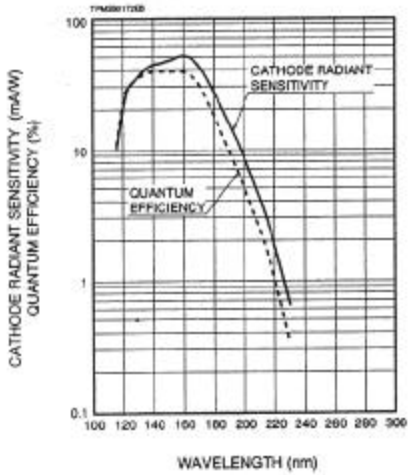
Figure 1: Typical Spectral Response



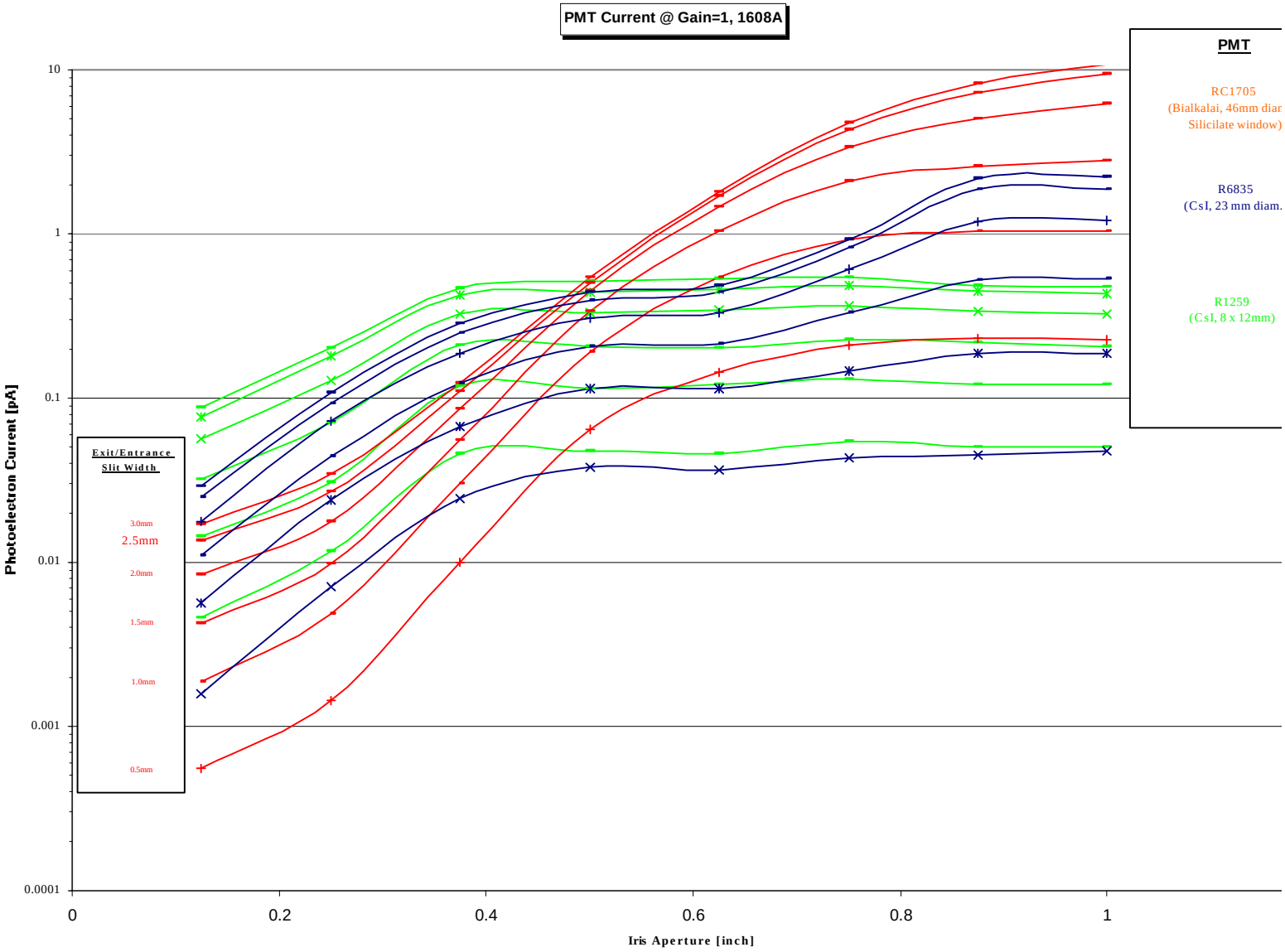
GENERAL

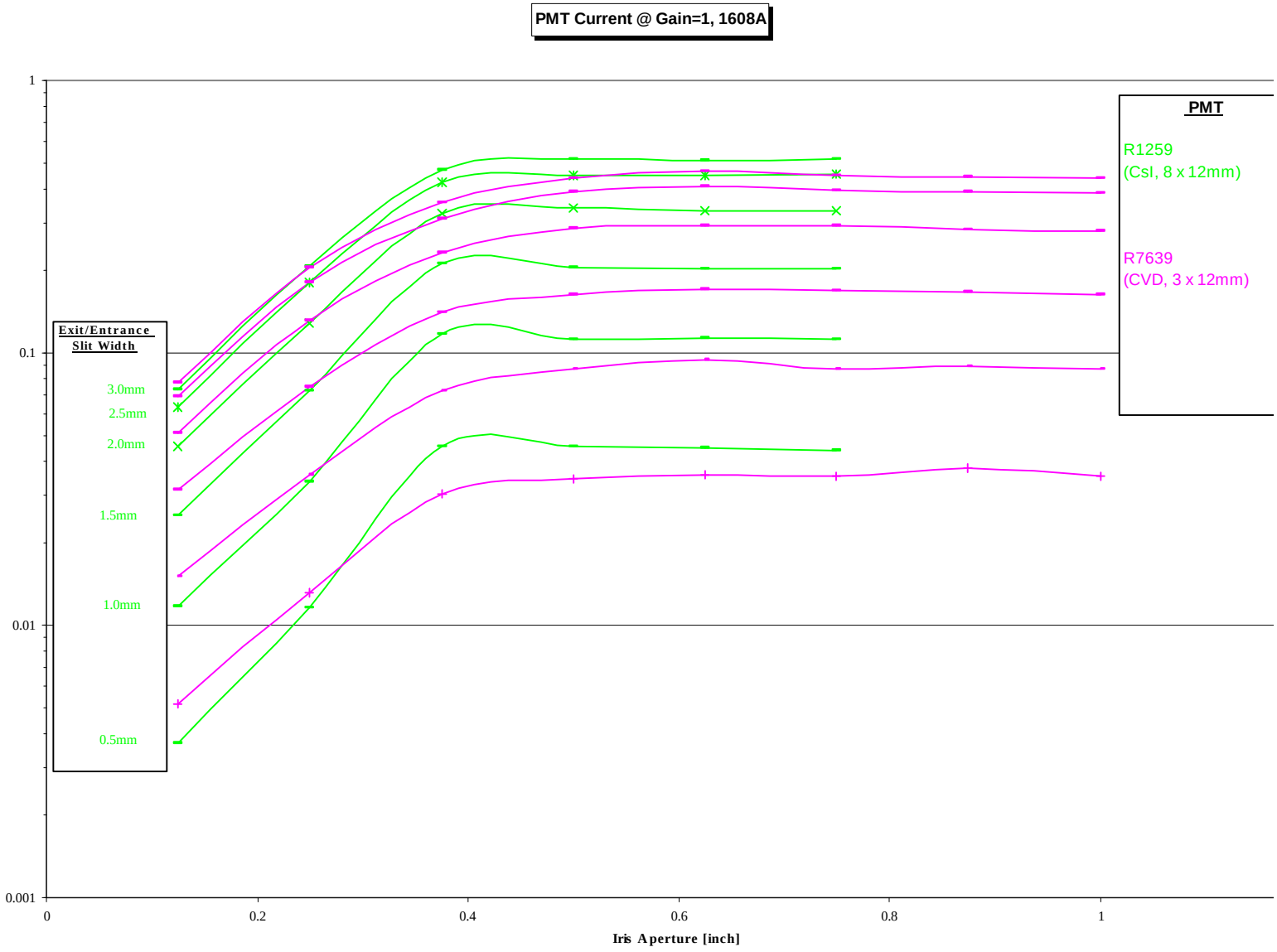
Parameter	Description/Value	Unit
Spectral Response	115 to 230	nm
Wavelength of Maximum Response	155	nm
Photocathode		
Material	Diamond	—
Minimum Effective Area	3 × 12	mm
Window Material	MgF_2	—
Dynode		
Secondary Emitting Surface	Sb-Cs	—
Structure	Circular-cage	—
Number of Stages	9	—
Direct Interelectrode Capacitances		
Anode to Last Dynode	4	pF
Anode to All Other Electrodes	6	pF
Base	11-pin base JEDEC No.B11-88	
Weight	45	g
Suitable Socket	E678-11A(option)	—

Figure 1: Typical Spectral Response

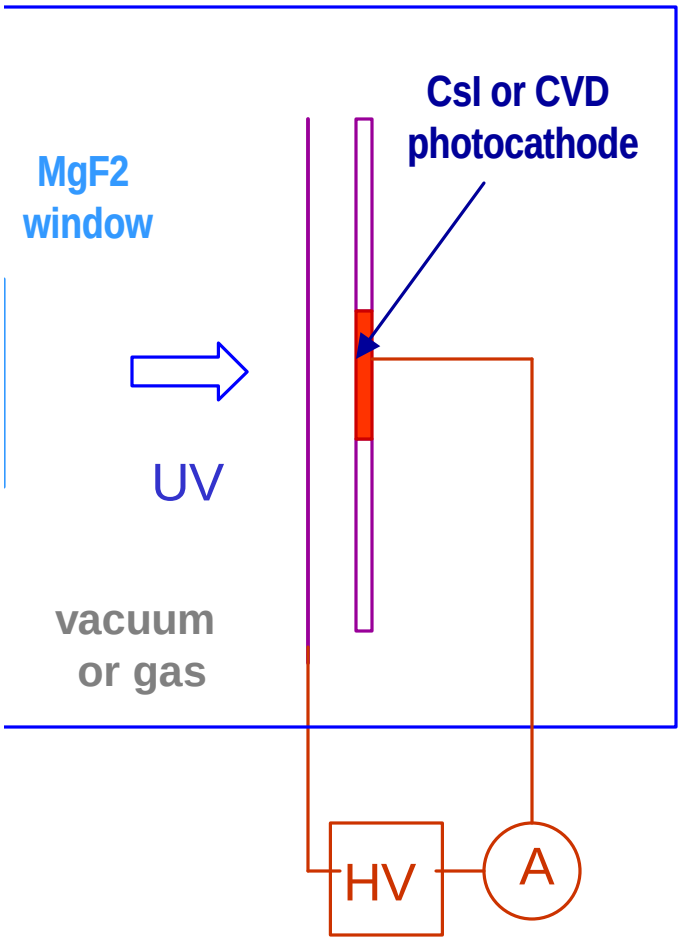


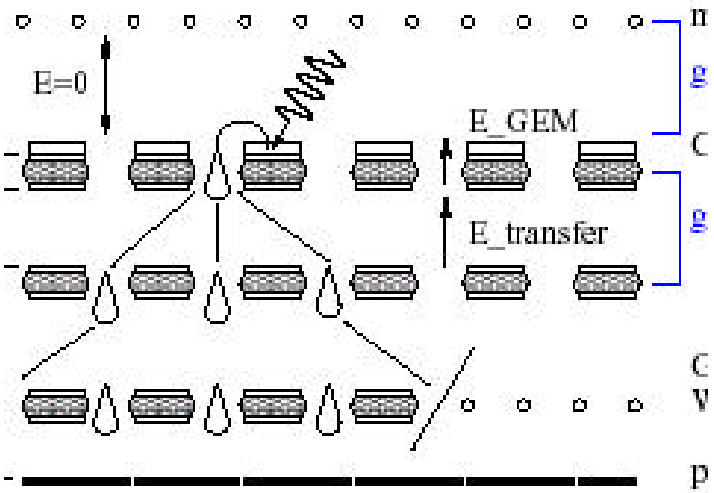
← CVD Diamond


PMT Current @ Gain=1, 1608A
PMT
RC1705
(Bialkalai, 46mm diar
Silicilate window)
R6835
(CsI, 23 mm diam.
R1259
(CsI, 8 x 12mm)
Exit/Entrance
Slit Width
3.0mm
2.5mm
2.0mm
1.5mm
1.0mm
0.5mm
Photoelectron Current [pA]
10
1
0.1
0.01
0.001
0.0001
0
0.2
0.4
0.6
0.8
1
Iris Aperture [inch]


PMT Current @ Gain=1, 1608A
1
0.1
0.01
0.001
0
0.2
0.4
0.6
0.8
1
Iris Aperture [inch]
Exit/Entrance
Slit Width
3.0mm
2.5mm
2.0mm
1.5mm
1.0mm
0.5mm
PMT
R1259
(CsI, 8 x 12mm)
R7639
(CVD, 3 x 12mm)

Setup to Measure Photocathodes





Need CsI photocathodes