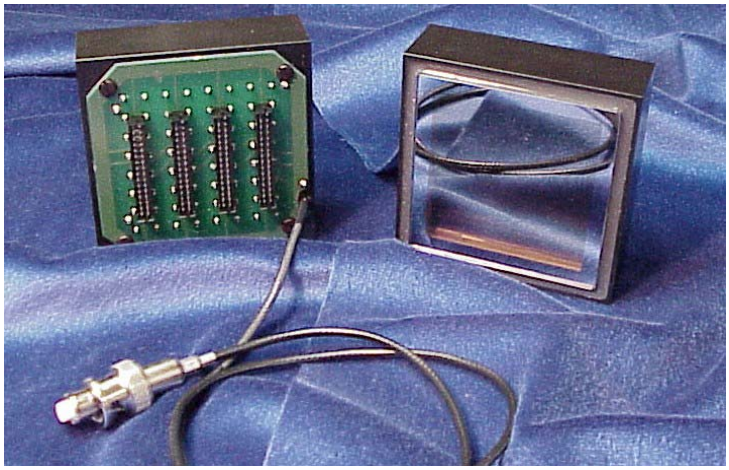
BURLE

PLANACON™ PHOTOMULTIPLIER TUBE ASSEMBLY 85011-501

TENTATIVE DATA
November 2002



The 85011 assembly is based on a new photomultiplier tube that uses microchannel plates (MCP) for electron multiplication, the PLANACON™. This 2" square head-on MCP-PMT is very low profile, less than one inch thick including the voltage divider network. The sixty-four anodes provide 6mm position resolution when used as a discrete pixel device. Improved resolution can be obtained using the charge-sharing technique with an alternate voltage divider network. The dual MCP multiplier provides excellent time response, good gain, and extremely high pulse linearity. Response uniformity over the full 2" square active area is exceptional, typically 1:1.5. The assembly comes with terminated anode and high voltage cables for ease of use. Applications include specialized medical imaging, ring imaging Cherenkov counters, fluorescence microscopy, and high-speed applications such as LIDAR.

GENERAL

Parameter		Value	Unit
Spectral Response		165 to 660	nm
Wavelength of Maximum Response		410	nm
Photocathode Material		Bialkali	--
Window	Material	Quartz	--
	Thickness	0.080	in
Multiplier	Structure	MCP (25μm pore, 40:1 L:D)	--
	Number of Stages	2	--
Anodes	Number	64 (8 x 8)	
	Size / Pitch	0.234 / 0.254	in
Voltage Divider Resistance		12	MΩ

Maximum Ratings (Absolute Maximum Values)

Parameter		Value	Unit
Supply Voltage	Between Anode and Cathode	2400	Vdc
Average Anode Current, sum of all anodes		3	μA
Ambient Temperature		- 40 to + 70	C

FOR ADDITIONAL INFORMATION, TELEPHONE IF IN THE U.S.A. OR CANADA 1-800-366-2875, AND ELSEWHERE, 1-717-295-6888, OR FAX REQUEST TO 1-717-290-1263. BURLE INDUSTRIES, INC., 1000 New Holland Avenue, Lancaster, Pennsylvania 17601-5688 U.S.A.

83112-501 & 83112-502 / NOV 2002

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PHOTOMULTIPLIER TUBE
85011-501

Characteristics (at 25 ºC)

Parameter		Min.	Typ.	Max.	Unit
Cathode Sensitivity	Luminous	40	55	--	µA/Lm
	Blue (with CS-5-58 filter)	5.5	7.5	--	µA/lm-b
Anode Sensitivity	Luminous		35	--	A/lm
Modal Gain		0.3×10^6	0.6×10^6	--	--
Anode Dark Current, Sum of all pixels		--	0.5	5	nA
Time Response	Anode Pulse Rise Time	--	0.3	--	ns
	Anode Pulse Width (FWHM)	--	1.8	--	ns
Pulse Linearity at 5% Deviation		--	300	--	mA
Single Electron Response	Peak-to-Valley	--	2:1	--	
	Resolution (FWHM)	--	150	--	%
Anode Uniformity		--	1:1.25	1:1.5	
Pulse Height Resolution, 2" NaI(Tl) crystal, ^{137}Cs, 1700V (FWHM)		--	10.0	--	%

Note: Measured with the condition shown in Table 1 except where noted.

Table 1 VOLTAGE DISTRIBUTION RATIO AND SUPPLY VOLTAGE (-2300 Volts)

Electrodes	K	MCP_{in}	MCP_{out}	P
Ratio	1	10	1	

Supply Voltage : 1000Vdc, K : Cathode P : Anode