

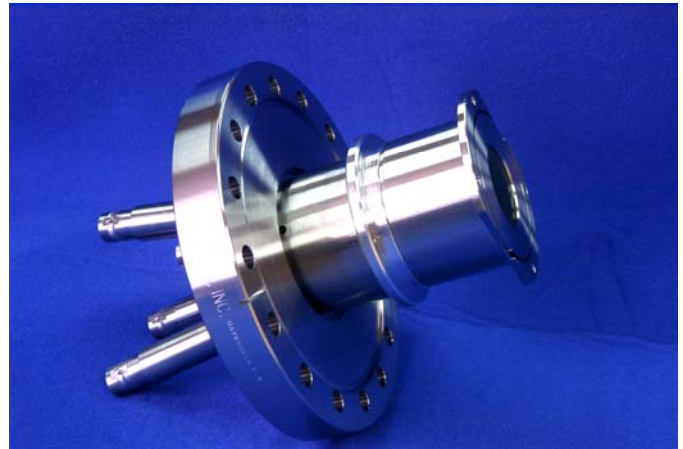
## Advanced Performance 25 mm Bipolar Time-Of-Flight Detectors

- High Performance, Fast Timing Detectors for TOF Mass Spectrometry
- Improved HIGH Mass Resolution
- Positive and Negative Ion Detection
- Post Acceleration to  $\pm 10$  kV
- < 1 Nanosecond rise times
- < 2 Nanosecond Pulse Widths
- Low Profile
- Replaceable MCP Cartridge

The BURLE **Advanced Performance Bipolar Time-of-Flight Detector** offers previously unobtainable levels of temporal resolution, dynamic range, and high mass detection sensitivity for Time-of-Flight Mass Spectrometry.

The detector is contained in a low-profile assembly integrating a newly developed high sensitivity microchannel plate and electro-optically isolated signal output. The 25 mm detector offers a large collection area (5.4 cm<sup>2</sup>) and is available in a free standing vacuum module which can be mounted directly to the flight tube or a conflat flange mounted assembly for easy systems integration.

This new, patent pending Time-of-Flight Detector features post acceleration. The ion conversion surface of the MCP can be biased up to  $\pm 10$  kV in order to enhance the detection efficiency of high mass, positive or negative ions. In addition, a proprietary enhancement coating is added to the ion conversion surface to further enhance conversion efficiency. The output signal polarity is maintained at ground potential by electro-optically isolating the signal, thereby protecting your digitizer and simplifying electronics.



BURLE's exclusive extended dynamic range, small pore (5 micron diameter) MCPs, offer one of the highest channel densities of any MCP in the world. This channel density provides **dynamic range improvements** of ten times that of conventional microchannel plates. The new microchannel plate technology extends the dynamic range far beyond previously attainable levels.

These MCPs also give the new Advanced Performance Bipolar Time-of-Flight detector **superior sensitivity and the best temporal bipolar resolution available**. The flat input surface provides uniform ion conversion and the higher aspect ratio of the MCPs provides higher system gains in excess of 10<sup>8</sup>.

**Installation is a snap** with BURLE's replaceable MCP cartridge. Each cartridge includes a Long-Life™ small pore Extended Dynamic Range MCP, and a high transmission grid mounted in a rugged module. This module can be purchased separately and allows the operator to replace the MCP quickly and easily.

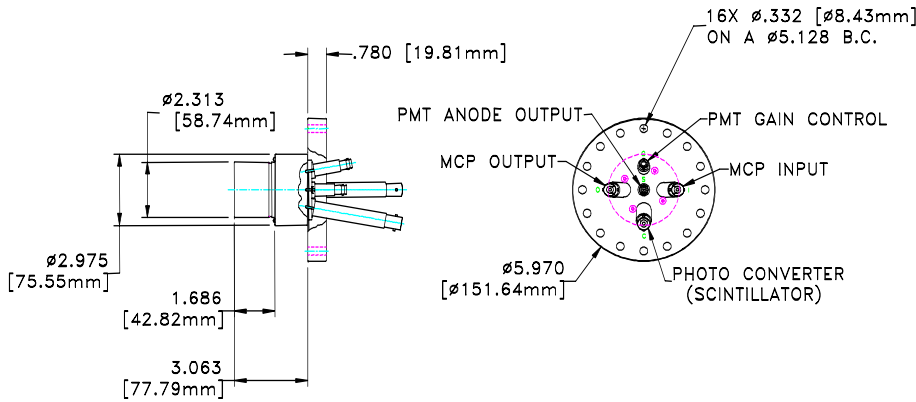
High mass resolution, dynamic range improvements, and superior sensitivity, all from the world's largest supplier of standard, retrofit, and custom detectors for mass spectrometry.



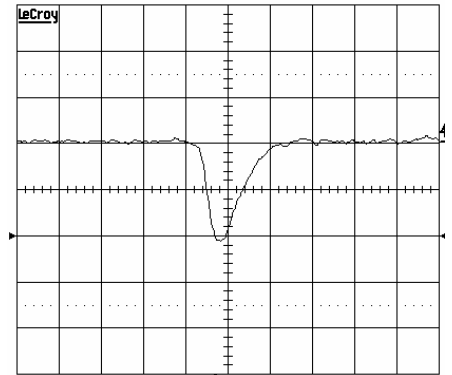
## ADVANCED PERFORMANCE 25 mm BIPOLAR TIME-OF-FLIGHT DETECTOR SPECIFICATIONS

Application:	Time-of-Flight Mass Spectrometry
Microchannel Plate:	Long-Life™ Extended Dynamic Range
Single Ion Output Pulse	100 – 3000 mV into 50 ohms (user defined)
Dark Count (Maximum):	60 counts/min
Detection Diameter:	25 mm
Operating Temperature Range:	-50° to 50 °C
Operating Pressure (Maximum)	1.0 x 10 <sup>-6</sup> Torr
Vacuum Flange:	6" conflat available

### DETECTOR CONFIGURATION



### TYPICAL SINGLE ION PULSE WIDTH



X = 2 ns/div

Y = 50 mV/div

16 G samples/sec

For optimal performance of the Bipolar Time-of-Flight Detector, we recommend the use of the BURLE PF1055 Power Supply. Reference TP212.

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