

# HIGH ENERGY ACCELERATOR AREA MONITOR

## PLASMA CHAMBER®

### PLASMA-ACC SERIES

Model – PLASMA-ACC - Installed

Model – TBM-ACC-X - Portable

#### FEATURES:

- HIGH MeV BETA, GAMMA, X-RAY, PHOTONS, POSITRONS, PROTONS, MESONS
- READS UP TO **50 mR/SECOND** (other ranges available)
- FOUR DECADES
- DIGITAL READOUT: 6 digit-rate, DOSE RATE
- FLAT RESPONSE - SEALED PLASMA CHAMBER®
- FAST RESPONSE; ALARMS: AUDIO / VISUAL

#### PLASMA-ACC

- WALL MOUNT & BRACKET
- BUILT-IN COMPUTER
- RS-232; USB; **OPTIONAL**: ETHERNET
- AC OPERATION – BATTERY BACK UP

#### TBM-ACC-X

- PORTABLE; LOCAL READOUT
- BATTERY
- **OPTIONAL**: RS-232 SERIAL PORT
- **IP 63; CE MARK**



**PLASMA-ACC PLASMA CHAMBER  
FIXED**



**PLASMA-ACC ~ SINGLE DETECTOR  
LOCAL READOUT  
WALL MOUNT - FIXED**

#### AREA MONITOR FOR ACCELERATORS

**UNIQUE PLASMA CHAMBER® PROVIDES MORE ACCURATE  
RESPONSE HIGH MeV GAMMA / X-RAYS / PHOTONS / PARTICLES.**



**PLASMA CHAMBER  
TBM-ACC-X  
PORTABLE**

**PLASMA-ACC  
FM-9W MULTI-DETECTOR  
READOUT  
WALL MOUNT - FIXED**

#### APPLICATION:

Use in Accelerator & Linac facilities for high energy density from High MeV Gammas or X-Rays and from Nano Second Pulsed X-Rays / Photons.



**PHOTON PLASMA DETECTOR FOR MEDICAL, INDUSTRIAL & GOVERNMENT  
ACCELERATORS WITH X-RAYS OR GAMMAS OVER 2 MeV ENERGY.**



**TECHNICAL ASSOCIATES**

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#### WHY IS THIS CAPABILITY NEEDED?

- Accurately measures high energy particles, X-Rays and events. The 3 MeV and higher X-Rays and Gammas have so much energy that they create dense plasma inside the plasma chamber. The plasma quickly collapses and disappears & the energy turns into minor heat and turbulence.
- The PLASMA-ACC Series accurately collects and displays the amount of energy in the dense plasma before it collapses. Other brands and models do not.

PLASMA-ACC SERIES		
MODEL TYPE	SURVEY METER PORTABLE	AREA MONITOR FIXED
	TBM-ACC-X	PLASMA-ACC
POWER	BATTERY	AC
MULTIDETECTOR SYSTEM	NO	YES
CENTRAL HUB (FM-9W)	N/A	YES
WEIGHT - FM-9W	N/A	3 LBS
WEIGHT	2.9 LBS	1.5 LBS
WALL MOUNT	NO	YES
ALARM	NO	YES
OVER RANGE INDICATOR	YES	YES
LOCAL DISPLAY	YES	OPTIONAL
ULTRA LOW ENERGY WINDOW	STANDARD	AVAILABLE
HANDLE	YES	NO
SERIAL PORT	OPTIONAL: RS-232; USB; ETHERNET	RS-232; USB; OPTIONAL ETHERNET

#### RESPONSE:

The **PLASMA-ACC Series** are the **ONLY** accelerator plasma chambers® that will detect accelerator produced pulses and radiation. It will accurately measure the integrated Total Dose from high energy radiation and events over a wide range of pulse widths & repetition rates.



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**Model – TBM-ACC-X - Portable**

#### DESCRIPTION:

The **PLASMA-ACC** consists of a plasma chamber coupled to a Digital display that reads out directly the average mR/h or total mR. and is a fixed mount detector with electronics.

The **TBM-ACC-X** consists of a plasma chamber with local readout in a portable hand-held instrument.

#### SPECIFICATIONS:

##### PULSED X-RAY RESPONSE - PLASMA-ACC SERIES

##### MEASURES RADIATION DELIVERED AT 10<sup>5</sup>R/sec FOR THAT 20 NANO SECOND PERIOD

<b>Total Dose:</b>	1 mR to 100 R in a single range (8 digits)
<b>Dose Rate Range:</b>	1 mR/hr to 10,000 mR/hr (6 digits) or 10 mR/h to 100,000 mR/h
<b>Pulse Width Range:</b>	20 nano-seconds to continuous emission
<b>Repetition Rates:</b>	Single pulse to 1000/second
<b>Wide Energy Range:</b>	2 KeV to 10 MeV (Higher energy available for both models)
<b>High Dose Limits:</b>	Per customer specification*

**User should inform TA of highest-expected:** 10-second, total-dose exposure

\*Note: TA also makes ion chambers that measure up to 10 million R/hr

**Detector:** Sealed Plasma chamber: TBM-ACC-X; PLASMA-ACC

#### TBM-ACC-X - Portable

<b>Cap:</b>	Removable protective cap
<b>Window:</b>	0.5 mg/cm <sup>2</sup> Kapton.
<b>Local Readout:</b>	LCD 8 digits with capacity backlight <b>OPTIONAL:</b> RS-232; USB; ETHERNET
<b>Count Lamp:</b>	Green Flashing LED
<b>Over-Range:</b>	Red LED Indicator
<b>Power:</b>	6 AA Batteries
<b>Data Output:</b>	<b>OPTIONAL:</b> RS-232; USB; ETHERNET
<b>Dimensions:</b>	5-1/2" x 3-1/2" x 8" including handle.
<b>Weight:</b>	2.9 lbs. complete with batteries.

\*Note: TA also makes ion chambers that measure up to 10 million R/hr

See [ION CHAMBER COMPARISON CHART](#)



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#### PLASMA-ACC – Installed / Wall Mounted

#### **PLASMA-ACC - Read Out Electronics: FM-9W – Multi-detector Hub System**

<b>Engineering Units:</b>	User can input correct conversion factor and change to any units.
<b>Controls: Front Panel:</b>	On-Off, Alarm-mute, Rate, Integrate, Reset, Digital
<b>Built in Computer:</b>	High Speed, Color Monitor, Keyboard
<b>Recessed or Internal:</b>	Discriminator level, high voltage. Other adjustable settings.
<b>Input Sensitivity:</b>	Adjustable from less than 1 millivolt to 100 millivolt Anti-saturation and Dead-time Corrections are available.
<b>Alarm Audio &amp; Visual:</b>	2000 Hz audio tone with Audio “mute” switch + RED LIGHT High current relay. 0-100% of full scale.
<b>Alarm Set Point:</b>	User settable to any point on detector range.
<b>Data Output:</b>	Two-way USB standard; <b>OPTIONAL</b> Ethernet.
<b>Power:</b>	105-125 volts, 50-60 Hz ( <b>OPTIONAL</b> -220 V)
<b>Construction:</b>	Gasketed aluminum case.
<b>Cables:</b>	User Specified
<b>Read Out:</b>	Local – Single Detector
<b>Power:</b>	AC 110/220

#### **ELECTRONICS - FM-9W - DIMENSIONS & WEIGHT:**

13.5" W X 11" H X 3.6" D (25 cm x 18 cm x 10cm), excluding probe holder, feet, and knobs.

3 pounds (1.4 kg) including batteries and hardware, excluding probe.

#### **WEIGHT – PLASMA DETECTOR**

1.5 LBS

#### **Options:**

RS-232 SERIAL PORT

Other Rates or Integrated Ranges

Other Readout Units such as Si units: Sv and Sv/h.



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