

# MPC-1000



Protean Instrument

## Overview

The MPC-1000-GFW and MPC-1000-GFL single detector manual counters are the most versatile, high-performance, low background counters available. These counters provide a cost effective entry into low background alpha/beta counting until sample volumes grow larger and justify either multi-detector systems or automatic counters. The MPC-1000-GFL with a windowless gas flow detector delivers higher efficiencies for projects involving alpha emitters & low-energy beta emitters. Each counter has the ability to program routines and QC charts on a PC running the included DUO Express software, then transfer the routines to the instrument using a direct-connect PIC Link cable

## Features

- ⇒ Manual Single Sample Changer
- ⇒ Touch Screen Interface
- ⇒ 2 in. (5.1 cm) Standard Planchet Diameter
- ⇒ Radon Progeny Compensation for Air Filters
- ⇒ Cosmic Guard Detector
- ⇒ Low Background Counter
- ⇒ Windowless or Windowed 2.25" Semi-Hemispherical Detector
- ⇒ Failsafe Gas Conservation and Gas Loss Detection
- ⇒ Easy Window Replacement



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# MPC-1000

Typical Efficiency Windowed<sup>1</sup>

Source	Top	1/8" Bottom	1/4" Bottom	5/16" Bottom
Pu-239	40%	32%	26%	24%
Sr/Y-90	54%	47%	39%	37%
Tc-99	47%	37%	30%	27%
Ni-63	17%	10%	5%	3%
Th-230	42%	34%	27%	25%

Typical Efficiency Windowless<sup>1</sup>

Source	Top	1/8" Bottom	1/4" Bottom	5/16" Bottom
Pu-239	47%	47%	47%	47%
Sr/Y-90	63%	63%	62%	61%
Tc-99	56%	56%	56%	53%
Ni-63	48%	48%	47%	47%
Th-230	49%	49%	49%	49%

Background Window and Windowless

Configuration	Warranted (cpm)		Typical (cpm)	
	Alpha	Beta	Alpha	Beta
Shielded & Guarded	< 0.1	< 0.9	< 0.05	< 0.7

Instrument Options & Accessories

Option	Order Part Number
1/8 Inch Planchet (set of 100)	700-0007
1/4 Inch Planchet (set of 100)	700-0008
5/16 Inch Planchet (set of 100)	700-0009
Set of 10 sample carriers at 1/8" depth	140-115SS-1/8
Set of 10 sample carriers at 1/4" depth	140-115SS-1/4
Set of 10 sample carriers at 5/16" depth	140-115SS-5/16
Ultra-Thin (80 microgram/cm <sup>2</sup> ) detector window	120-0008
Windowless Detector Gasket Kit	120-0038
Mobile Cart	120-0011
Extended Warranty	108-0001
Service Contract	Service Contract
Installation	Install
Computer System	Computer System
VISTA 2000 Software Package	VISTA 2000

Accessories Supplied

Accessory	Quantity
PIC Link Cable	1
1/8" 1/4" or 5/16" SS carrier (Specify at time of order)	5
Two Stage Regulator	1
DUO Software	1

Instrument Specifications

Category	Specifications
Sample Size	2 Inch Diameter (5.1 cm)
Capacity	Single Sample
Depth	1/8, 1/4, or 5/16 Inch
Data Export	USB Flash Drive, USB PIC Link
Interface	Touch Screen/Computer
Count Modes	Alpha Only, Alpha/Beta Simultaneously
Power	110-240 Vac, 50-60 Hz Input; <1A at 110 ; <1.0A @ 240 VAC
Window	Aluminized, 80 µg/cm <sup>2</sup>
Gas Flow	60 cc/min (150 cc/m windowless) 10 psi nominal
Operating Temp Range	10°C to 40°C (50°F to 104°F)
Humidity	20-90 % Non-condensing
Dimension	Size
Height*	16.5 " ( 41.9cm)
Width	23" ( 58.4 cm)
Depth	27.5" (69.9 cm)
~Depth with touch screen	32" (81.3 cm)
Weight Installed	380 lbs (99.79 kg)
Weight Shipping	490 lbs (222.2 kg)

### Factory Measurement Conditions

- Efficiency determined using 2" NIST traceable area source
  - Measurements taken in a natural background of ~8 µR/hr
- ### Compliance
- ROHS compliant (lead by exemption)
  - CE