Interpreting Model Numbers

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Legacy names:

Bicron®

Harshaw

Crismatec

TGM Detectors®

Gamma Labs

Product group:

Standard Scintillation configurations

Scintillation Arrays

He-3 Tubes

Geiger-Mueller Tubes

Liquid Scintillation Cells

SCINTILLATION DETECTORS

Interpreting Scintillation Detector Model Numbers

BICRON legacy product name
- Deltaline: Scintillator encapsulated in an aluminum housing and optical window
- Monoline: Scintillator and PMT are directly and permanently coupled
- Multiline: Scintillator is coupled to one or more PMT's in a demountable assembly
- Squareline: Square or rectangular cross-sections of variable lengths

In the following example, model number 2M2Q/2PSSL designates a detector with premium spectral performance incorporating a 2" diameter by 2" long scintillator, quartz light pipe, 2" diameter photomultiplier tube, stainless steel housing and integrally mounted voltage divider.

MODEL NUMBER	2	M	2		Q	/2	P	SS	L
POSITION	1	2	3	4	5	6	7	8	9

1. Scintillator diameter (or cross section) in inches

2. Detector configuration

Laboratory units with epoxy seal

R, RW, RSW: Deltaline, with end well, with side well
M, MW, MSW: Monoline, with end well, with side well
H, HW, HSW: Multiline/Squareline, with end well, with side well
XM: X-ray detector with Monoline construction
XR: X-ray detector with Deltaline construction
HG: All-welded squareline with glass-to-metal seal

All-welded, ruggedized units

F, G, SG: Geoline
MWD: SG with integral PMT
MWD-XR:-XR signifies counts under vibration specification

NP: Thermal Neutron probe

Liquid Cells

VB-1:Glass vertical, 1PMT port
HB-1,2:Glass, horizontal, 1 or 2 PMT ports
TPB-1.2:Glass, two position, 1 or 2 PMT ports
MVB-1:Metal, vertical, 1 PMT port
MAB-1F:Metal, any position, mounting flange, 1 PMT port
MAB-2F:Metal, any position, mounting flange, 2 PMT ports
MTP-1:Metal, 2 position, 1 PMT port
FNS:Fusion neutron spectrometer

3. Scintillator length in inches

4. Scintillator material if different from NaI(Tl)

5. Type of light pipe (if used)
P: Pure NaI
Q: Quartz

6. Size of photosensitive device in inches (number used given in parentheses)

7. P indicates premium spectral performance

8. Housing material (other than aluminum)
SS: Stainless Steel
C: Copper

Radiation entrance window material for X-ray detectors
A: Aluminum
B: Beryllium

9. Integral electronic components (if incorporated)
L: Low background voltage divider
LP: Low background voltage divider with preamp

Note: – X at the end of a model number indicates a non-standard, special or custom configuration.

If the detector contains an LED or Source (Am-241), it will be added at the end of the model number.

*Standard, "off-the-shelf" detectors come with aluminum housings and epoxy seals. Standard detectors are designed for operation in a "laboratory" environment.

Monolines, Multiline and Squarelines are supplied with bialkali photocathode PMTs (for blue emitting scintillators), positive (+) high voltage operation, and phenolic tube bases.

Interpreting CsI and CdWO4 Array Model Numbers

2.7	X	.082	A	.081	/32	/.083	CsI
1	2	3	4	5	6	7	8

1. Array length in inches
2. Space
3. Array width in inches
4. Crystal Array
5. Pixel thickness in inches
6. Number of Pixels
7. Pitch in inches
8. Scintillator material

Interpreting NaI(Tl), BGO, BrilLanCe and PreLude Array Model Numbers

4	X	4	P	.236	B380	/.118
1	2	3	4	5	6	7

1. Scintillator length in inches
2. Space
3. Scintillator width in inches
4. Pixellated crystal
5. Scintillator thickness in inches
6. Scintillator type other than NaI(Tl)
7. Pixel size in inches

Harshaw

In the following example, model number 8S8/2A-LBX designates a detector incorporating a 2" diameter by 2" long scintillator, 2" diameter photomultiplier tube, LED and non-standard.

8	S	8	/2	A	L	X
1	2	3	4	5	6	7

1. Divide number by 4 to get the scintillator diameter (or cross section) in inches
2. Detector configuration
   - D: Crystal, housing and optical window
   - A: D style with flange
   - AW: A style with end well
   - AF: A style with side well
   - S: Crystal with PMT*
   - SH: X-ray detector with S construction
   - SF: D style with end well
   - SAF: D style with side well
3. Divide number by 4 to get the scintillator length in inches
4. PMT size in inches
5. PMT mounting
   - A = only PMT
   - B = PMT + Voltage divider
   - G = PMT + VD + Preamplifier
6. Scintillator material if different from NaI(Tl)
   - C = CsI
   - B = BGO
   - D = Diode Unit
   - P = Plastic Scintillator
   - L = Built in LED

   V = Equipped for use in vacuum
   - Q = Quartz window
   - K = Lucite light guide
   - T = Built in thermistor
   - Am = Built in ^{241}Am pulser
   - Neg = Operated with negative high voltage

   (May list more than one)
7. X at the end of a model number indicates a non-standard, special or custom configuration

* S style detectors are supplied with bialkali photocathode PMTs (for blue emitting scintillators), positive (+) high voltage operation, and phenolic tube bases.

M	500	M	4	B	S	16	/3	B	Q	X
1	2	3	4	5	6	7	8	9	10	11

1. Millimeters
2. Scintillator diameter in millimeters

3+5 Matched window line (MB)

4. Number of PMT's
6. Housing Material if not aluminum
   - S = Stainless Steel
   - C = Copper
7. Divide number by 4 to get the scintillator length in inches
8. PMT size in inches
9. PMT mounting
   - A = only PMT
   - B = PMT + Voltage divider
   - G = PMT + VD + Preamplifier
10. Scintillator material if different from NaI(Tl)
    - C = CsI
    - B = BGO
    - D = Diode Unit
    - P = Plastic Scintillator
    - L = Built in LED

    V = Equipped for use in vacuum
    - Q = Quartz window
    - K = Lucite light guide
    - T = Built in thermistor
    - Am = Built in ^{241}Am pulser
    - Neg = Operated with negative high voltage

    (May list more than one)
11. X at the end of a model number indicates a non-standard, special or custom configuration

CRISMATEC

CRISMATEC legacy product name:

Scintibloc: Scintillator and the PMT are directly and permanently coupled
Scintiflex: Scintillator is coupled to one or more PMT's in a demountable assembly

In the following example, model number 51SE51 designates a Scintibloc detector incorporating a 2" diameter by 2" long scintillator, photomultiplier tube and integrated voltage divider.

51	S	E	51
1	2	3	4

1	Scintillator diameter (or cross section) in millimeters
2	Detector configuration S: Scintibloc Y: Scintiflex
3	other characteristics of the Scintibloc and Scintiflex B: Beryllium window M: MiB window P: Axial (end) well crystal Pt: Transversal (side) well crystal E: Electronics: voltage divider incorporated A: Electronics: preamplifier incorporated F: Selected for low background Q: PMT with silica glass window L: Flexible light guide W: Phoswich assembly R: Ruggedized assembly T: High temperature unit S: Crystal equipped with radioactive stabilization source
4	Scintillator length in millimeters

Model N51X51/C designates a standard detector consisting of a NaI(Tl) crystal surrounded by a reflective material and canned in aluminum with an optical window.

N	51	x	51	/C
1	2		3	4

1	Standard detectors N: NaI(TL) C: CsI(Tl)
2	Scintillator diameter in millimeters
3	Scintillator length in millimeters
4	Other characteristics C: Collared detector P: Well detector B: Beryllium entrance window RT: High temperature ruggedized detector

Interpreting Saint-Gobain Geiger-Mueller Tube Model Number Standardization

In the following example, model number .61GM4.23/PBNC has an active diameter of .61 inches, an active length of 4.23 inches, is plated for high sensitivity, and has a BNC connector.

.61	GM	4.23	/	PBNC
1		2		3

1	Active Diameter (in) – may be approximate	
2	Active Length (in) – may be approximate	
3	Other parameters	
	P:	Plated / High sensitivity
	W:	Mica window
	E:	Energy filtered
	T:	Thin-walled
	X:	Special design feature
	Connectors	
	BNC:	BNC connector
	MHV:	MHV connector
	SHV:	SHV connector
	FL:	Flying leads
	3:	3-pin connector

Interpreting Gamma Laboratories Model Numbers for Geiger-Mueller Tubes

T	16	25	-PT
	1	2	3

	Gamma detection – Neon, Argon & Halagon filled
1	Diameter (mm)
2	Length (cm)
3	Platinum (if applicable)

Interpreting TGM Detectors He-3 Tubes Model Numbers

In the following example, model number 100 HE3 304 50 HS, 100cm active length, He-3 gas, 4 atmosphere, 50mm outside diameter, HN connector, standard design.

100	HE3	/	304	/	50	H	S
1	2		3		4	5	6

1	Active Length	
2	Type of gas	
3	Gas Pressure – (76) x Atmosphere	
4	Outside diameter (mm)	
5	Type of connector or connection	
	B:	BNC connector
	C:	“C” connector
	F:	Flying leads
	M:	MHV connector
	N:	No connector
	R:	Right angle connector
	S:	SHV connector
	T:	Threaded anode end

6	Miscellaneous	
	P:	Position Sensitive
	S:	Standard design
	W:	Ruggedized for Wireline applications
	X:	Ruggedized for MWD applications
	Z:	Special build

SAINT-GOBAIN

Saint-Gobain Crystals

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