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Contributors

20th Century Electronics (Firm)

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December, 1957
Leaflet GT205

20th CENTURY ELECTRONICS LIMITED

GEIGER COUNTER TUBES

ILLUSTRATED PRICE LIST
DECEMBER 1957

Printed in England

HALOGEN QUENCHED

LOW VOLTAGE COUNTER TUBES

CHARACTERISTICS:

Operating Voltage	370 volts average unless otherwise stated.
Plateau Length	100 volts minimum.
Slope of Plateau	3% per 100 volts average.
Temperature Range	—50°C. to +60°C.
Expectation of Life	Unlimited by Use.
Electrode Material	Stainless Iron.

Type Number indicates effective Length of Anode in cms. Overall dimensions are subject to normal glassworking tolerances. Gamma efficiency 100% and Beta efficiency 95% of organic quenched tubes.

DIPPING:

TUBE	OVERALL SIZE IN MMS.	DESCRIPTION	PRICE
B.6H	138 × 35	Thin glass wall beta-gamma Counters (30—35 mg/cm²) capable of extremely stable counting up to 80,000 counts per minute. Stainless iron helical cathode. Diameter 17 mm. International Octal base.	100/-
B.12H	200 × 35		100/-

LIQUID:

		CAPACITY	BASE		
M.2H	95 × 25	5 ml.	Special 2-pin	Thin glass wall beta Counters giving fixed source geometry with liquid samples. High stability and long life makes the tubes ideal for standardisation. Stainless iron helical cathodes. M.2H can be supplied with rubber jacket.	120/-
M.6H	185 × 24	8-10 ml.	as M.6		120/-

GAMMA:

		BACKGROUND	BASE		
G.4H	90 × 12	12 per min.	Miniature Hivac	Miniature tube for monitoring higher field intensities.	80/-
G.5H	125 × 25	40 per min.	Special 2-pin	Civil Defence monitor. Waterproof rubber jacket available.	70/-
G.10H	195 × 28	90 per min.	4-pin	General purpose monitor for field and laboratory.	70/-
G.10HE	200 × 27	90 per min.	Solder Tag Cap	Similar to G.10H but with special waterproof base and solder tag connections.	80/-
MG.10H	150 × 14	40 per min.	Flexible Leads	A general purpose Gamma monitor of small outside diameter.	90/-
G.24H	260 × 23	150 per min.	Flexible Leads	Geological Survey Tube. Optimum size for lower field intensities.	70/-
G.60H	750 × 36		End Caps	A large tube for Cosmic ray research and geological survey.	170/-

END WINDOW:

		WINDOW	BASE		
MB.4H	105 × 30	Glass 10 mg/cm²	I.O.	8 mm. diameter Beta Tube. Stainless Cathode. Diameter 5 mm.	100/-
EWG.5H	125 × 25	Glass 10-15 mg/cm²	Special 2-pin	An End Window version of G.5H. Useful in Civil Defence.	120/-
EW.3H	100 × 37	Mica 1.5-2.5 mg/cm² Diameter 25 mm.	I.O.	Suitable for C_{14} etc. Operating at 550 - 700 volts.	150/-
EWG.3H	85 × 30	Glass 10-15 mg/cm² Diameter 25 mm.	Wire Leads or I.O.	Sterilisable glass construction for Plastic Surgery and other applications.	150/-

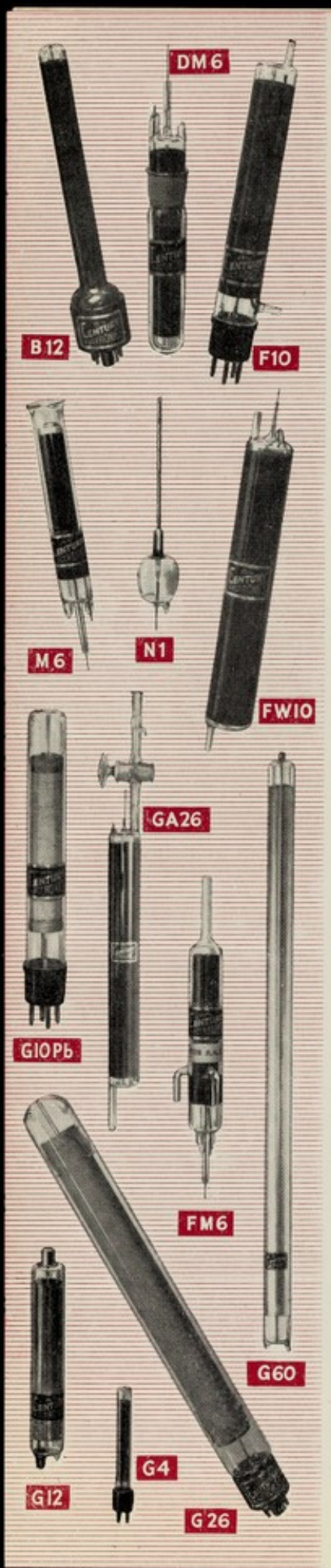
X-RAY:

X.10H	160 × 30	Glass window 7 mg/cm². Stainless cathode 6 mm. diameter. Dimensions and gas filling give optimum efficiency to Cu Kα X-rays. I.O. base. Operating at 650-750 volts.	160/-

HIGH CURRENT:

HC.4	70 × 10	Stainless cathode 6 mm. diameter. Capable of sustained use at 45μA. Operating at 400-500 volts. Wire leads.	120/-

Details of optimum circuitry are set out in Leaflet GC.101 and should be studied closely if best use is to be made of the excellent counting characteristics of halogen tubes.



ORGANIC QUENCHED

STANDARD COUNTER TUBES

CHARACTERISTICS: (Except Special Types)

Operating voltage - - -	1,100 volts average.
Plateau Length - - -	200 volts minimum unless otherwise stated.
Slope of Plateau - - -	3% per 100 volts average.
Expectation of Life - -	10^9 Counts.
Dead Time - - - -	Less than 300 micro-seconds.

Type Number indicates effective Length of Anode in cms. Overall dimensions are subject to normal glassworking tolerances.

DIPPING:

TUBE	OVERALL SIZE IN MMS.	DESCRIPTION	PRICE
B.6	138 × 35	Thin glass wall beta-gamma Counters (30-35 mg/cm²). Suitable for checking bench-top contamination and for hand and foot monitoring. International octal base. Carbon Cathode. Diameter 17 mm.	60/-
B.12	200 × 35		60/-
B.24	320 × 35		120/-

LIQUID:

		CAPACITY		
M.6	185 × 24	9 ml.	Thin glass wall beta Counters surrounded by liquid sampling jackets of stated capacity to give fixed source geometry. Cathode—Diameter 15 mm. Carbon or Evaporated metal. Thick wire lead-outs.	65/-
M.12	247 × 24	17 ml.		90/-
DM.6	190 × 30	Demountable Jacket 9 ml.		95/-

FLOW:

		WALL	CAPACITY			
FM.6	220 × 48	35 mg/cm²	4.5 ml.	Similar to M.6 but fitted with half capacity flow jacket.	Carbon Cathodes. For use in cyclic operations. F.10 has British 4-pin base.	150/-
F.10	210 × 25	20 mg./cm²	Less than 1 ml.	Internal helix 1 mm. diameter within the counting volume.		200/-
W.10	220 × 28	20 mg/cm²	3 ml.	Open ended tube runs internally for introduction of wire samples.		160/-
FW.10	220 × 28	20 mg/cm²	3 ml.	Similar to W.10 but with protruding glass tubes for rubber connections.		160/-

GAMMA:

		TERMINALS	CATHODE		
G.10	195 × 25	4-pin base	Carbon	Standard Gamma Counter 10 cm. active length.	35/-
G.12	145 × 22	End Caps	Copper Foil	Double-ended tube for portable equipment.	35/-
G.24	270 × 22	End Caps	Copper Foil	Double-ended tube for Cosmic Ray and Gamma counting.	35/-
G.26	350 × 36	4-pin or I.O	Carbon	Suitable for foot monitoring.	40/-
G.60	740 × 36	End Caps	Carbon	Designed for Cosmic Ray Research.	60/-

HIGH EFFICIENCY GAMMA:

		CATHODE	BASE		
G.4Pb	100 × 16	Lead	Miniature Hivac	Plateau Length: 100 v. minimum. Miniature tube which may be used in a directional shield.	60/-
G.10Pb	195 × 25	Lead	I.O. or 4-pin	Standard high-efficiency Gamma Counter 8.5 cms. effective length	52/-
G.26Pb	350 × 36	Lead	I.O. or 4-pin	20 cms. effective length. Suitable for foot monitoring.	60/-

SPECIAL:

GA.26	480 × 36	Gas Analysis	An internal beta Counter into which radioactive gas may be introduced. (C_{14} etc.).	75/-
GA.10	380 × 30	Gas Analysis	An internal beta Counter for the estimation of gaseous radioactive samples (C_{14}, etc.).	75/-
GA.10M	380 × 30	Gas Analysis	An internal beta Counter with stainless steel cathode for tritium assay, etc.	102/-
N.1b	260 × 25	Needle Counter	3 mm. diameter stainless needle .004ins. thick. Active length 12 mm. Needle length 150 mm.	370/-
N.1c	210 × 25	Needle Counter	3 mm. diameter stainless needle .004ins. thick. Active length 12 mm. Needle length 100 mm.	370/-
N.1k	210 × 25	Needle Counter	2 mm. diameter stainless needle .0025ins. thick. Active length 12 mm. Needle length 100 mm.	600/-

NEUTRON COUNTERS

SLOW NEUTRON BF_3 COUNTERS

These BF_3 Proportional Counters which employ the ^{10}B (n, α) reaction for the detection of slow neutrons, combine high detection efficiency with low background. They are designed either for use under total irradiation conditions, or with collimated beams of neutrons incident at one end of the counter.

Enriched		Unenriched		Dia. (cm)	Active length (cm)	Overall length (cm)	Vw.
Type	Price	Type	Price				
	£ s. d.		£ s. d.				
5EB40/13	36 10 0	5B40/13	25 0 0	1·3	5	11·5	1200
28EB40/13	36 10 0	28B40/13	25 0 0	1·3	28	34	1200
12EB20	31 10 0	12B20	21 0 0	2·5	12	21	1200
12EB40	31 10 0	12B40	21 0 0	2·5	12	21	1800
12EB70G	31 10 0	12B70G	21 0 0	2·5	12	22	2400
31EB20	37 10 0	31B20	25 0 0	2·5	31	41	1200
31EB40	37 10 0	31B40	25 0 0	2·5	31	41	1800
31EB70G	37 10 0	31B70G	25 0 0	2·5	31	42	2400
15EB70/50G	42 0 0	15B70/50G	28 0 0	5·0	15	28	3250
40EB70/50G	42 0 0	40B70/50G	28 0 0	5·0	40	54	3250
84EB45/50G	46 0 0			5·0	84	100	2600
107EB70/50G	50 0 0			5·0	107	119	3250

FAST NEUTRON COUNTERS

These tubes are designed for use in portable and installed equipment for health monitoring in the vicinity of reactors.

The FN2 series are proportional counters of special design employing the recoil-proton method of fast neutron detection. The response to collimated beams of neutrons, or under total irradiation conditions, is proportional to the fast neutron tissue dose in the energy range 0.2 to 14 MeV, as set out in "Recommendations of the International Commission on Radiological Protection Supplement No. 6". The response to γ-radiation and to slow neutrons has been reduced to a minimum. The tubes are of unit cell construction and are available in four sizes with sensitivities from 1 to 6 c.p.s. per tolerance dose.

Type	Sensitivity cps/mpl	Length	Dia.	Price
				£ s. d.
FN2/2	0·60	5¼ in.	2 in.	28 0 0
FN2/3	1·05	6½ in.	2 in.	30 0 0
FN2/6	2·10	10¾ in.	2 in.	40 0 0
FN2/12	4·20	19½ in.	2 in.	50 0 0

FISSION CHAMBERS

Ionisation Chambers coated with either ^{235}U or ^{238}U are now available in a number of sizes, and are intended primarily for use in reactor instrumentation. Enquiries relating to specific applications will be welcome.

Details of other types of Fast and Slow Neutron Counters and more complete details of the above will be sent on request.

20TH CENTURY ELECTRONICS LTD.

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