Amperex® ELECTRONIC CORPORATION
230 DUFFY AVENUE, HICKSVILLE, L. I., N. Y.

TYPES 100C/N 200C/N SERIES MICA END WINDOW COUNTERS

TENTATIVE DATA

DESCRIPTION

The type 100C or 100CB is a soft X-Ray and beta counter with an argon filling and a 3 to 4 mg/cm^2 end mica window[1].

The type 100N or 100NB is primarily a beta counter with a low voltage neon filling and a 3 to 4 mg/cm^2 window[1].

The type 200C or 200CB is a very soft X-Ray, alpha and beta counter with an argon filling and a 1.4 to 2 mg/cm^2 window[1].

The type 200N or 200NB is an alpha and beta counter with a 1.4 to 2 mg/cm^2 window[1] and a low voltage, neon filling.

GENERAL DATA

Operating Temperature Range	-55°C to + 75°C
Quenching Agent	halogen admixture
Effective Diameter of Mica Window	1-3/32 inches
Cathode Material	Type 446 stainless steel
Effective Cathode Dimensions	1.5 in. long x 1.187 in. O.D. x 0.047 in. wall

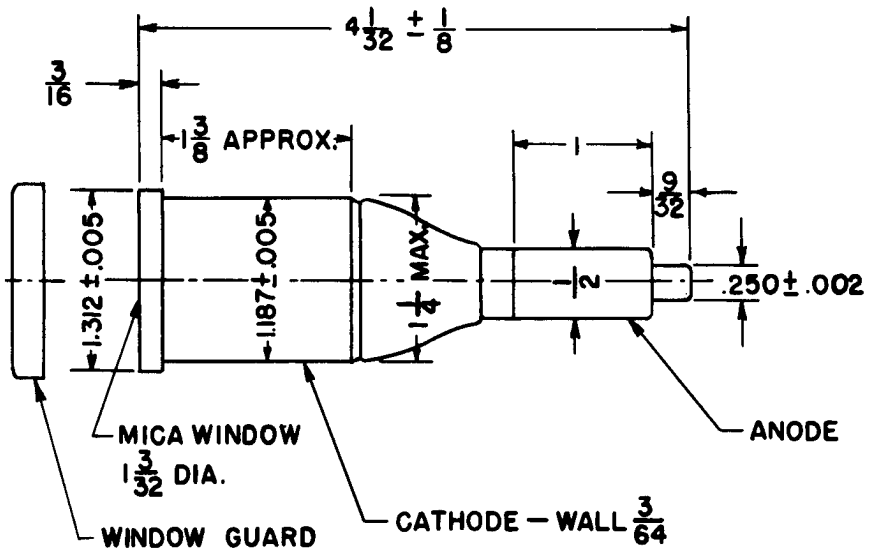
PERFORMANCE DATA

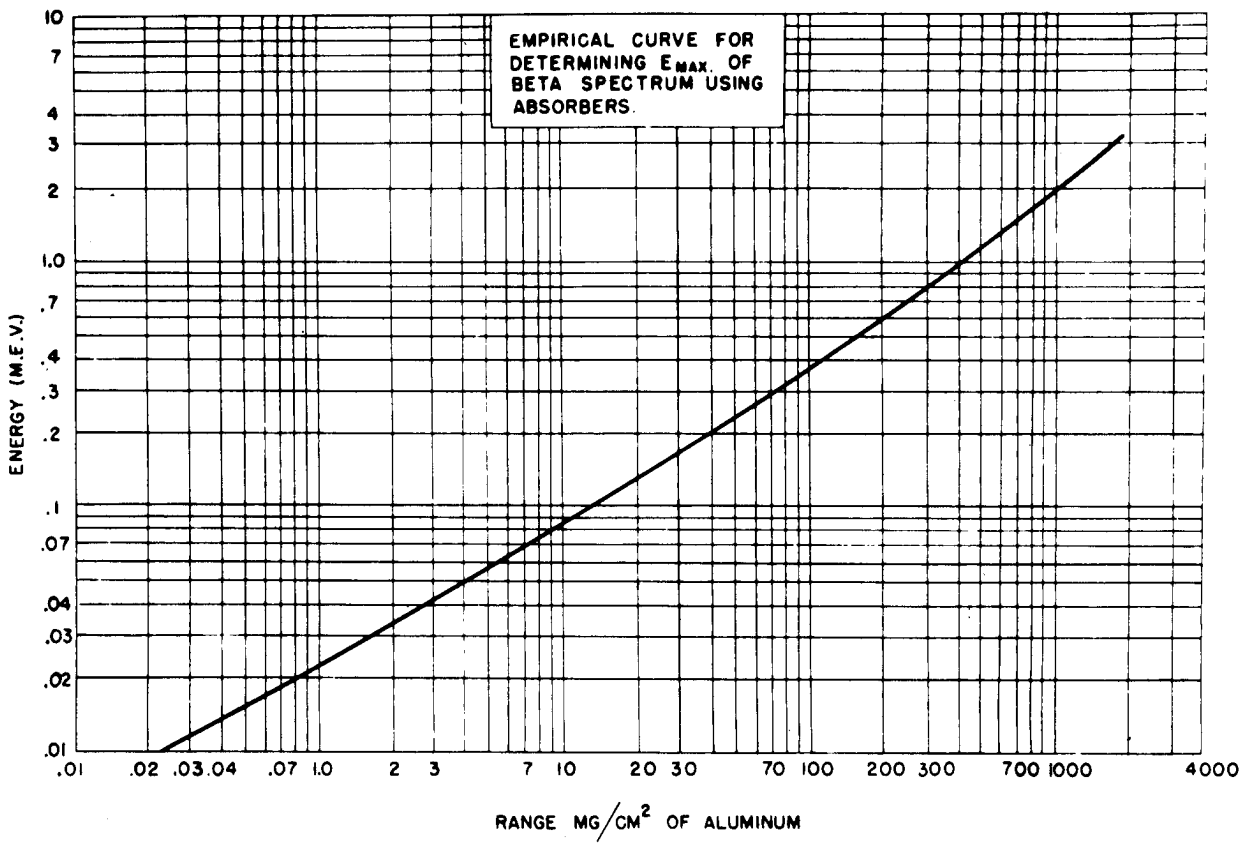
	100N, 100NB, 200N & 200NB	100C, 100CB, 200C & 200CB
Plateau Length[2]	in excess of 200 volts	in excess of 300 volts
Slope of Plateau[2,3]	< 10% per 100 volts	< 10% per 100 volts
Starting Voltage (0.3 volt pulses)[2]	625 volts DC max.	1075 volts DC max.
Capacity at Terminals	1.0 pf	1.0 pf
Radial Sensitivity (approx.)	85% - 90%	80% - 85%
Read Time (approx.)	200 microseconds	200 microseconds
Maximum Counting Rate[4]	830 counts per sec.	830 counts per sec.
Background (Shielded 2 in. lead and 1/8 in. aluminum)	50 counts per min. max.	50 counts per min. max.
Life Expectancy in Counts[5]	unlimited by use	unlimited by use
Maximum Operating Altitude	25,000 feet	25,000 feet

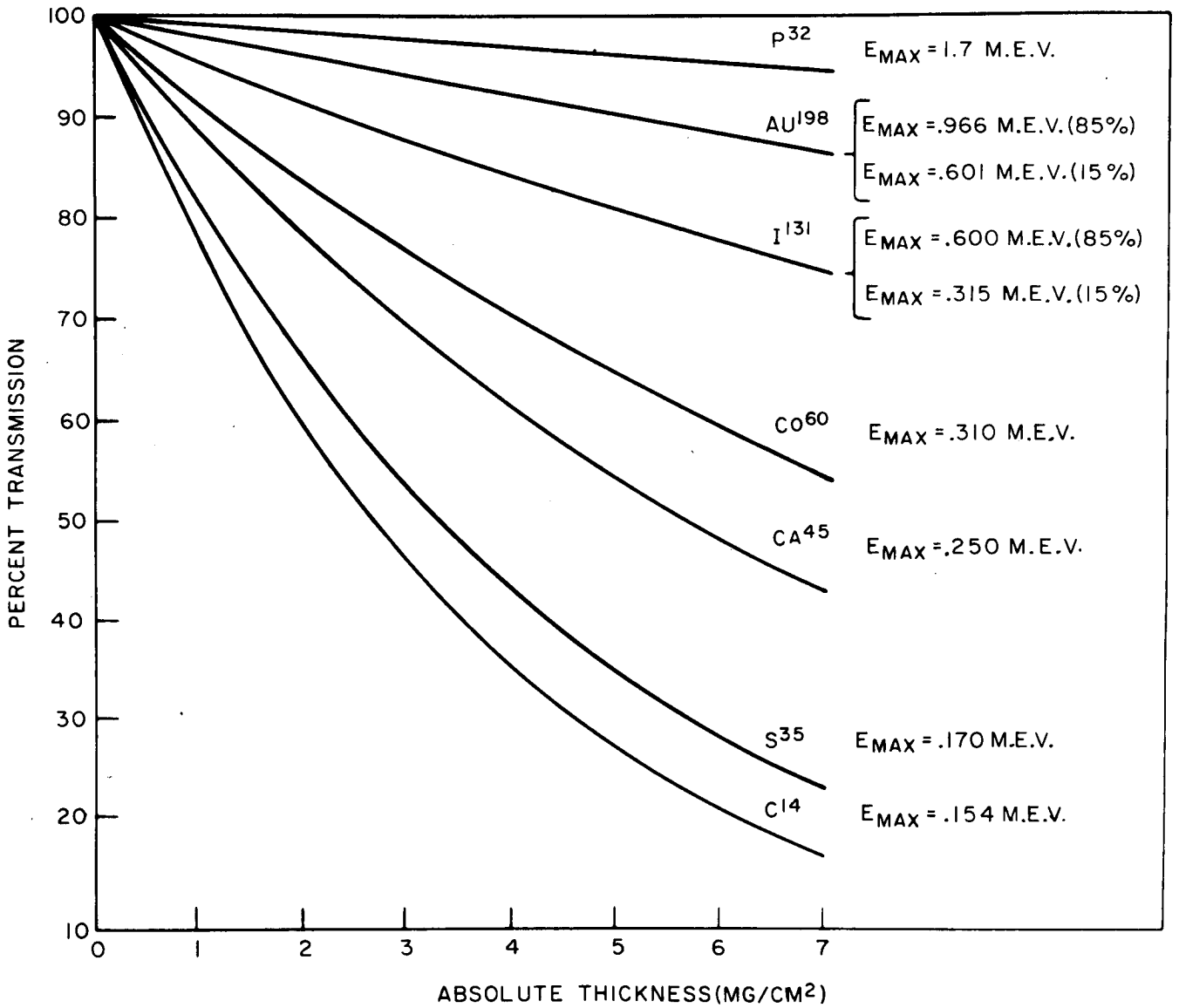
1. 1.4 mg/cm^2 mica = .0002 inch = 5.08 microns., 3.5 mg/cm^2 mica .0005 inch = 12.70 micron.
2. This data is obtained from an automatic plateau trace run on each tube. A print of this trace is shipped with each tube.
3. At an average counting rate of 100 counts per second.
4. For 20% dead time correction (approx.).
5. Guaranteed 5 x 10^{10} counts minimum.

Amperex

September 1962

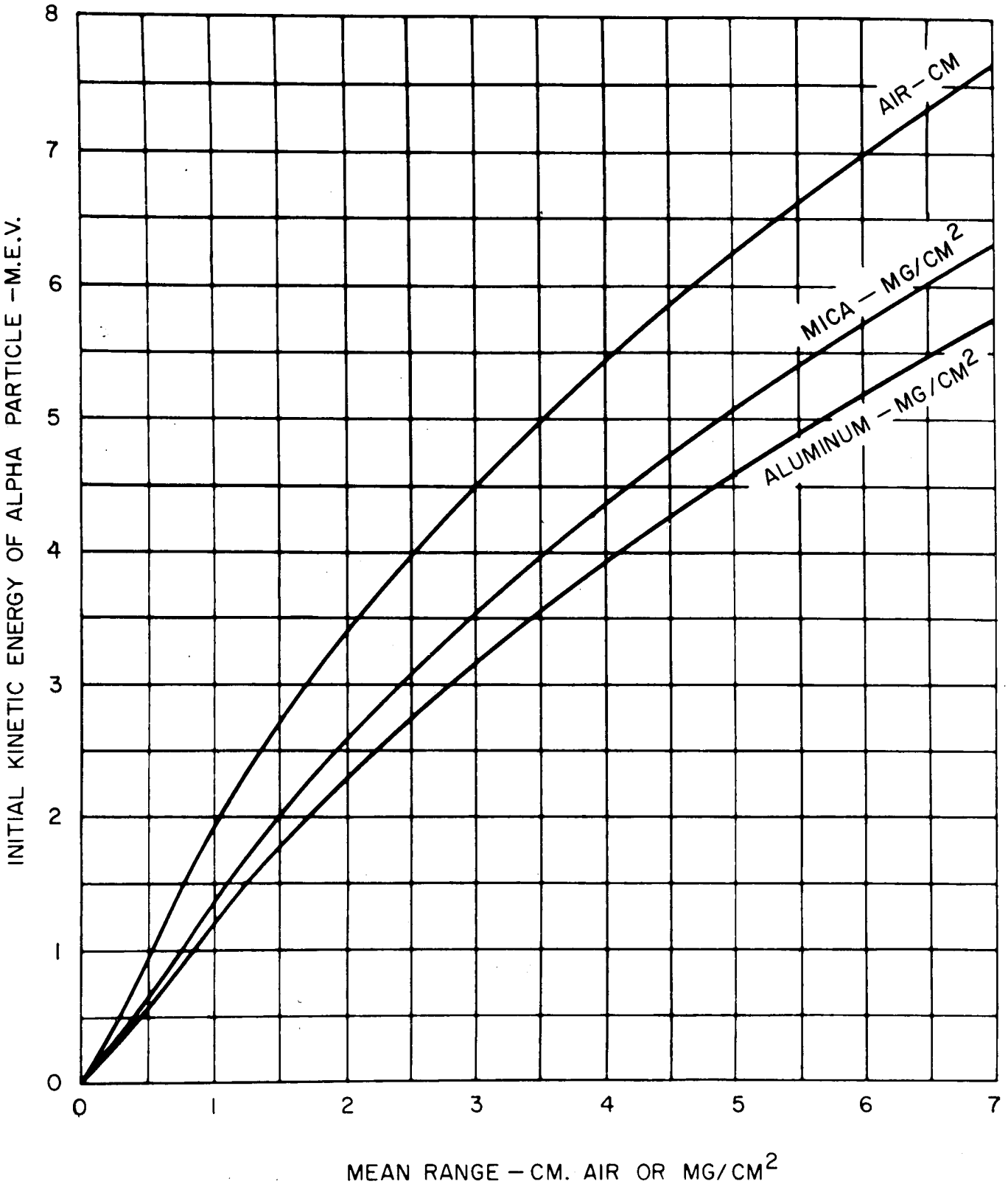

4 1/32 ± 1/8
3/16
1 3/8 APPROX.
1
9/32
1.312 ± .005
1.187 ± .005
1 1/4 MAX.
1/2
.250 ± .002
MICA WINDOW
1 3/32 DIA.
WINDOW GUARD
CATHODE — WALL 3/64
ANODE


EMPIRICAL CURVE FOR DETERMINING E MAX. OF BETA SPECTRUM USING ABSORBERS.
ENERGY (M.E.V.)
10
7
4
3
2
1.0
.7
.4
.3
.2
.1
.07
.04
.03
.02
.01
.01 .02 .03 .04 .07 1.0 2 3 7 10 20 30 70 100 200 300 700 1000 4000
RANGE MG/CM² OF ALUMINUM



CALCULATED TRANSMISSION OF BETA SPECTRUM FROM SOME COMMON RADIOISOTOPES

Adapted from G. I. Gleason, et al — Nucleonics, Vol. 8, No. 5, 18 (1951)



ALPHA PARTICLE MEAN RANGES