


1.2. CHARACTERISTICS


This instrument has been designed and tested according to IEC Publication 348 first edition for Class I instruments* and UL1244** and has been supplied in a safe condition. The present Manual contains information and warnings which shall be followed by the purchaser to ensure safe operation and to retain the instrument in a safe condition.

- This specification is valid after the instrument has warmed up for 30 minutes (reference temperature 23°C).
- Properties expressed in numerical values with tolerance stated, are guaranteed by the manufacturer. Numerical values without tolerances are typical and represent the characteristics of an average instrument.
- Inaccuracies (absolute or in %) relate to the indicated reference value.

* : only PM3215

** : only PM3215U

<i>Designation</i>	<i>Specification</i>	<i>Additional information</i>
1.2.1. C.R.T		
Type	D14-125 GH/08	
Measuring area	8x10 divisions	1 div. equals 1 cm
Screen type	P31 (GH)	P7 (GM) optional
Total acceleration voltage	10kV	
Graticule	Internal	Cont. variable illumination
1.2.2. Vertical amplifier		
Display modes	Channel A only Channel B only A and B chopped A and B alternated A and B added	
Channel B polarity	Normal or inverted	
Response:		
Frequency range	DC : 0 ... 50MHz (-3dB) AC : 2Hz ... 50MHz (-3dB)	
Rise time	≤ 7ns	
Pulse aberrations	≤ ± 3% (≤ 5% pp)	Measured at 6 div. amplitude and applied rise time of ≥ 1ns
Deflection coefficients	2mV/DIV ... 10V/DIV	1-2-5 sequence
Continuous control range	1 : ≥ 2,5	
Deflection accuracy	± 3%	
Input impedance	1MΩ / 20pF	
Input RC time	0,1s	Coupling switch to AC
* Rated input voltage	42V (dc + ac peak)	Test voltage: 500V (r.m.s.) according to IEC348
**  Maximum safe input voltage	400V (dc + ac peak)	
Chopping frequency	≈ 500kHz	
Vertical positioning range	16 divisions	

<i>Designation</i>	<i>Specification</i>	<i>Additional Information</i>
C.M.R.R. in A-B mode	$\geq 40\text{dB}$ at 1MHz	After adjustment at d.c. or low frequencies
Cross talk between channels	-40dB or better at 10MHz	Both attenuators in the same setting
Instability of the spot position: Temperature drift	$\leq 0,3\text{div/hour}$	
1.2.3. Time base		
Time coefficients	0.5s/DIV ... 0.1 μs /DIV	1-2-5- sequence
Continuous control range	1 : ≥ 2.5	
Coefficient error	$\pm 3\%$	
Magnification	10x	
Magnifier error	$\pm 2\%$	
Maximum effective Time coefficient	10ns/DIV	
1.2.4. Triggering		
Source	Ch. A, Ch.B, Composite, External and line	
Trigger mode	Automatic, normal AC normal DC and TV	TV line or frame switched by TIME/DIV switch TV line: 1 μs /div ... 20 μs /div. TV frame: 50 μs /div.5s/div.
Trigger sensitivity	Internal: 1.0 DIV at 50MHz External: 0.2Vpp at 50MHz Ext + 10 : 2Vpp at 50 MHz TV int.: 0.7 DIV TV ext.: 0.15Vpp	Sync pulse amplitude Sync pulse amplitude
Triggering frequency range	AUTO: 20Hz ... $\geq 50\text{MHz}$ AC: 5Hz ... $\geq 50\text{MHz}$ DC: 0Hz ... $\geq 50\text{MHz}$	Typically, stable triggering can still be obtained at 50MHz and 2 div. or 1Vpp amplitude
Level range	AUTO: proportional to peak-to-peak value of trigger signal. AC, DC: 8 div. at internal trigg., 1,6V at external trigg., and 16V at ext. $\div 10$	+ or -4 div. and + or $-0,8\text{V}$ ref. to centre of screen + or -8V ref. to centre of screen
Triggering slope	Positive or negative going	
Input impedance	1M Ω /20pF	
* Rated input voltage	42V (dc + ac peak)	Test voltage: 500V (r.m.s.) according to IEC348
**  Maximum safe input voltage	400V (dc + ac peak)	
Hold-off time	variable	

<i>Designation</i>	<i>Specification</i>	<i>Additional Information</i>
1.2.5. X Deflection		
Source	A, B, EXT., EXT., ÷ 10 or LINE	As selected by trigger source switch, if TIME/DIV switch is in pos. X DEFL.
Deflection coefficients	A or B: As selected by AMPL/DIV EXTERNAL: 0.2V/DIV EXT.: ÷ 10 : 2V/DIV LINE ≥ 8 divisions	
Deflection accuracy	± 10%	
Frequency range	DC: 0 ... 1MHz (-3dB) AC: 5Hz ... 1MHz (-3dB)	
Phase shift	≤ 3° at 100kHz	
Dynamic range	24 divisions	For frequencies ≤ 100kHz
1.2.6. Calibration generator		
Output voltage	1.2Vpp	Square wave
Accuracy	± 1%	
Frequency	≈ 2kHz	
1.2.7. Power supply		
AC supply:		
Nominal voltage range (on line-mains voltage adaptor)	110, 127, 220 or 240 Vac ± 10%	
Nominal frequency range	50 ... 400Hz ± 10%	
Power consumption	28W max.	At nominal mains voltage
Battery supply:		
Voltage range	22-27Vd.c. 20-28V	Battery minus (-) connected to chassis With relaxed specifications
Current consumption	1.1A max.	
Capacity to earth	110pF 23pF	Measured with rubber feet on earthed metal plate of 1m ² Measured 30cm above earthed plate of 1m ²
1.2.8. Environmental characteristics		

The environmental data are valid only if the instrument is checked in accordance with the official checking procedure. Details on these procedures and failure criteria are supplied on request by the PHILIPS organisation in your country, or by N V. PHILIPS' GLOEILAMPENFABRIEKEN, TEST AND MEASURING DEPARTMENT, EINDHOVEN, THE NETHERLANDS.

Ambient temperatures:

Rated range of use	+ 5°C ... +40°C
Operating	-10°C ... +55°C
Storage and transport	-40°C ... +70°C

Altitude:

Operating to	5000m (15000 ft)
Non-operating to	15000m (45000 ft)

Humidity 21 days cyclic damp heat 25°C–40°C, R.H. 95%

Shock 30g: half sinewave shock of 11ms duration: 3 shocks per direction for a total of 18 shocks.

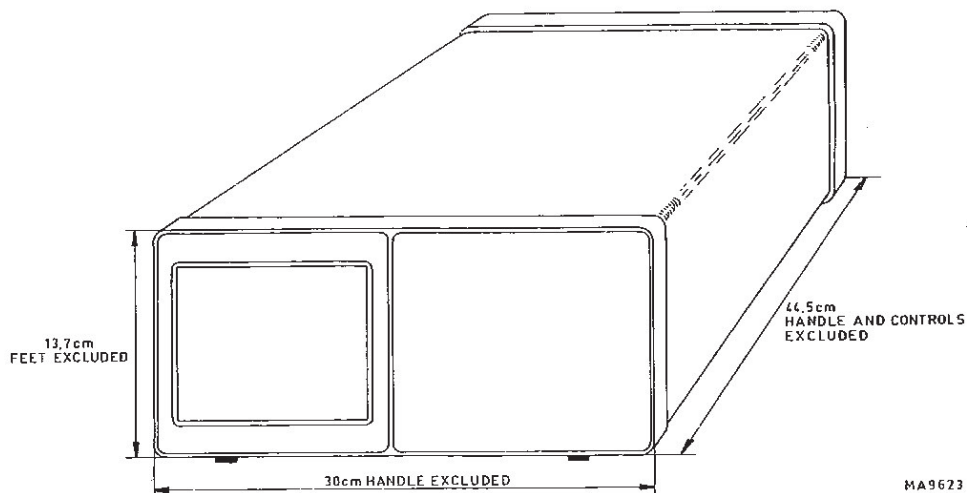
Vibration Vibrations in three directions with a maximum of 15min. per direction, 5 – 55Hz and amplitude of 0.7mm_{pp} and 4g max. acceleration.
Unit mounted on vibration table without shock absorbing material.

Electromagnetic interference Meets VDE 0871 and VDE 0875 Grenzwertklasse B.

1.2.9. Mechanical data

Dimensions:

Length	445mm	Handle and controls excluded
Width	300mm	Handle excluded
Height	137mm	Feet excluded
Weight	7.9kg	



MA 9623

Fig 1.2.

1.2.10 Z-mod input

0V=off