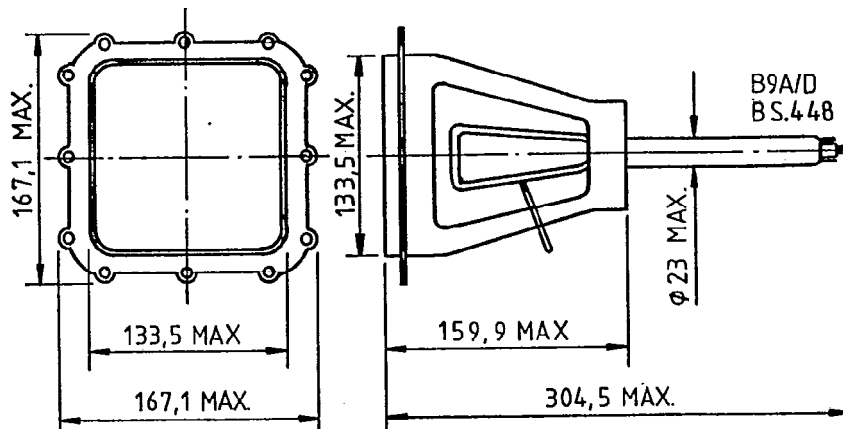


BRITISH STANDARDS INSTITUTION 2, PARK STREET, LONDON, W1A 2BS	BS CECC 11001-004 ISSUE 1 March 1982
Specification available from:- AS SHOWN IN PD 9002, CECC 00 200 AND THORN EMI BRIMAR LIMITED, GREENSIDE WAY, MIDDLETON, MANCHESTER M24 1SN. Tel: 061-681 7072 Telex: 665326	 Page 1 of 25 pages
ELECTRONIC COMPONENTS OF ASSESSED QUALITY DETAIL SPECIFICATION IN ACCORDANCE WITH BS CECC 11000: 1980	MANUFACTURER'S TYPE NUMBER 17F/50401S and 17J/50400S SEE PD 9002 AND CECC 00 200
Outline and dimensions Third angle projection  Dimensions in mm For detail dimensions and base connections see Appendix B. Marking information clause 5	For ordering information See Clause 6 RADAR DISPLAY CATHODE RAY TUBE Deflection: Magnetic Focus: Magnetic Useful Screen: 100mm x 100mm Phosphor: S(Jedec P31) Colour: Green Persistence: Medium short Faceplate: Fibre optics (See appendix 1) Numerical aperture: 17F/50401S 0.6-0.75 17J/50400S 0.3-0.43 Tube potted in a mounting housing FULL ASSESSMENT + ADDITIONAL ASSESSMENT

Data (not for inspection purposes)

		Min.	Max.	Units
1. <u>Mechanical</u>				
Mounting position	Unrestricted			
Mass		1.5	2	kg
2. <u>Environmental</u>				
Shock, peak acceleration		-	490	m/s ²
time duration		-	11	ms
Vibration, acceleration		9.8	19.6	m/s ²
frequency range		5	500	Hz
Air pressure		17	300	kN/m ²
Temperature (operating)		-40	+85	°C
Temperature (storage)		-55	+85	°C

DATE CONTINUED ON NEXT PAGE

Refer to Qualified Products List PD 9002 and/or CECC 00 200 for details of manufacturers approved to this specification.



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DATA (not for inspection purposes) continued3. Limiting Values (absolute maximum rating system IECl34)

	<u>Min.</u>	<u>Max.</u>	<u>Units</u>
Heater voltage	5.8	6.8	V
Heater to cathode, positive voltage	-	200	V
negative voltage	-	200	V
Intensity modulator electrode negative voltage	1	200	V
Intensity modulator electrode positive voltage	modulator must never become positive		
Final anode voltage (w.r.t. cathode; anode at ground potential)	8	15	kV

4. Operating conditions and typical characteristics (not for inspection purposes)

	<u>Min.</u>	<u>Max.</u>	<u>Units</u>
Heater voltage	5.8	6.8	V
Heater current	275	325	mA
Focusing requirements	Dependent on coil used		
Modulator cut-off voltage at final anode = 10kV (w.r.t. cathode; final anode at ground potential)	-55	-110	V
Useful screen dimensions	100x100		mm
Resolution (line width to 20% level) at final anode = 10kV (w.r.t. cathode; final anode at ground potential)	-	0.64	mm

5. Marking The following shall be clearly and durably marked on the tube and primary pack

1. Manufacturer's type number.
2. Manufacturer's code.
3. Date code.
4. BS-CECC 11001-004.
5. Manufacturer's serial number.
6. NATO stock number if applicable.

Special marking relating to hazards. Each tube and package shall contain a warning of hazards in respect of handling, implosion and X-rays.

6. Ordering information

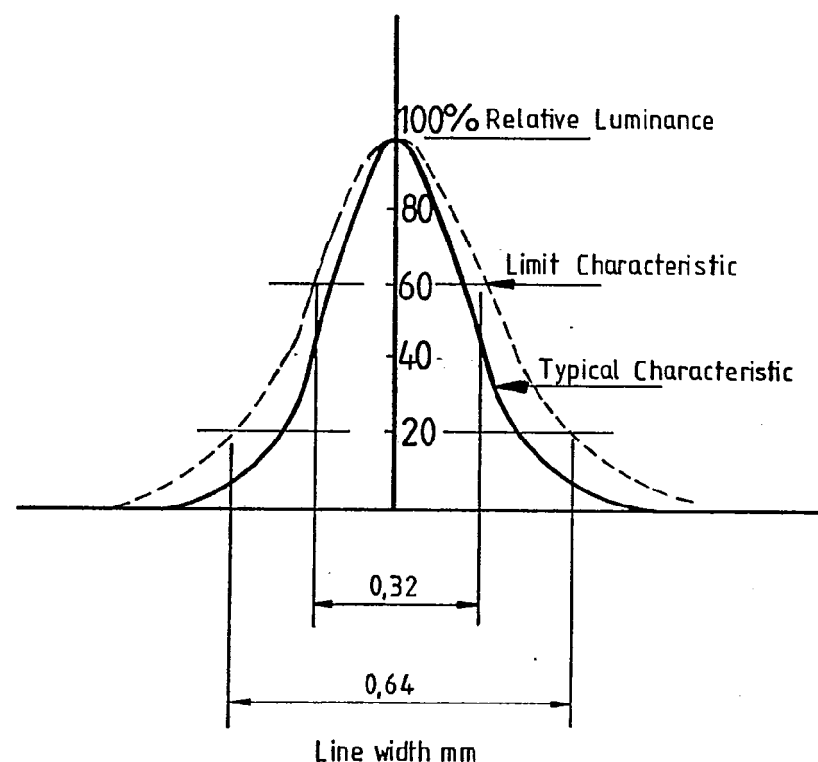
Orders for this cathode ray tube shall contain the following minimum information.

1. Quantity.
2. Manufacturer's type number.
3. BS CECC 11001-004 and where applicable the NATO Stock Number.

Any special requirements and packaging instructions shall be included in the order.

10. Additional information continued

6. Precautions taken in manufacture reduce the possibility of spontaneous implosion to a minimum, but any additional stress due to mishandling considerably increases the risk of implosion, such implosion may occur immediately or may be delayed. Particular care should be taken not to scratch any part of the tube envelope, especially the faceplate as this will appreciably weaken the glass and may lead to implosion of the tube. The tube should always be transported in the original packing designed for the purpose and kept in that packing until required for installation. When a tube is not in its equipment or original packing, it should be placed face downwards on a soft pad of suitable material free from abrasive substances.
7. The faceplate is roughened by an approved method so that the transmission loss is in the region of 10% to 15% and the surface can be readily marked with a Van Dyke multi 666 Eberhard Faber pencil and the mark can be subsequently easily erased with a damp pad.
8. Line width profile luminosity curve. Typical curve obtained under test conditions given in Subgroup A1 - Resolution test.



SUB-GROUP A1 CONTINUED

INSPECTION or TEST	REFERENCE CECC 11000	CONDITIONS of TEST	INSPECTION REQUIREMENTS				
			MIN.	MAX.	UNITS	IL	AQL
- Cathode emission	4.6.3	Minimum cathode factor $K = 2$ Overscan raster (unfocused) Vmod equal to half value found in TM 4.6.2	Calculated $I_k(\min) = \frac{K(V_{\text{mod}})^{3/2}}{\sqrt{128}}$		μA		
- Quality of fluorescent screen and faceplate	4.6.10	Adjust Vmod for convenient screen luminance. Overscan raster defocused. Useful screen area	100 x 100		mm		
		Uniformity of brightness. Examine using an eye corrected photocell having an aperture of 20 mm.		2:1	ratio		
- Undelected spot position (focused)		Appendix C. Distance from geometric centre of frame.		3	mm		
- Luminance characteristics	4.6.4	Procedure 2. Focused raster 80 x 80 mm. Vmod (drive) = 50 V above value found in TM 4.6.2. Distance D = 2.28 m in a direction normal to faceplate. Aperture of photo detector to subtend an angle of less than 2° . Focused for minimum luminance raster or alternatively focus coil current to be the value recorded in 4.6.14.3.	2000 (17F/50401S)		cd/m^2		
			1200 (17J/50400S)		cd/m^2		

SUB-GROUP A1 CONTINUED

INSPECTION or TEST	REFERENCE CECC 11000	CONDITIONS of TEST	INSPECTION REQUIREMENTS				
			MIN.	MAX.	UNITS	IL	AQL
- Resolution	4.6.14.5 Method A2	Measured at screen centre and 40 mm from screen centre. Line width measured at 20 % of peak luminance. Single line 100 mm. Duration 54 μ s p.r.f. 50 Hz. Pulse rise and fall times within 10 % of pulse duration. Droop within 10 % of pulse amplitude. Vmod (drive) = 50 V above value found using TM 4.6.2. Focus line along its length to give a substantially uniform width.		0.64	mm		
	4.6.14.3	Alternative method. Conditions as in previous 4.6.14.5. Record focus coil current.					
- Stray emission	4.6.6	Pre-heat cathode for 120 s min. Switch off deflection coil current. Adjust Vmod to cut-off. Final anode voltage = 15 kV (w.r.t. cathode; final anode at ground potential). Screen horizontal and uppermost.		Performance requirements as in 4.6.6			

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SUB-GROUP A1 CONTINUED

INSPECTION or TEST	REFERENCE CECC 11000	CONDITIONS of TEST	INSPECTION REQUIREMENTS				
			MIN.	MAX.	UNITS	IL	AQL
- Flashover	4.6.7 Method A	Pre-heat cathode for 120 s min. Raster over useful screen area. Adjust Vmod to cut-off. Final anode voltage = 15 kV (w.r.t. cathode; final anode at ground potential) switched continuously 4 s on and 1 s off. Screen horizontal and uppermost. Tap neck for 30 s.					
- EHT surge arrester striking voltage, running voltage, colour coding and correctness of terminations.		Appendix D. Striking voltage Running voltage	- 50	300 100	V V		
SUB-GROUP A2						11	1,5
- Mechanical spot displacement (Unfocused)	4.6.5 Method B	Adjust Vmod to give smallest discernable spot. Distance from geometric centre of screen.		6	mm		
Remaining applicable Sub-Group A2 tests performed 100% in Sub-Group A1							
SUB-GROUP A3						S4	6,5
- Heater current	4.6.8	Apply Vh = 6.3 V only	270	330	mA		
- Heater-cathode leakage	4.6.9						
(1) Heater positive w.r.t. cathode		Vh-k (heater positive) = 100V		10	µA		
(2) Heater negative w.r.t. cathode		Vk-h (heater negative) = 100V		10	µA		