

# Dieter's Nixie Tube Data Archive

This file is a part of Dieter's Nixie- and display tubes data archive

If you have more datasheets, articles, books, pictures or other information about Nixie tubes or other display devices please let me know.

Thank you!

Document in this file	Philips Data Handbook: Pages covering the ZM1041 and ZM1043 tubes
Display devices in this document	ZM1041, ZM1043

# INDICATOR TUBE

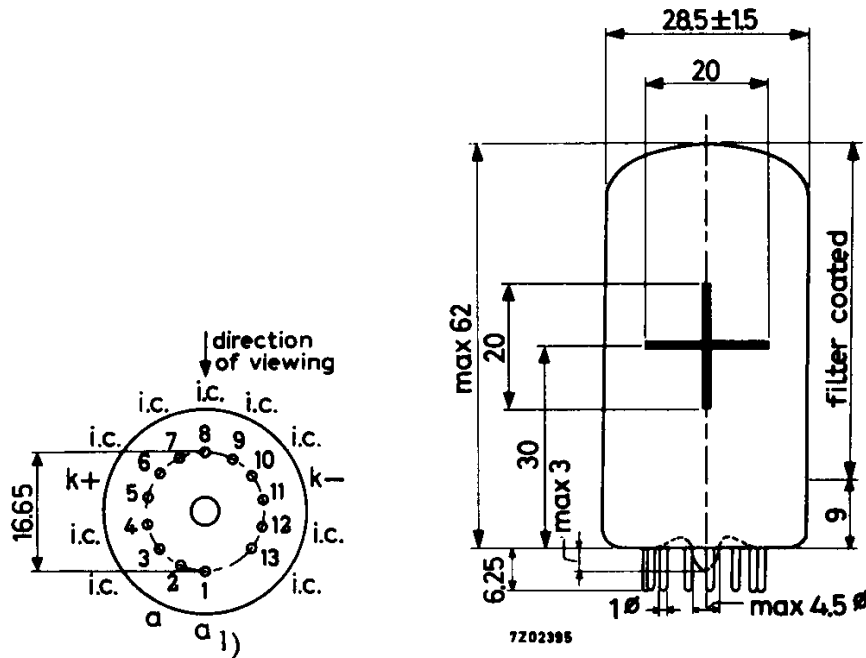
Cold cathode sign indicator tube for side viewing.

QUICK REFERENCE DATA	
Sign height	20 mm
Signs	+ -
Supply voltage	170 V
Cathode current	4.5 mA

## DIMENSIONS AND CONNECTIONS

Dimensions in mm

Base: B13B



## GENERAL

The tube has the same physical dimensions as the ZM1040 numeral indicator tube. The ZM1041 is provided with a red contrast filter.

1) Pins 1 and 2 to be interconnected externally.



**CHARACTERISTICS**

Ignition voltage	$V_{ign}$	max.	170	V
Maintaining voltage	$V_m$	see sheets 3 and 4		
Extinguishing voltage	$V_{ext}$	min.	120	V
"Off" cathode probe current characteristic		see sheet 4		

**PRINCIPLE OF OPERATION**

The tube contains two cathodes, in the form of the signs + and -, and a common anode. By applying a suitable voltage between the anode and one of the cathodes the corresponding sign will be covered by a red neon glow.

**ACCESSORIES**

Socket 2422 505 00001, 2422 505 00002 or 2422 505 00003

**MOUNTING POSITION**

Any

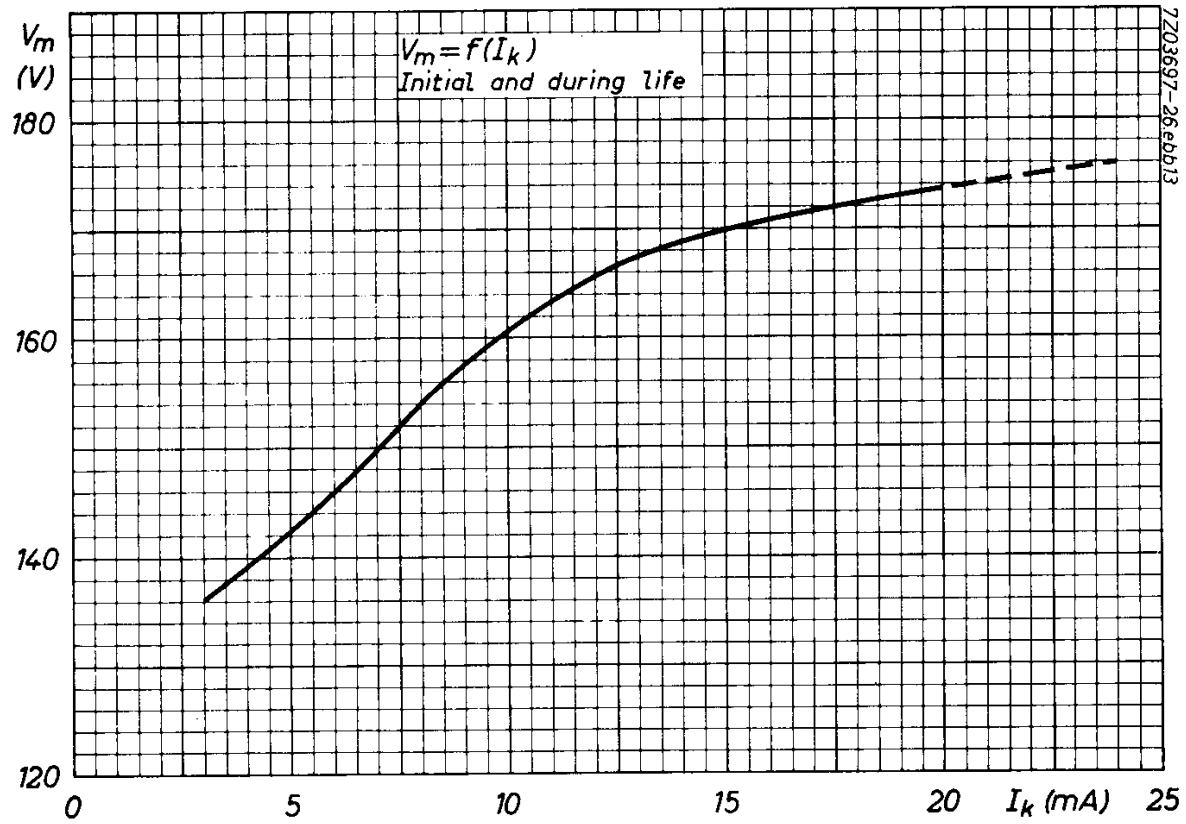
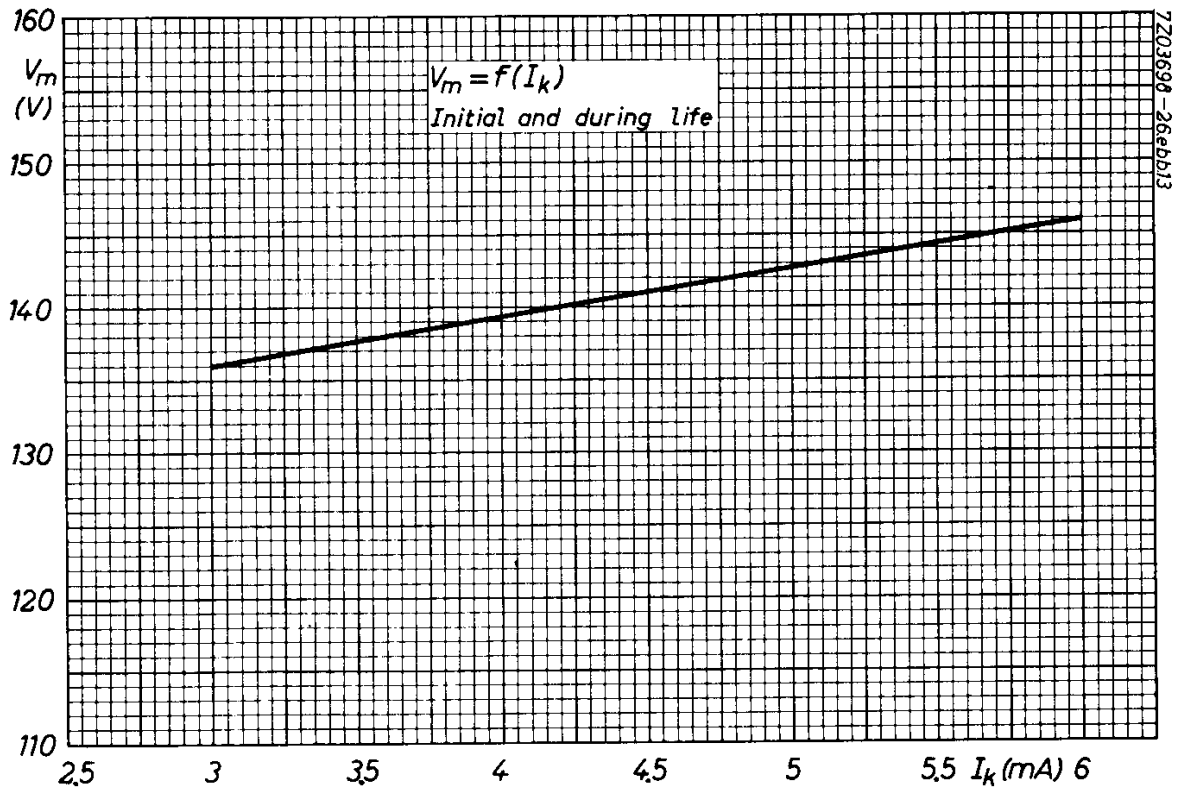
The signs are viewed through the side of the envelope.

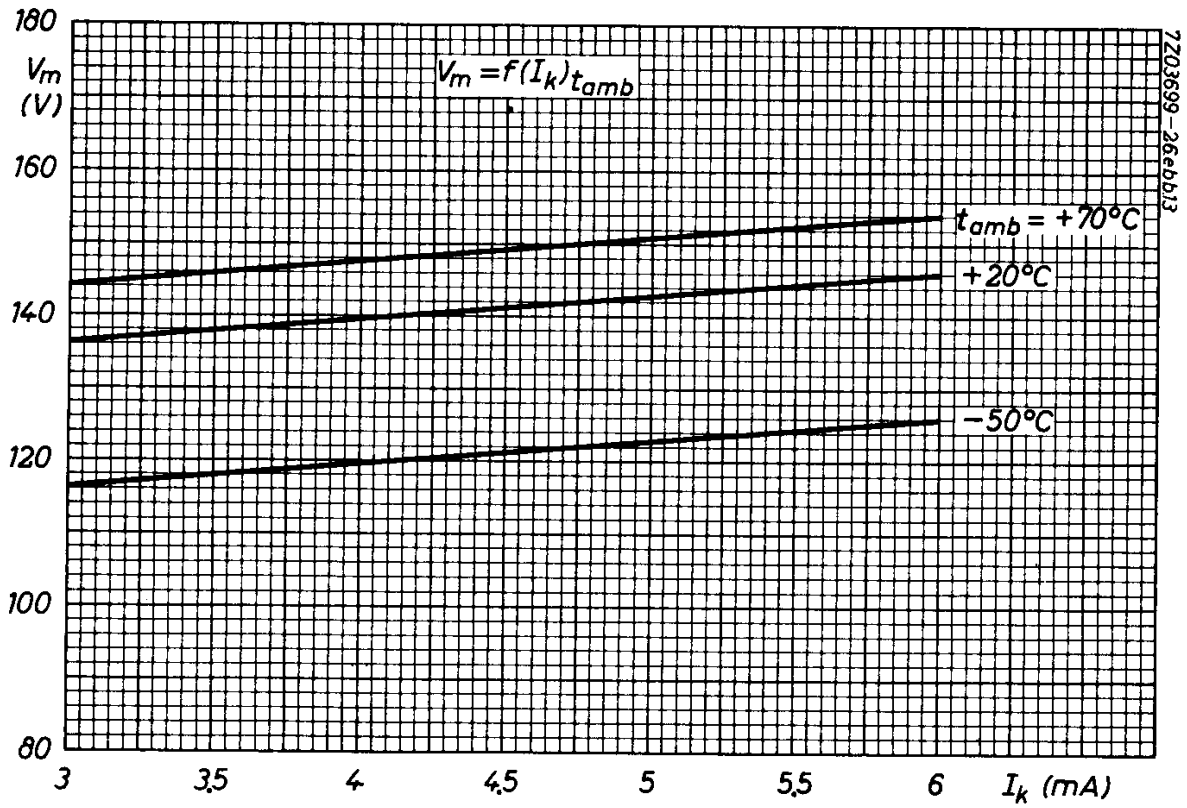
**LIMITING VALUES** (Absolute max. rating system)

Anode voltage necessary for ignition	$V_a$	min.	170	V
Cathode current,				
average during any conduction period	$I_k$	min.	3	mA
average ( $T_{av} = 20$ ms)	$I_k$	max.	6	mA
peak	$I_{kp}$	max.	20	mA
Impulse duration	$T_{imp}$	min.	80	$\mu s$
Cathode selecting voltage	$V_{kk}$	min.	60	V
Bias voltage between anode and "off" cathode	$V_{bias}$	max.	120	V
Bulb temperature	$t_{bulb}$	max.	+70	$^{\circ}C$ <sup>1)</sup>
		min.	-50	$^{\circ}C$

<sup>1)</sup> Bulb temperatures below 10<sup>o</sup>C result in a reduced life expectancy and changes in characteristics (see sheet 4).

In designing equipment to be used within a wide temperature range the use of "constant current operation" (high supply voltage with a high anode series resistor) is recommended.





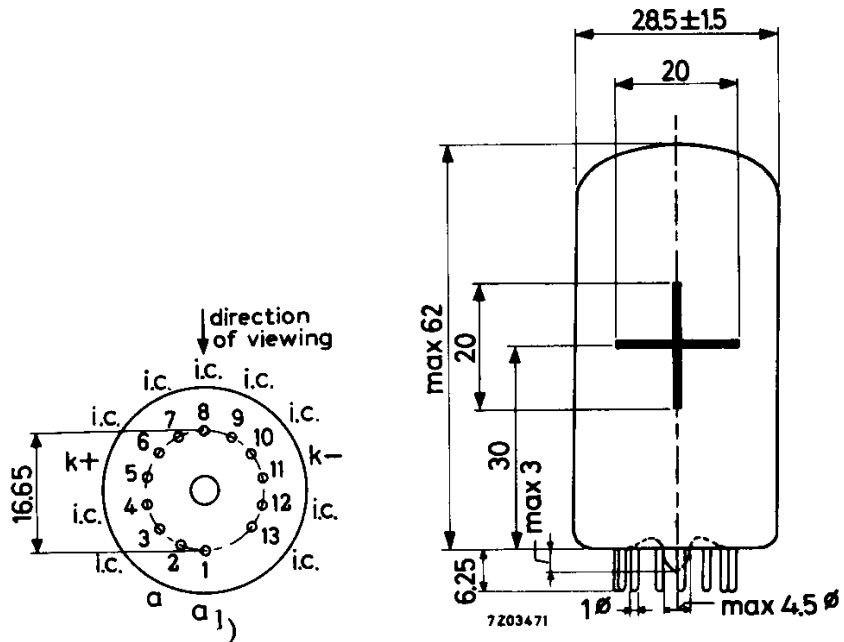
## INDICATOR TUBE

The type ZM1043 is electrically identical with type ZM1041 but has no filter coating. The use of a separate blue absorbing, e.g. circular polarized amber filter is recommended.

### DIMENSIONS AND CONNECTIONS

Dimensions in mm

Base: B13B



1) Pins 1 and 2 to be interconnected externally.