

ELECTRONIC TUBE REFERENCE

6977

Tuning Indicator electronic tube

CONSOLIDATED TECHNICAL DATA
1 SECTION
CONSTRUCTION
TUNINGINDICATOR

Subminiature directly heated voltage-indicator tube, DM160/6977, designed to show the switching state of flip-flop and logic circuits with a visible luminous strip.

GENERAL CHARACTERISTICS

BASE DESIGNATION	Subminiature wire-leaded	BASE PINS	5
NOMINAL HEATER	1 V / 30 mA	PARALLEL HEATER	– / –
HEATING	Direct	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION1 Tuning Indicator	
TRANSCONDUCTANCE	0.00045 S
AMPLIFICATION FACTOR	30
MAXIMUM PLATE VOLTAGE	65 V
MAXIMUM CATHODE CURRENT	0.75 mA
Published promoted fields populated from the datasheet; identical repeated sections compressed where applicable.	

Valvo DM160/6977 is a subminiature voltage-indicator tube designed to show the switching state of flip-flop circuits and to mount directly in printed wiring. It uses a 1.0 V directly heated cathode and a visible luminous strip.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1950 Sylvania

Published test conditions and operating points. Values on this page are preserved as reported by this source.

1950 SYLVANIA

Section 1 · Tuning Indicator

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum Plate Voltage	65 V	—
Maximum Cathode Current	0.75 mA	—
Typical Plate Voltage	50 V	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Current at Maximum Light Output	585 μ A	—

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1961 Tung Sol

Published test conditions and operating points. Values on this page are preserved as reported by this source.

1961 TUNG SOL

Section 1 · Tuning Indicator

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
LightOutput	8 mcd	PlateVoltage=50V;GridSupplyVoltage=0V

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate To Filament Capacitance	1.1 pF	—



SOURCE OPERATING CONDITIONS

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1963 Amperex Condensed

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1963 AMPEREX CONDENSED

Section 1 · Tuning Indicator

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Anode voltage	50 V	DC

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid voltage at zero light output	3.5 V	—
Grid voltage at maximum light output	0 V	—
Rated life	20000 h	—



SOURCE OPERATING CONDITIONS

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1965 Nixie Valvo

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1965 NIXIE VALVO

Section 1 · Tuning Indicator

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	1 V	Direct AC or DC heater; +/-5% absolute limit
Heater current	30 mA	Nominal; published tolerance +/-6 mA
Guaranteed life	10000 h	Average over 100 tubes
Failure factor	1.5 permille/1000h	Published reliability factor

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Isolation resistance	100 MOhm	Between two electrodes at 50 V
Luminous strip length	11 mm	Approximate

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Operating supply voltage	50 V	AC heater operating data
Series/grid resistor	100 kOhm	Published operating circuit
Maximum anode supply voltage	—100 V	Absolute value
Maximum electrode voltage at zero current	—100 V	Absolute value
Maximum electrode voltage	—65 V	Absolute value
Maximum indicator current	—0.75 mA	Absolute value; 750 uA
Grid resistor	0.1–1 MOhm	Absolute limits


SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

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1965 Sylvania Electronic Tubes Vol3

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1965 SYLVANIA ELECTRONIC TUBES VOL3

Section 1 · Tuning Indicator

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Filament voltage	1 V	—
Filament current	30 mA	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate current maximum	750 uA	—
Grid resistance maximum	1 Mohm	—
Typical plate voltage	50 V	—
Typical grid resistance	100000 ohm	—
Typical grid voltage	0 V	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Typical plate current	585 μ A	—
Alternate grid voltage	-3 V	—
Alternate plate current	5 μ A	—

APPLICATION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Application	Fluorescent light-output indicator / transducer	—


SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

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1966 Tung Sol Electronic Tubes 4 of 4

Published test conditions and operating points. Values on this page are preserved as reported by this source.

1966 TUNG SOL ELECTRONIC TUBES 4 OF 4

Section 1 · Tuning Indicator

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	1 V	Nominal
Heater current	30 mA	Nominal
Maximum plate voltage	65 V	Promoted published value
Maximum cathode current	0.75 mA	Promoted published value
LIMITS OF APPLIED FILAMENT VOLTAGE 0.95	-1.05 V	AVERAGE CHARACTERISTICS 1.0 VOLTS 30 MA.
PLATE VOLTAGE	65 V	MAXIMUM RATINGS
POSITIVE GRJD SUPPLY VOLTAGE	0 V	MAXIMUM RATINGS
NEGATIVE GRID VOLTAGE	50 V	MAXIMUM RATINGS
GRID CIRCUIT RESISTANCE	7 ohm	MAXIMUM RATINGS
MINIMUM GRID CIRCUIT RESISTANCE	0.1 ohm	MAXIMUM RATINGS
PLATE VOLTAGE	50 V	TYPICAL OPERATION
WITH GRID SUPPLY VOLTAGE —	3 V	TYPICAL OPERATION

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
LIGHT OUTPUT MEASURED BY COMPARISON WITH A TUNGSTEN LAMP OF 1,870 °K COLOR TEMPERATURE	1870 A	TYPICAL OPERATION

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	450 uS	Promoted published value
Amplification factor	30	Promoted published value
PLATE VOLTAGE	50 V	AVERAGE CHARACTERISTICS
TRANSCONDUCTANCE	450 uS	AVERAGE CHARACTERISTICS
AMPLIFICATION FACTOR 30	30 A	AVERAGE CHARACTERISTICS


SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

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1969 Nixie Valvo

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1969 NIXIE VALVO

Section 1 · Tuning Indicator

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	1 V	Direct AC or DC heater; +/-5% absolute limit
Heater current	30 mA	Nominal; published tolerance +/-6 mA
Guaranteed life	10000 h	Average over 100 tubes
Failure factor	1.5 permille/1000h	Published reliability factor
Isolation resistance	100 MOhm	Between two electrodes at 50 V
Luminous strip length	11 mm	Approximate

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Operating supply voltage	50 V	AC heater operating data
Series/grid resistor	100 kOhm	Published operating circuit
Maximum anode supply voltage	—100 V	Absolute value

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum electrode voltage at zero current	—100 V	Absolute value
Maximum electrode voltage	—65 V	Absolute value
Maximum indicator current	—0.75 mA	Absolute value; 750 uA
Grid resistor	0.1–1 MOhm	Absolute limits