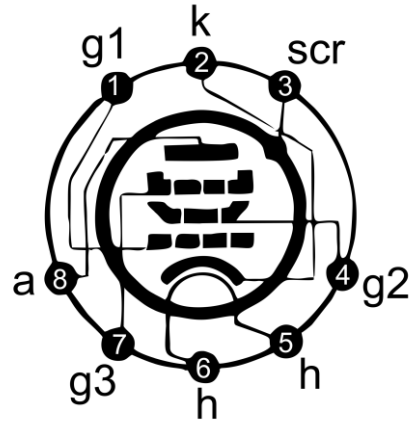




TYPE: VF14M Supertube  
**GOLD DOT** Y8A OCTAL  
 AUDIO PENTODE

The Phædrus Audio VF14M Gold Dot Supertube is suitable for direct replacement of the VF14 (VF14M) tube in Neumann U47 and U48 microphones and other derivative microphones originally specifying this device. See technical specification below. For more information and enquiries, [email sales@phaedrus-audio.com](mailto:sales@phaedrus-audio.com).

The Phædrus Audio VF14M Gold Dot Supertube is designed as a drop-in replacement (Note 1) for the original Telefunken tube. No modifications to the microphone are necessary.



## VF14M Gold Dot Supertube™

### Technical Specifications

#### Recommended operating conditions

**Heater voltage:** Underrun at 35V: fed by 1800Ω resistor from HT (*Note 1.*)

**Heater current:** 40mA

**HT Supply:** 90V (nominal)

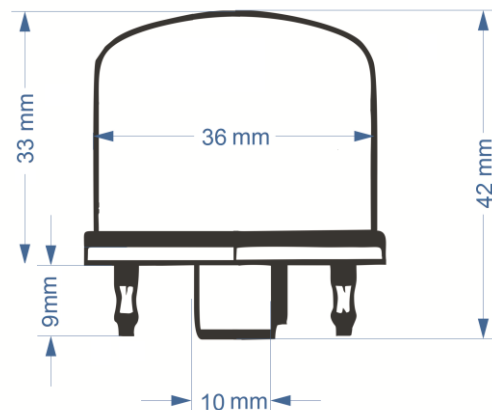
**Anode load:** 100k

**Anode volts:** approx. 35V

**Grid voltage:** 0V

**Grid resistor:** 60 - 100MΩ

**Cathode circuit:** No modification necessary



#### Notes:

1. Unlike Phædrus Audio's standard VF14M replacement part, polarity is unimportant in the VF14M Supertube.



Version 1.0 - May 2019



Before using a Phædrus Audio Electronic Tube, please read carefully the specifications and applications information in the datasheet. Improper installation or failure to respect parameter limits may cause damage to the component, modify its characteristics and decrease reliability and useful life. Phædrus Audio's Limited Warranty does not extend to any Phædrus Audio product that has been damaged or rendered defective due to accident, misuse, or abuse. See [http://www.phaedrus-audio.com/phaedrus\\_t&cs.htm](http://www.phaedrus-audio.com/phaedrus_t&cs.htm) for Phædrus Audio's latest Terms and Conditions.



TYPE: **VF14M**  
SUBMINIATURE  
AUDIO TRIODE

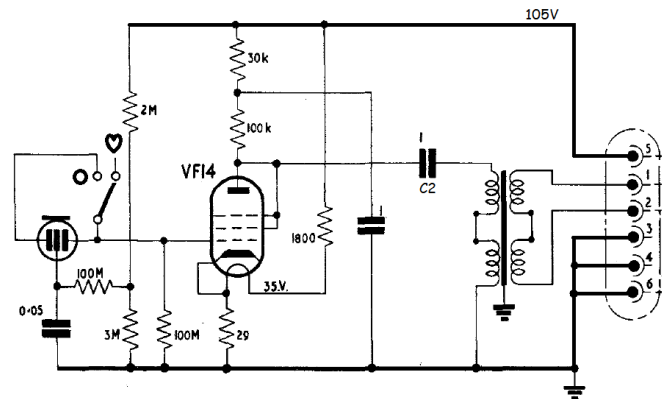
### Application information



The Neumann U47 is a switchable omni'/cardioid microphone with a high sensitivity of 25mV/Pa (in cardioid configuration). The polar pattern is switchable by means of selecting the signal from one or both the diaphragms either side of the common back plate.

The back plate is held at a constant tension of about 55V and the charge is held steady by feeding this through a very large resistance. The impedance-converter uses a VF14 tube which acts as a voltage amplifier circuit and drives the output transformer which loses most of the voltage gain of the tube, but translates the output impedance to drive the microphone cable. There is only one supply (105V at 40mA) which is used for the HT and for the heater supply for the tube (specified to be the 55V, but under-run in this application at about 35V). The heater supply is simply dropped by the 1800Ω resistor which dissipates about 2.6 watts in the process!

The U48 microphone is identical to the U47 in every way, except for the selection of directional characteristics; the U48 offering the choice of cardioid and figure-of-eight instead of the U47's choice of cardioid and omni-directional.



### Warranty and service

The VF14M Supertube is covered by Phædrus Audio's Gold Dot warranty ([http://www.phaedrus-audio.com/red\\_dot.htm](http://www.phaedrus-audio.com/red_dot.htm)) and Lifetime Care service level agreement ([http://www.phaedrus-audio.com/phaedrus\\_care.htm](http://www.phaedrus-audio.com/phaedrus_care.htm)).



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