

# 'PHILIPS NEON STABILISER TUBES

| Type Number  | Maximum dimensions without pins<br>mm | Base (Connection reference in brackets, see p. 12) | Running voltage at the given quiescent current<br>Volts | Striking voltage<br>Volts | Extinction voltage<br>Volts | Quiescent current at the given running voltage<br>mA | Maximum permissible current<br>mA | Lower current limit for stabilisation<br>mA | A.C. resistance<br>Ohms |
|--------------|---------------------------------------|----------------------------------------------------|---------------------------------------------------------|---------------------------|-----------------------------|------------------------------------------------------|-----------------------------------|---------------------------------------------|-------------------------|
| <b>4357</b>  | 106 × 60                              | A35 (XVIII)                                        | 90—100                                                  | 100—110                   | 83                          | 20                                                   | 45                                | 10                                          | 100                     |
| <b>4376</b>  | 115 × 60                              | Edison (XX)                                        | 90—100                                                  | 100—110                   | 83                          | 20                                                   | 45                                | 10                                          | 100                     |
| <b>4377</b>  | 115 × 60                              | Edison (XX)                                        | 105—115                                                 | 130—140                   | 104                         | 20                                                   | 45                                | —                                           | 80                      |
| <b>4687</b>  | 94 × 29                               | P26 (XVI)                                          | 90                                                      | 105                       | 85                          | 20                                                   | 40                                | 5                                           | 180                     |
| <b>7475</b>  | 60 × 28                               | A25.5 (XIX)                                        | 90—110                                                  | 100—135                   | 85—110                      | 4                                                    | 8                                 | 1                                           | 300                     |
| <b>13201</b> | 144 × 53                              | Ed or A40 (XX), (XIX)                              | 90—110                                                  | 100—135                   | 85—110                      | 100                                                  | 200                               | 5                                           | 80                      |

# PHILIPS PHOTO-ELECTRIC CELLS

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| Type Number | Valve type                              | Maximum dimensions without pins<br>mm | Base (in brackets base connections, see p. 12) | Anode cathode capacity C <sub>ak</sub><br>μF | Norm. anode voltage V <sub>a</sub><br>Volts | Sensitivity<br>μA/Lm <sup>1)</sup> | Striking voltage<br>Volts | Max. anode voltage V <sub>a</sub> max<br>Volts | Max. anode current I <sub>a</sub> max<br>μA | Min. protective resistance<br>MΩ |
|-------------|-----------------------------------------|---------------------------------------|------------------------------------------------|----------------------------------------------|---------------------------------------------|------------------------------------|---------------------------|------------------------------------------------|---------------------------------------------|----------------------------------|
| <b>3510</b> | High vacuum cell with potassium cathode | 165 × 60                              | H (XXII)                                       | 3                                            | 100                                         | 3                                  | —                         | 500                                            | 3                                           | —                                |
| <b>3512</b> | High vacuum cell with potassium cathode | 118 × 55                              | A (XXI)                                        | 3                                            | 100                                         | 20                                 | —                         | 500                                            | 5                                           | —                                |
| <b>3530</b> | High vacuum cell with caesium cathode   | 60 × 16                               | (XXIII)                                        | 5                                            | 100                                         | 150                                | ≥ 140                     | 100                                            | 3                                           | 0.1                              |
| <b>3533</b> | High vacuum cell with caesium cathode   | 60 × 25                               | (XXIV)                                         | 5                                            | 100                                         | 150                                | ≥ 140                     | 100                                            | 3                                           | 0.1                              |
| <b>3534</b> | High vacuum cell with caesium cathode   | 85 × 25                               | (XXV)                                          | 5                                            | 100                                         | 150                                | ≥ 140                     | 100                                            | 3                                           | 0.1                              |

<sup>1)</sup> Measured with a tungsten filament lamp. The temperature of the tungsten filament is 2600° K and the light current measured statically is 0.05 lumen.

# PHILIPS GASFILLED TRIODES FOR TIME BASE UNITS

| Type Number | Gasfilled | Maximum dimensions<br>mm | Base (in brackets base connection, see p. 12) | Indirect heating |                  | Capacity between                   |                                       |                                      | Arc voltage (Extinction voltage)<br>Volts | Max. peak value of voltage between 2 electrodes<br>Volts | Max. peak value of anode voltage<br>Volts | Max. peak value of anode current<br>mA | Maximum value of mean anode current in oscillating condition mA <sup>1)</sup> | Minimum resistance in grid circuit per volt peak voltage at grid Ω | Maximum resistance in grid circuit R <sub>g</sub> max<br>MΩ | Maximum voltage between filament & cathode (Volts*) | Ratio between striking voltage and grid voltage | Maximum attainable frequency<br>c/sec | Type Number |
|-------------|-----------|--------------------------|-----------------------------------------------|------------------|------------------|------------------------------------|---------------------------------------|--------------------------------------|-------------------------------------------|----------------------------------------------------------|-------------------------------------------|----------------------------------------|-------------------------------------------------------------------------------|--------------------------------------------------------------------|-------------------------------------------------------------|-----------------------------------------------------|-------------------------------------------------|---------------------------------------|-------------|
|             |           |                          |                                               | Voltage<br>Volts | Current<br>Amps. | Grid & anode C <sub>ag</sub><br>μF | Anode & cathode C <sub>ak</sub><br>μF | Grid & cathode C <sub>gk</sub><br>μF |                                           |                                                          |                                           |                                        |                                                                               |                                                                    |                                                             |                                                     |                                                 |                                       |             |
| <b>4686</b> | Argon     | 100 × 37                 | P30 (IX)                                      | 4,0              | 1,2              | 2,2                                | 3,2                                   | 3,8                                  | about 17                                  | 350                                                      | 300                                       | 300                                    | 3                                                                             | 1000                                                               | 0,5                                                         | 100                                                 | 21                                              | 50.000                                | <b>4686</b> |
| <b>4690</b> | Helium    | 100 × 43                 | P30 (X)                                       | 4,0              | 1,3              | 3,7                                | 2,0                                   | 3,7                                  | about 50                                  | 600                                                      | 500                                       | 750                                    | 10                                                                            | 1000                                                               | 0,5                                                         | 100                                                 | 40                                              | 150.000                               | <b>4690</b> |

<sup>1)</sup> In a time-base circuit.

<sup>2)</sup> Cathode always positive with respect to the filament.

# PHILIPS AMPLIFIER VALVES FOR SPECIAL PURPOSES

| Type Number | Valve type and application                                 | Maximum dimensions without pins<br>mm | Base (Connection reference in brackets see p. 12) | Filament data |                  |                  | Max. anode voltage V <sub>a</sub> max<br>Volts | Anode current I <sub>a</sub><br>mA | Neg. grid bias V <sub>g1</sub><br>Volts | Screen-grid voltage V <sub>g2</sub><br>Volts | Voltage on 3rd grid V <sub>g3</sub><br>Volts | Screen-grid current I <sub>g2</sub><br>mA | Conduct. at operating point S<br>mA/V | Amplification factor μ | Internal resistance R <sub>i</sub><br>Ohms | Grid current of 1st grid I <sub>g1</sub><br>μA | Capacity between                          |                                         |                                            | Type Number |
|-------------|------------------------------------------------------------|---------------------------------------|---------------------------------------------------|---------------|------------------|------------------|------------------------------------------------|------------------------------------|-----------------------------------------|----------------------------------------------|----------------------------------------------|-------------------------------------------|---------------------------------------|------------------------|--------------------------------------------|------------------------------------------------|-------------------------------------------|-----------------------------------------|--------------------------------------------|-------------|
|             |                                                            |                                       |                                                   | Heating       | Voltage<br>Volts | Current<br>Amps. |                                                |                                    |                                         |                                              |                                              |                                           |                                       |                        |                                            |                                                | Anode and 1st grid C <sub>ag1</sub><br>μF | Anode and cathode C <sub>ak</sub><br>μF | 1st grid and cathode C <sub>gk</sub><br>μF |             |
| <b>C408</b> | Triode for valve voltmeter and other measuring instruments | 150 × 58                              | A 35 (XI)                                         | dir.          | 4,0              | 0,25             | 150                                            | 14                                 | —7                                      | —                                            | —                                            | —                                         | 2,7                                   | 8                      | 3000                                       | —                                              | —                                         | —                                       | —                                          | <b>C408</b> |
| <b>4060</b> | Electrometer triode                                        | 152 × 59                              | H 35 (XII)                                        | dir.          | about 0,5—0,7    | 1,0              | 4                                              | —                                  | —2,5                                    | —                                            | —                                            | —                                         | 0,028                                 | 0,5                    | —                                          | <10 <sup>-14</sup>                             | —                                         | —                                       | —                                          | <b>4060</b> |
| <b>4671</b> | Triode for ultra short wave sets                           | 35 × 26                               | without base (XIII)                               | indir.        | 6,3              | 0,15             | 200                                            | 4,5                                | —6                                      | —                                            | —                                            | —                                         | 2,0                                   | 25                     | 12500                                      | —                                              | 1,4                                       | 0,6                                     | 1,0                                        | <b>4671</b> |
| <b>4672</b> | Pentode for ultra short wave sets                          | 48 × 26                               | without base (XIV)                                | indir.        | 6,3              | 0,15             | 250                                            | 2,0                                | —3                                      | 100                                          | 0                                            | 0,7                                       | 1,4                                   | 5000                   | 3,5.10 <sup>6</sup>                        | —                                              | <0,007                                    | 3,0                                     | 2,7                                        | <b>4672</b> |
| <b>4695</b> | Variable-Mu Pentode for ultra short wave sets              | 48 × 26                               | without base (XIV)                                | indir.        | 6,3              | 0,15             | 250                                            | 5,5                                | —3<br>—45                               | 100                                          | 0                                            | 1,8                                       | 1,8                                   | 1440                   | 0,8.10 <sup>6</sup><br>> 10 <sup>6</sup>   | —                                              | <0,007                                    | 3,5                                     | 2,7                                        | <b>4695</b> |
| <b>4673</b> | Pentode for television receivers                           | 118 × 47                              | P 30 (VIII)                                       | indir.        | 4,0              | 0,15             | 250                                            | 8,0                                | —2,5                                    | 200                                          | 0                                            | 1,5                                       | 5,0                                   | —                      | > 1,5.10 <sup>6</sup>                      | —                                              | <0,012                                    | 7,5                                     | 9,6                                        | <b>4673</b> |