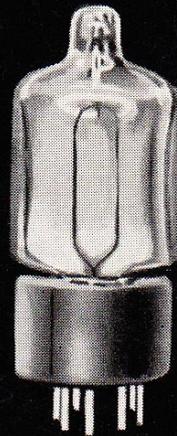
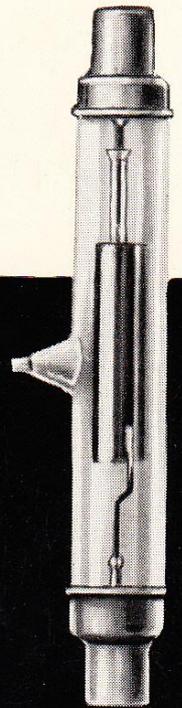


PRESSLER





This catalogue is meant to give an outline of our manufacturing programme. Therefore, it contains only the most characteristic tubes of each branch of the field with their essential data.

Upon request and in addition to this catalogue, special lists of the branches of the fields are available, with a comprehensive type index and, for individual types, data sheets with all the particulars required.

If you can't find the particular article meeting your requirements, despite the great variety of our products, we are always readily prepared to comply with special requests within the scope of our manufacturing programme.

PHOTOCELLS for engineering and research

The photocells listed below are suitable for testing and measuring purposes as well as for control systems. Save a few exceptions, they can be furnished with the different photo cathodes and are available both as vacuum or as gas-filled photocells. The material of the vessel is adapted to the spectral sensitiveness of the particular photo cathode.

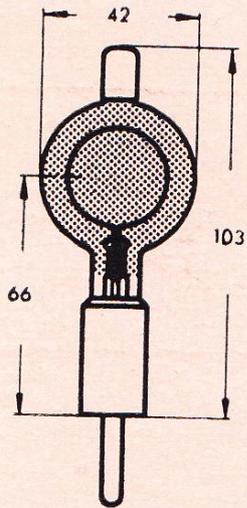
Special lists 102 and 103

| Type designation | | | | | Sensitiveness ¹⁾ S _{28500K} [μA/lm] | | Remarks |
|------------------|--------|-----------------------|--------------------------|---------------|---------------------------------------------------------------|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Pattern | Cap | Vessel | Cathode | Filling | Vacuum | Gas | |
| 320 | TUMU | G G G U U | K I A Na Cd | ²⁾ | 1 20 50 ³⁾ ³⁾ | 20 150 200 6 ³⁾ | Universal measuring cell, especially for electrometrical use |
| 329 | TUMC | B B B B | 2 OK K Na Cd | ²⁾ | 15 ³⁾ ³⁾ | 6 ³⁾ | Quartz measuring cell for UV up to approx 200 nm |
| 414 | TUMU | F F F F F | Ph A K Na Cd | ²⁾ | 20 50 1 ³⁾ ³⁾ | 90 200 20 6 ³⁾ | Measuring cell with special UV window |
| 163 | FL | G G | Ph K | V V | | | Single-stage photo-multiplier cell |
| 009 | KOLA | G | K | V | 0,2 | | Barrel-shaped vacuum cell with spatially almost uniform distribution of sensitiveness; saturation at about 4 volts, especially for the measurement of daylight intensity |
| 043 | SD | G G G G G | I II T A K | ²⁾ | 20 20 20 50 1 | 140 100 65 300 20 | Universally applicable cell for control and measuring technique, with Europe cap DIN 41 501 |
| 350 | RS | G G G G G | I II T A K | ²⁾ | 20 20 20 50 1 | 140 100 65 200 20 | Universally applicable cell for minimum space requirements, with miniature cap. acc. to DIN 41 537 |
| 079 | RG | G G G G G | I II T A K | ²⁾ | 20 20 20 50 1 | 140 100 65 200 20 | Universally applicable cell with Noval cap acc. to DIN 41 539 |
| 240 | FEV 12 | G G G | I II K | ²⁾ | | 120 80 15 | Frontal cell, for installation into tubular optical systems, Europe cap DIN 41 501 |
| 022 | | G G | Ph K | ²⁾ | 20 | 90 20 | Annular cell for reflection sensing |

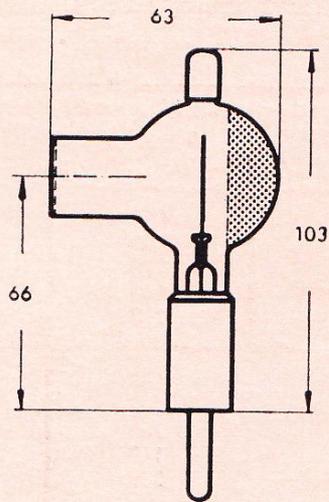
¹⁾ according to DIN 44 028 sh. 1 upon inquiry

²⁾ see page 5

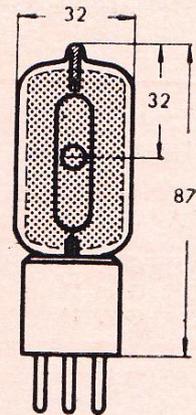
³⁾ measured with UV-standard; data furnished



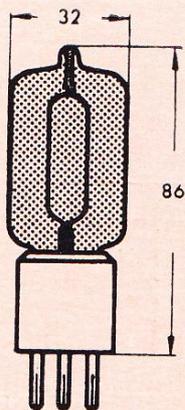
320 TUMU



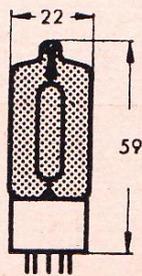
414 TUMU



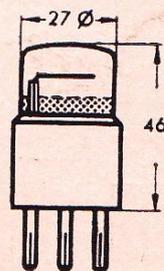
163 FL



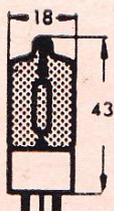
043 SD



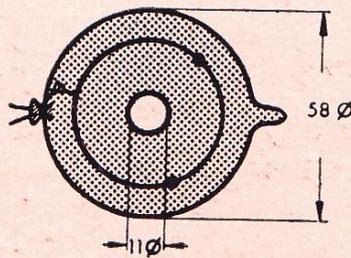
079 RG



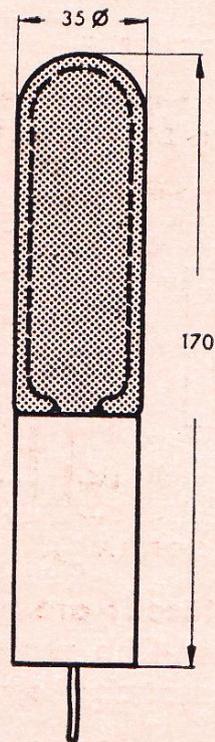
240 FEV 12



350 RS



022



009 KOLA

Special lists 102 and 103

PHOTOCELLS for photographic sound recording

For sound film reproduction, cells with the red- and infrared-sensitive cesium oxide cathode (Ph)¹⁾ in two ranges of sensitiveness (I and II) are used above all. For colour films with sound track free of silver, the cells with blue-sensitive cesium antimony photo cathode (A)²⁾ are used.

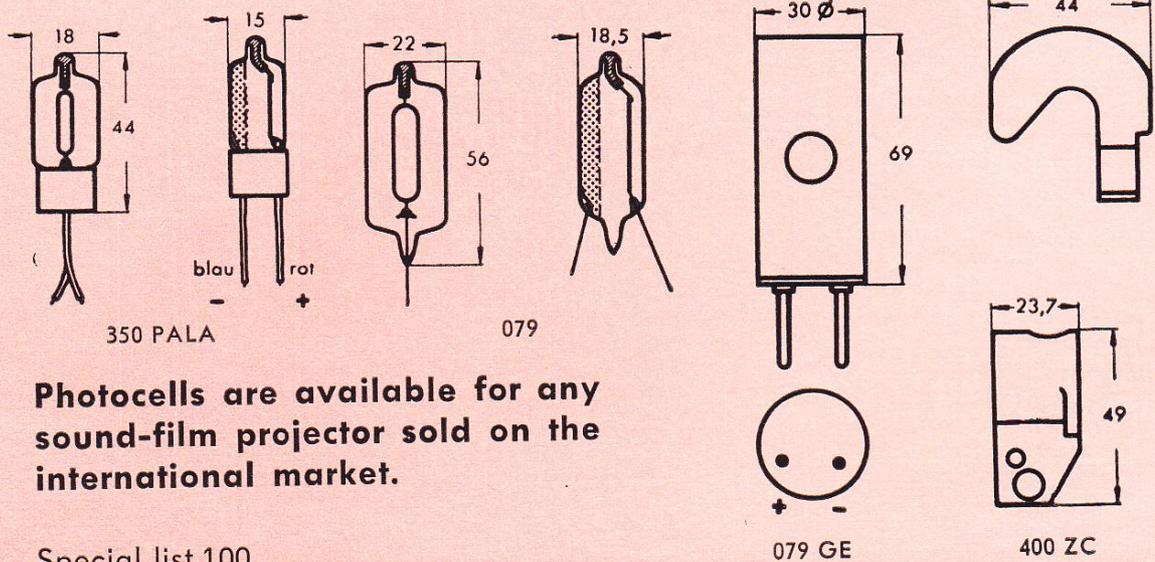
In adaptation to the different photocell operating voltages of the sound film amplifiers, our cells are supplied for two operating voltages (E or H).

| Type designation | Max. operating voltage U_b (max) [V] | Sensitiveness ³⁾ $S_{2850^\circ K}$ [$\mu A/lm$] | Remarks |
|-------------------------------------------------------|----------------------------------------|---------------------------------------------------------------|----------------------------------------------|
| 350 PALA / G I E G II E G A E G I H G A H | 100 100 100 150 150 | 140 100 200 140 200 | Universal cells for installation |
| 079 / G I E G II E G A E G I H G A H | 100 100 100 150 150 | 140 100 200 140 200 | Universal cells for installation |
| 079 GE / G I H G A H | 150 150 | 140 200 | Suitable for sound film EUROPA |
| 400 ZC / G Ph E G Ph H | 100 150 | 120 120 | Suitable for Ernemann VII b, IX und D 1, D 2 |

¹⁾ according to DIN 44021 sh. 1

²⁾ according to DIN 44021 sh. 2

³⁾ according to DIN 44028 sh. 1



Photocells are available for any sound-film projector sold on the international market.

Special list 100

Explanation of the type designations of photocells

VESSEL

| | |
|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| G | Glass Plain industrial glass with a lowest transmission limit of approx. 350 nm, applicable for incandescent-lamp and daylight |
| U | Uviol glass Special glass with a lowest transmission limit of approx. 260 nm, applicable for incandescent-lamps and ultraviolet light |
| B | Quartz glass Transmission limit below 200 nm, applicable especially for ultraviolet light |
| F | Window Special glass, only in the form of windows (thickness below 0,7 mm), transmission limit around 210 nm, applicable for all light sources including ultraviolet lamps |

PHOTO CATHODES

| | |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------|
| 20K | Cesium oxide (according to DIN 44 021 sh. 1) |
| Ph | Cesium oxide (according to DIN 44 021 sh. 1) with suppressed sensitiveness to blue light without sensitiveness classification |
| I | sensitiveness range I |
| II | sensitiveness range II |
| T | sensitiveness range T |
| A | Cesium antimony (DIN 44 021 sh. 2) |
| K | Potassium (activated) |
| Na | Sodium (activated) |
| Cd | Cadmium |

FILLINGS

| | | |
|-----------------|--------|------------------------------------------------|
| V | Vacuum | max. operating voltage U_b (max) = 200 volts |
| E | Gas | max. operating voltage U_b (max) = 100 volts |
| H | Gas | max. operating voltage U_b (max) = 150 volts |
| F ¹⁾ | Gas | max. operating voltage U_b (max) = 240 volts |
| L ¹⁾ | Gas | max. operating voltage U_b (max) = 150 volts |

The L-Cells are so-called frequency cells whose inertness is substantially reduced by the proper choice of the gas content and of the amplification factor.

¹⁾ for cesium-oxide cells only

Terms and measuring conditions comply with DIN 44 020 sh. 1, DIN 44 028 sh. 1

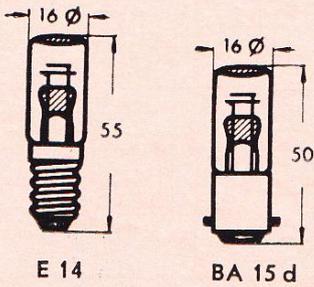
GLOWLAMPS for signalling purposes

Upon request, glowlamps GRM10, FRM11, FRB12 and MR14 are available also without incorporated resistance; in this case, however, a resistance must be connected in series, whose data are given in the table below. For the glowlamps FRM11, FRB12, MR14, and TEL15-03 suitable built-in installation holders with spherical caps in various colours for single-hole mounting are available.

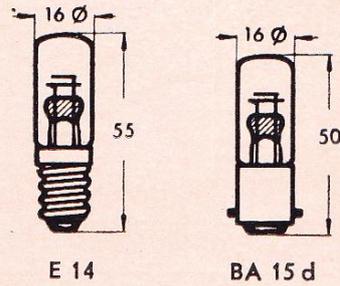
| Type | Running voltage V | Max. starting voltage V | Mean power input mA | Resistance | Cap |
|-----------|----------------------|----------------------------|------------------------|------------|---------|
| GRM 10-02 | 110 | 100 | 6 | built-in | E 27 |
| GRM 10-12 | 220 | 180 | 6 | built-in | E 27 |
| FRM 11-02 | 110 | 100 | 1,5 | built-in | E 14 |
| FRM 11-04 | 110 | 100 | 1,5 | built-in | BA 15 d |
| FRM 11-12 | 220 | 180 | 1,5 | built-in | E 14 |
| FRM 11-14 | 220 | 180 | 1,5 | built-in | BA 15 d |
| FRB 12-02 | 110 | 100 | 1,5 | built-in | E 14 |
| FRB 12-04 | 110 | 100 | 1,5 | built-in | BA 15 d |
| FRB 12-12 | 220 | 180 | 1,5 | built-in | E 14 |
| FRB 12-14 | 220 | 180 | 1,5 | built-in | BA 15 d |
| MR 14-02 | 110 | 100 | 0,7 | built-in | E 14 |
| MR 14-12 | 220 | 180 | 0,7 | built-in | E 14 |
| TEL 15-01 | 110 | 100 | 0,25 | without | without |
| TEL 15-03 | 110 | 100 | 0,25 | without | T 8 |
| ER 16-01 | 110 | 100 | 0,25 | without | without |
| ERU 17-01 | 110 | 100 | 0,25 | without | without |
| UR 43-02 | 110 | 95 | 0,5 | without | S 10 |

Special lists 110 and 111

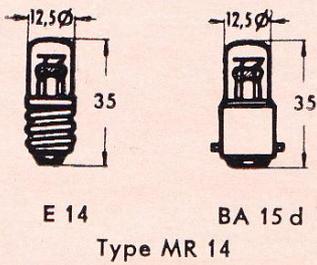
| Type | Necessary series resistances in $k\Omega$ | | | | | | |
|----------------------|-------------------------------------------|-------|-------|-------|-------|-------|--------|
| | 110 V | 150 V | 220 V | 250 V | 380 V | 500 V | 1000 V |
| GRM 10-0 | 4 | 10 | 20 | 30 | 50 | 70 | 150 |
| GRM 10-1 | — | — | 15 | 20 | 40 | 60 | 150 |
| FRB 12-0 / FRM 11-0 | 25 | 50 | 100 | 120 | 200 | 300 | 600 |
| FRB 12-1 / FRM 11-1 | — | — | 50 | 70 | 150 | 250 | 600 |
| MR 14-0 | 50 | 100 | 200 | 250 | 450 | 600 | 1300 |
| MR 14-1 | — | — | 100 | 150 | 350 | 500 | 1200 |
| TEL 15-0 | 100 | 250 | 500 | 700 | 1000 | 1500 | 2000 |
| ER 16-01 / ERU 17-01 | 150 | 350 | 700 | 1000 | 1500 | 2000 | 5000 |
| UR 43-02 | 100 | 250 | 500 | 750 | 1000 | 1500 | 3000 |



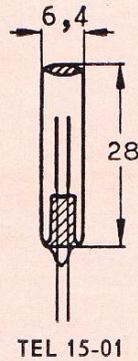
E 14 BA 15 d
Type FRM 11
with smelt lens



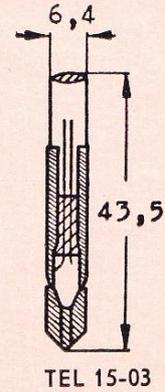
E 14 BA 15 d
Type FRB 12
without smelt lens



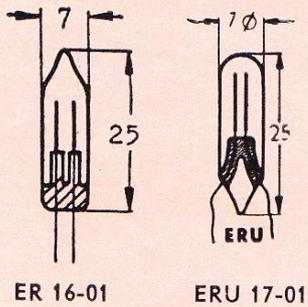
E 14 BA 15 d
Type MR 14



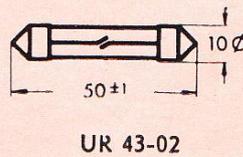
TEL 15-01



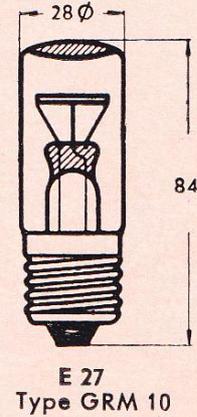
TEL 15-03



ER 16-01 ERU 17-01



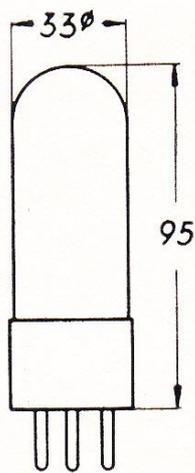
UR 43-02



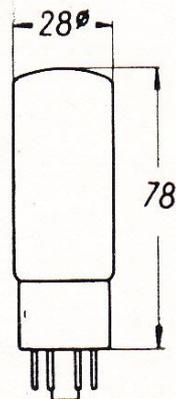
E 27
Type GRM 10

SMOOTHING TUBES for replacement

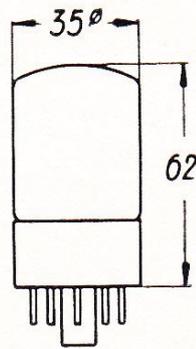
| Type | Running ¹⁾ voltage U_B | | Range of adjustment ΔI | | Mean internal resistance R_i Ω | Starting voltage U_z V | Cap |
|----------|-------------------------------------|------------|--------------------------------|-----------------|--------------------------------------------|-----------------------------|-----------|
| | Mean value V | Range V | I_{min} mA | I_{max} mA | | | |
| GR 20-12 | 150 | 130...170 | 10 | 60 | 200 | 200 | Europe |
| GR 22-10 | 150 | 130...170 | 10 | 60 | 300 | 200 | Octal |
| GR 22-70 | 150 | 130...170 | 3 | 15 | 400 | 200 | Octal |
| GR 24-22 | 145 | 135...160 | 10 | 60 | 100 | 200 | E |
| GR 26-16 | 150 | 140...180 | 3 | 15 | 600 | 200 | Miniature |
| GR 27-16 | 150 | 140...180 | 0,3 | 6 | 6000 | 200 | Miniature |
| GR 20-42 | 100 | 85...115 | 10 | 60 | 150 | 130 | Europe |
| GR 22-40 | 100 | 85...115 | 10 | 60 | 150 | 130 | Octal |
| GR 25-46 | 90 | 75...100 | 3 | 15 | 200 | 130 | 5p AKS |
| GR 27-56 | 80 | 70...90 | 0,3 | 6 | 2000 | 110 | Miniature |



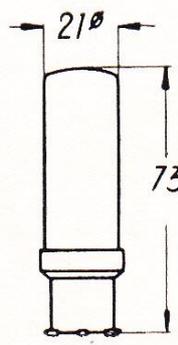
Pattern 20



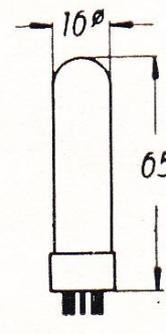
Pattern 22



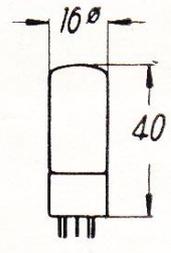
Pattern 24



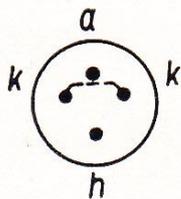
Pattern 25



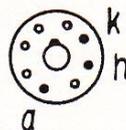
Pattern 26



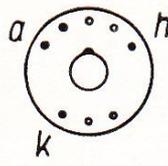
Pattern 27



Europe



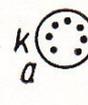
Octal



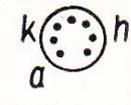
E-cap



5p ASK



Miniature

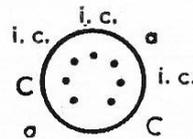
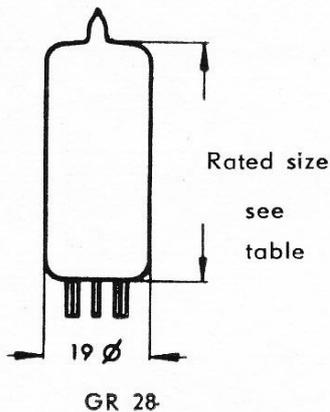


Miniature

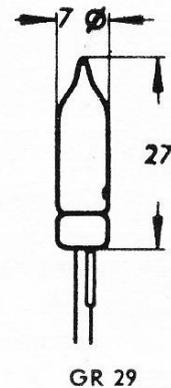
¹⁾ The indicated running voltage U_B refers to the mean shunt current $I_0 = 0.5 (I_{max} + I_{min})$

SMOOTHING TUBES with pure-metal cathode

| Type | Range of running voltage ¹⁾ U_b V | Range of regulation | | Internal resistance R_i (max) Ω | Cap DIN | Rated size |
|----------|------------------------------------------------------|---------------------|-----------------|------------------------------------------------|--------------|------------|
| | | I_{min} | I_{max} mA | | | |
| GR 28-10 | 145...160 | 5 | 60 | 150 | 41537 | 50 |
| GR 28-30 | approx 108 | 5 | 60 | 100 | 41537 | 44 |
| GR 28-40 | 100...105 | 5 | 60 | 100 | 41537 | 44 |
| GR 28-60 | 82...87 | 5 | 60 | 100 | 41537 | 44 |
| GR 29-60 | 80...85 | 0,5 | 5 | 1000 | solder leads | |



i. c. = internal connection.
Must not be used as supporting
points on the cap.



CORONA REGULATOR

for the stabilisation of high direct voltages with minimum current consumption.

| Type | Range of running voltage ¹⁾ U_b V | Range of regulation | | Internal resistance R_i (max) M Ω | Cap DIN |
|------|------------------------------------------------------|---------------------|----------------------|--------------------------------------------------|------------|
| | | I_{min} | I_{max} μA | | |
| V 19 | 500 ± 25 | 5 | 50 | 0,5 | 41535 |

This Corona Regulator is available also with a running voltage in the range of 300...600 volts with a manufacturing tolerance of ± 25 volts each.

¹⁾ The value of the running voltage U_b refers to the mean shunt current, which is defined as $I_0 = 0.5 (I_{max} + I_{min})$

Special list 120



COLD CATHODE THYRATRONS

Discharge relays with cold cathode not consuming any potential energy when in state at rest.

As a voltage trigger-action relay it requires for the releasing action small amperages only and on the secondary side it supplies amperages ranging from a few milliamperes up to several amperes, depending upon the type used.

In combination with photocells, the cold cathode thyatron is used for photometry, counting, safety devices and burglar alarms, turbidity indications, etc.

In combination with sensitive contacts, the cold cathode thyatron is employed as sweep-circuit switch, for electrical systems as impulse transmitter, storage unit, and signalling device, for flash units as starting tube, etc.

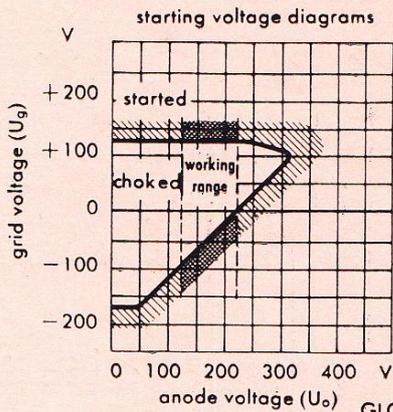
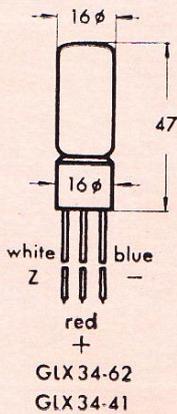
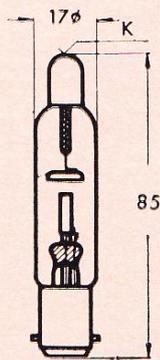
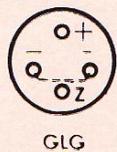
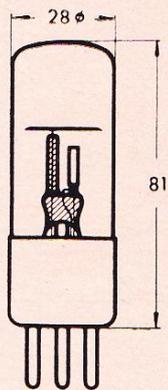
| Type | GLK 34-07 ¹⁾ GLG 34-17 ¹⁾ | GLK 34-04 GLG 34-12 | GLK 34-03 GLG 34-11 | GLX 34-62 | GLX 34-41 | 00-A 29 ¹⁾ | 00-A 43 ²⁾ |
|---------------------------------------------------------------------------------------------------------|----------------------------------------------------|------------------------|------------------------|----------------|-----------|-----------------------|-----------------------|
| Max. anode voltage $U_{ak(limit)}$ V | 250 | 300 | 350 | 600 | 800 | 250 | 250 |
| Optimum working range $U_{ak(min)}$ and $U_{ak(max)}$ V | 125...225 | 175...275 | 225...325 | 450...600 | 600...800 | 150...200 | 150...200 |
| Starting voltage $U_{z(gk)}$ Starting grid / cathode approx V Starting/anode $U_{z(ag)}$ approx V | 125 225 | 175 225 | 225 225 | 225 — | 225 — | 120 — | 125 — |
| Running voltage $U_{b(ak)}$ anode / cathode approx V | 80 | 180 | 180 | 50 | 50 | 110 | 110 |
| Max. anode current for single impulse $i_{max(imp)}$ | 50 mA | 100 mA | 150 mA | 50 A | 50 A | 100 mA | 15 mA |
| for permanent load $i_{max(DB)}$ mamps | 5 10 | 20 30 | 20 30 | — | — | 25 | 5 |
| Starting current | | | | | | 2 | 2 |
| Starting condenser Starting grid / cathode pF | 1000 | 1000 | 1000 | 2000 | 2000 | | |
| Cap | BA 15 d Europe DIN 41501 | BA 15 d Europe | BA 15 d Europe | flexible leads | | DIN 41531 | without |

¹⁾ Only for replacement

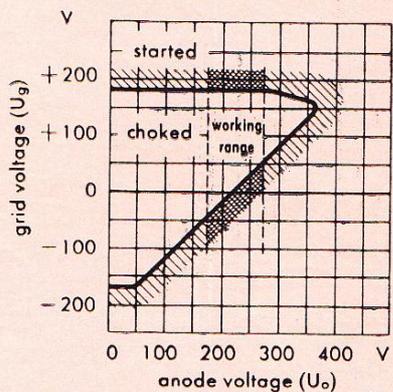
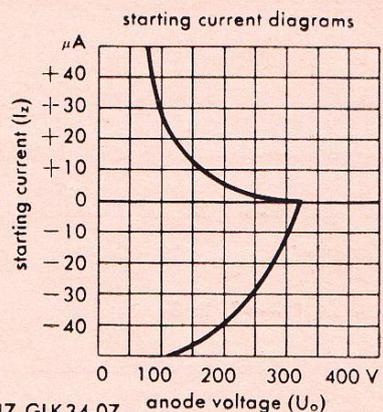
²⁾ With high-purity metal cathode

Special list 141

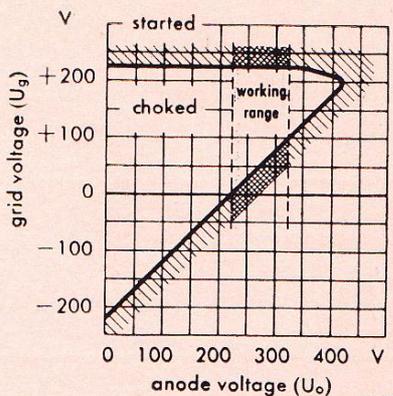
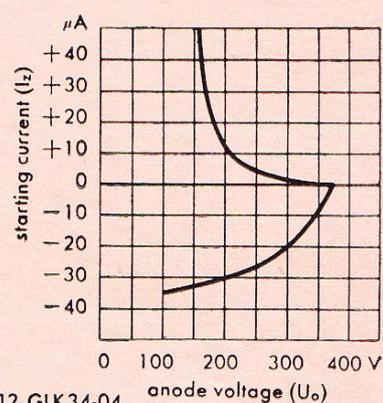
A. Cold cathode thyratron with glow discharge



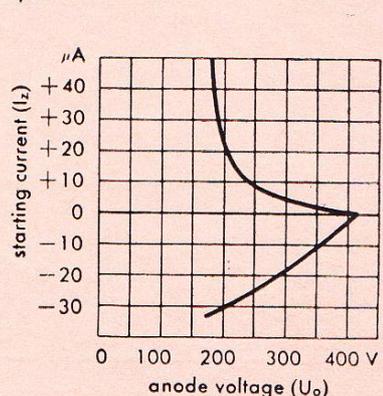
GLG 34-17, GLK 34-07



GLG 34-12, GLK 34-04

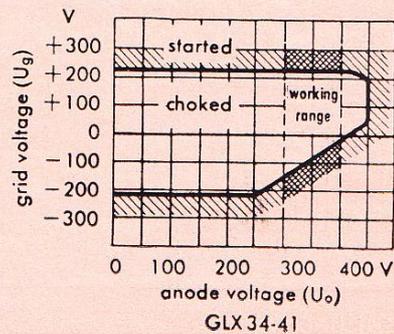
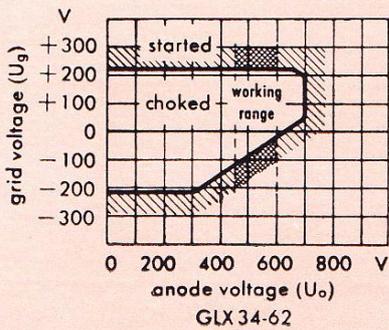


GLG 34-11, GLK 34-03



B. Cold cathode thyratron with arc discharge

starting voltage diagrams



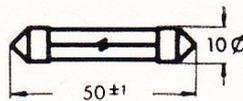
TRIGGER-ACTION GLOW DISCHARGE TUBES

for the generation of audio-frequencies, measuring A. C., for capacity measurements, stroboscopic examinations, and for the generation of defined time intervals of up to several minutes, etc.

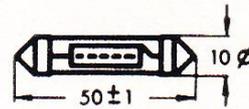
The cold cathode thyratrons described on page 10, of course, may be used as trigger-action glow discharge tubes, too.



KR 33-31
KR 33-41



UR 43-02



00-B 28

| Type | Starting voltage V | Sweep amplitude V | Frequency range c. p. s. up to | Series resistance MΩ | Condenser pF |
|-----------------------------------------|-----------------------|----------------------|--------------------------------------|-------------------------|---------------------------|
| UR 43-02 | 100 | 10 | 1000 | 10 | 1000 |
| KR 33-31 | 200 | 100 | 500 | 0,5 and more | 1000 up to several μF |
| KR 33-41 | 400 | 300 | 100 | | 10000 up to several μF |
| 00-B 28 high-purity metal cathode | 100 | 10 | 1200 | | |

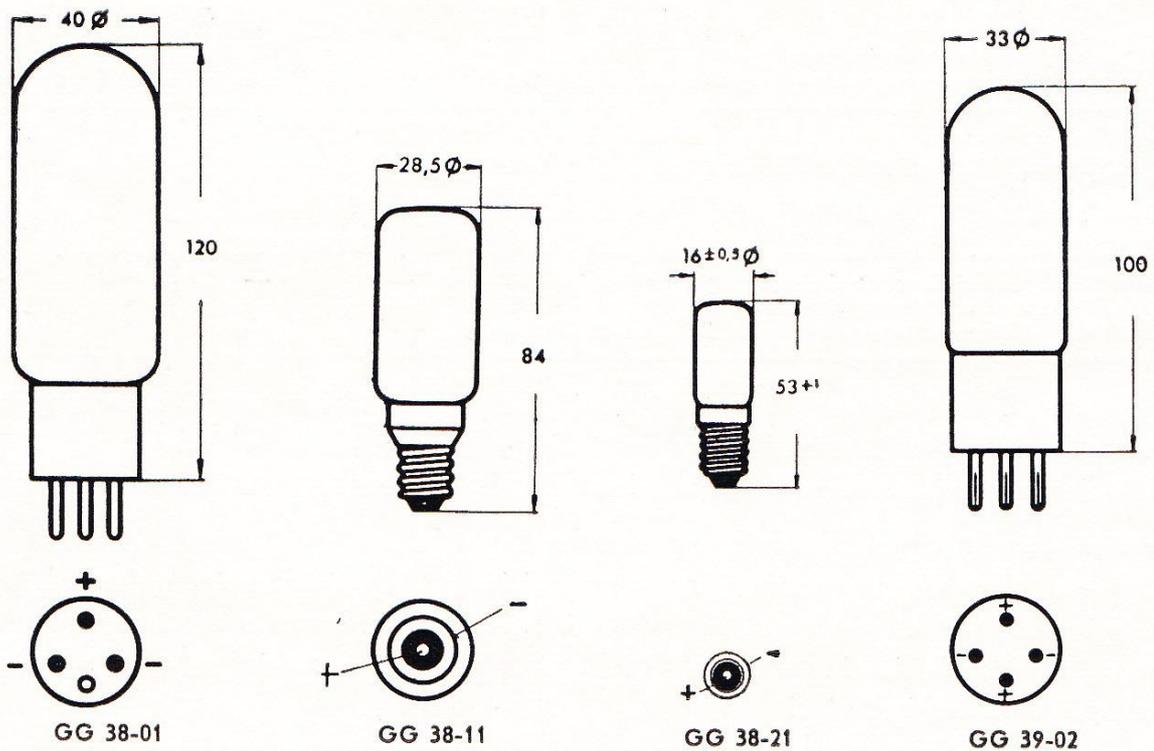
Special list 140



COLD CATHODE RECTIFIERS

for use as a charging rectifier for pocket accumulators, for current intensity measurement in X-ray units, etc.

The cold-cathode detectors DT are used for rectifying low-voltage and high-frequency currents.



| Type | Operating voltage V | Consumable D. C. mA | Cap |
|----------|------------------------|---------------------------|-----------|
| GG 38-01 | 300 | 10 | DIN 41501 |
| GG 38-11 | 220 | 25 | E 14 |
| GG 38-21 | 220 | 5 | E 14 |
| DT 39-02 | 250 | 10 | DIN 41501 |

Special list 180

MODULABLE GLOW DISCHARGE TUBES

for intensity control of the cathode glow light.

Max. working frequency approx. 10 kc.

| Type | Kind | Cap | Starting voltage max. V | Mean load mA | Size of window | Filling | Mean luminous density approx. stilb. |
|----------|-----------------------------------|------------------|-------------------------|--------------|----------------|---------|--------------------------------------|
| PL 32-01 | Spot-lighting lamp | Europe | 200 | 50 | 1,4 mm Ø | blue | 50 |
| PL 32-11 | Spot-lighting lamp | Europe | 180 | 50 | 1,4 mm Ø | red | 50 |
| PL 32-17 | Spot-lighting lamp | Plug-type cinema | 180 | 50 | 1,4 mm Ø | red | 50 |
| PK 32-51 | Spot-lighting lamp | E 14 | 220 | 5 | 3 mm Ø | red | 1 |
| PK 32-52 | Miniature spot-lighting lamp | E 14 | 240 | 5 | 3 mm Ø | blue | 1 |
| KL 32-60 | Miniature slit lamp | BA 15 d | 180 | 5 | 15×2 mm Ø | red | — |
| TL 32-40 | Miniature uniplanar filament lamp | Europe | 180 | 50 | 10 mm Ø | red | — |

For intensity control of the anodic glow light (positive column).

Max. working frequency approx. 100 kc.

| | | | | | | | |
|----------|------------------------|----------------|-----|---|---|-----|---|
| KI 75-02 | Time scale transmitter | Caps | 500 | — | — | red | — |
| UI 75-12 | Time scale transmitter | Caps | 600 | — | — | red | — |
| UI 75-13 | Time scale transmitter | Flexible leads | 600 | — | — | red | — |

Mind that all the glowlamps are not equipped with incorporated resistance, so that in service always a series resistance (at least 500 ohms) must be provided for.

In impulse operation the stated mean load can be increased to 300 to 500 per cent.

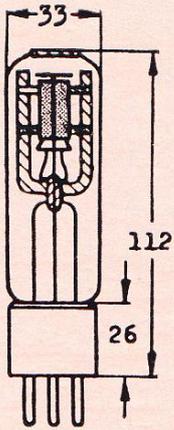
For amplitude control of the cathode covering.

Above all, these tubes are used for the supervision of the power output of amplifiers, for the optical control of electrical processes, i. e. in place of measuring instruments. They are not equipped with incorporated resistance, so that in service always a resistance must be connected in series.

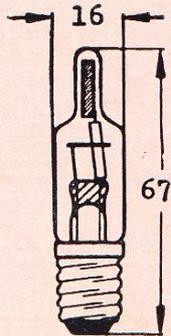
| Type | Starting voltage approx. V | Maximum current consumption mA | Disposable length of glow column in mm. | Cap |
|-----------|----------------------------|--------------------------------|-----------------------------------------|-----------------|
| AR 46-12 | 180 | 10 | 60 | Caps |
| ARG 47-12 | 180 | 10 | 100 | Clamping screws |
| RR 30-05 | 180 | 2 | 65 | BA 15d |

Upon request, special tubes for stroboscopic application can be offered.

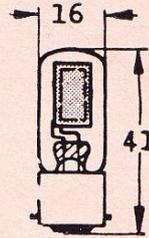
Special lists 152 and 153



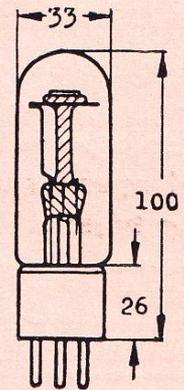
PL 32



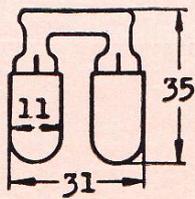
PK 32-5



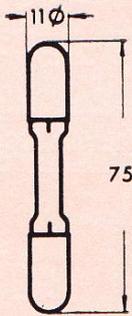
KL 32-6



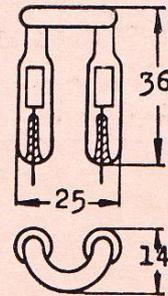
TL 32-4



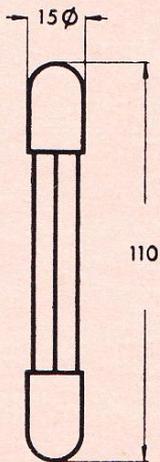
UI 75-12



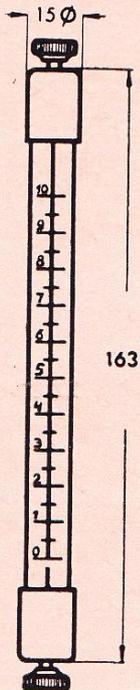
KI 75-02



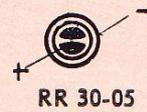
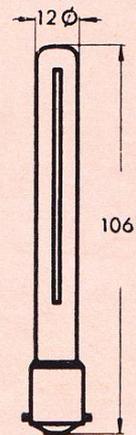
UI 75-13



AR 46-12



ARG 47-12



RR 30-05

ELECTRONIC FLASH TUBES

This list contains the most important flash tubes for commercial-type flash units. When ordering, please annex the cipher of the cap required to the type number (e. g.: type 80-2 with cap according to fig. 5 = ordering No. 80-25).

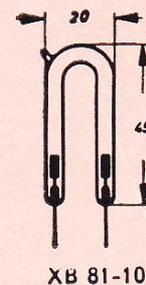
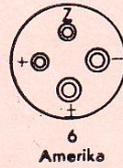
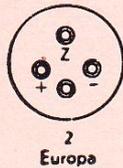
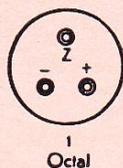
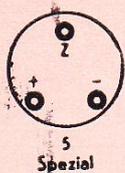
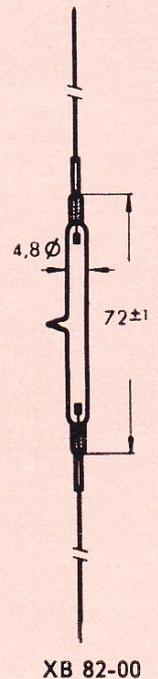
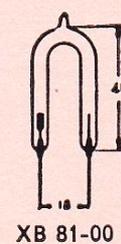
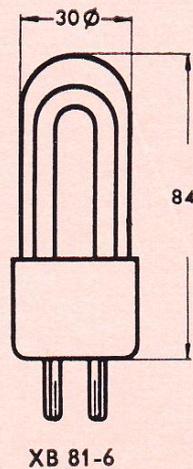
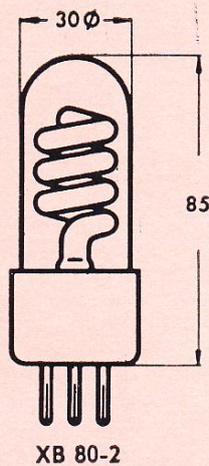
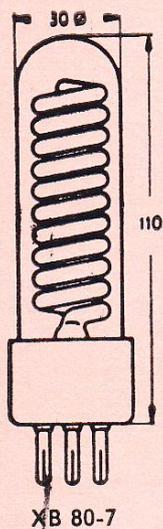
Special types for installation into medical or optical apparatus: List 131.

Starting tubes and starting cells for the operation of simultaneous flash units: List 132.

| Type | XB 80-2 ¹⁾ | XB 80-7 ¹⁾ | XB 81-6 ¹⁾ | XB 80-151 ¹⁾²⁾ | XB 81-00 | XB 81-10 | XB 82-00 |
|----------------------------------|-----------------------|-----------------------|-----------------------|---------------------------|-----------|----------|---------------|
| Cap. Figure | 1, 2, 5, 6 | 1, 2, 5, 6 | 1, 2, 5, 6 | special | without | without | S 8 DIN 49705 |
| A_{max} [Ws] | 200 | 400 | 200 | 1000 | 150 | 50 | 40 |
| U_a [V] | 500...1000 | 2500...4000 | 250...500 | 3000...5000 | 250...500 | 220 | 400...600 |
| Flashes/min. | 4 | 3 | 4 | 2 | 4 | 4 | 10 |
| Duration of flash approx. [msec] | 2 | 1 | 2 | 1 | 2 | 2 | 2 |
| Colour temperature approx. [°K] | 5800 | 5800 | 5800 | 5800 | 5800 | 5800 | 5800 |

¹⁾ with built-in starting electrode

²⁾ Sizes see: List 130



Special lists 130, 131 and 132