

Heizung

$U_f = 6,3 \text{ V}$
 $I_f = 0,76 \text{ A}$ Wechsel-oder Gleichstrom
 Heizart: indirekt, Parallelspeisung

Kapazitäten

$C_{g1} = 10,8 \text{ pF}$
 $C_a = 6,5 \text{ pF}$
 $C_{ag1} < 0,5 \text{ pF}$
 $C_{g1f} < 0,25 \text{ pF}$

| | | | | |
|----------------------------------|---|------|-----|--------------------------|
| U_{ak} | = | max. | 550 | V |
| U_a | = | max. | 300 | V ¹⁾ |
| Q_a | = | max. | 12 | W ²⁾ |
| U_{g2k} | = | max. | 550 | V |
| U_{g2} | = | max. | 300 | V ¹⁾ |
| $Q_{g2} (U_{g1\sim} = 0)$ | = | max. | 2 | W |
| $Q_{g2\ sp} (U_{g1\sim} > 0)$ | = | max. | 4 | W |
| $-U_{g1}$ | = | max. | 100 | V |
| $-U_{g1} (I_{g1} = +0,3\ \mu A)$ | = | max. | 1,3 | V |
| I_k | = | max. | 65 | mA |
| U_{fk} | = | max. | 100 | V |
| R_{g1} | = | max. | 1 | M Ω ³⁾ |
| R_{g1} | = | max. | 0,3 | M Ω ⁴⁾ |
| R_{fk} | = | max. | 20 | k Ω |

- 1) Bei Anodenspannungserzeugung aus Wechselrichter: 250 V
- 2) Bei Anodenspannungserzeugung aus Wechselrichter: 9 W
- 3) Bei automat. Erzeugung der Gittervorspannung.
- 4) Bei fester Gittervorspannung.

Betriebsdaten Klasse B, zwei Röhren in Gegentaktschaltung

| | | | | | | |
|--------------|---|-------|--------|-------|------|------------|
| U_a | = | 250 | | 300 | | V |
| U_{g2} | = | 250 | | 300 | | V |
| U_{g1} | = | -11,6 | | -14,7 | | V |
| R_{aa} | = | 8 | | 8 | | k Ω |
| $U_{g1\sim}$ | = | 0 8 | | 0 10 | | V_{eff} |
| I_a | = | 2x10 | 2x37,5 | 2x7,5 | 2x46 | mA |
| I_{g2} | = | 2x1,1 | 2x7,5 | 2x0,8 | 2x11 | mA |
| N_{\sim} | = | 0 | 11 | 0 | 17 | W |
| k | = | - | 3 | - | 4 | % |

vergl. Seite K6

Betriebsdaten Klasse AB, zwei Röhren in Gegentaktschaltung

| | | | | | | |
|--------------|---|-------|--------|------|------|------------|
| U_a | = | 250 | | 300 | | V |
| U_{g2} | = | 250 | | 300 | | V |
| R_k | = | 130 | | 130 | | Ω |
| R_{aa} | = | 8 | | 8 | | k Ω |
| $U_{g1\sim}$ | = | 0 8 | | 0 10 | | V_{eff} |
| I_a | = | 2x31 | 2x37,5 | 2x36 | 2x46 | mA |
| I_{g2} | = | 2x3,5 | 2x7,5 | 2x4 | 2x11 | mA |
| N_{\sim} | = | 0 | 11 | 0 | 17 | W |
| k | = | - | 3 | - | 4 | % |

vergl. Seite K7

Betriebsdaten Klasse A

| | | | | | | | |
|--------------|---|------|------|------|------|-------------------|-----------------|
| U_a | = | | | 250 | | V | |
| U_{g2} | = | | | 250 | | V | |
| U_{g1} | = | | | -7,3 | | V | |
| R_k | = | | | 135 | | Ω | |
| R_a | = | | | 5,2 | | k Ω | |
| $U_{g1\sim}$ | = | 0 | 0,3 | 3,4 | 4,3 | 4,7 ¹⁾ | V_{eff} |
| I_a | = | 48 | — | — | 49,5 | 49,2 | mA |
| I_{g2} | = | 5,5 | — | — | 10,8 | 11,6 | mA |
| N_{\sim} | = | 0 | 0,05 | 4,5 | 5,7 | 6,0 | W ²⁾ |
| $k_{ges.}$ | = | — | — | 6,8 | 10 | — | % ²⁾ |
| k_2 | = | — | — | 3,0 | 2,0 | — | % ²⁾ |
| k_3 | = | — | — | 5,8 | 9,5 | — | % ²⁾ |
| R_i | = | 40 | — | — | — | — | k Ω |
| S | = | 11,3 | — | — | — | — | mA/V |
| μ_{g2g1} | = | 19,5 | — | — | — | — | |

vergl. Seite K4 oben

| | | | | | | | |
|--------------|---|------|------|------|------|-------------------|-----------------|
| U_a | = | | | 250 | | V | |
| U_{g2} | = | | | 250 | | V | |
| U_{g1} | = | | | -7,3 | | V | |
| R_k | = | | | 135 | | Ω | |
| R_a | = | | | 4,5 | | k Ω | |
| $U_{g1\sim}$ | = | 0 | 0,3 | 3,5 | 4,4 | 4,8 ¹⁾ | V_{eff} |
| I_a | = | 48 | — | — | 50,6 | 50,5 | mA |
| I_{g2} | = | 5,5 | — | — | 10 | 11 | mA |
| N_{\sim} | = | 0 | 0,05 | 4,5 | 5,7 | 6,0 | W ²⁾ |
| $k_{ges.}$ | = | — | — | 7,5 | 10 | — | % ²⁾ |
| k_2 | = | — | — | 5,7 | 5,0 | — | % ²⁾ |
| k_3 | = | — | — | 4,5 | 8 | — | % ²⁾ |
| R_i | = | 40 | — | — | — | — | k Ω |
| S | = | 11,3 | — | — | — | — | mA/V |
| μ_{g2g1} | = | 19,5 | — | — | — | — | |

vergl. Seite K4 unten

 1) für $I_{g1} = +0,3 \mu A$

2) mit fester Gittervorspannung

Betriebsdaten Klasse A

| | | | | | | |
|--------------|---|-----|------|------|-------------------|-----------------|
| U_a | = | | | 250 | | V |
| U_{g2} | = | | | 250 | | V |
| U_{g1} | = | | | -8,4 | | V |
| R_k | = | | | 210 | | Ω |
| R_a | = | | | 7 | | $k\Omega$ |
| $U_{g1\sim}$ | = | 0 | 0,3 | 3,5 | 5,5 ¹⁾ | V_{eff} |
| I_a | = | 36 | — | 36,8 | 36 | mA |
| I_{g2} | = | 4,1 | — | 8,5 | 14,6 | mA |
| N_{\sim} | = | 0 | 0,05 | 4,2 | 5,6 | $W^2)$ |
| $k_{ges.}$ | = | — | — | 10 | — | % ²⁾ |
| k_2 | = | — | — | 1,7 | — | % ²⁾ |
| k_3 | = | — | — | 8,7 | — | % ²⁾ |
| R_i | = | 40 | — | — | — | $k\Omega$ |
| S | = | 10 | — | — | — | mA/V |
| μ_{g2g1} | = | 19 | — | — | — | |

vergl. Seite K5 oben

| | | | | | | |
|--------------|---|------|------|------|-------------------|-----------------|
| U_a | = | | | 250 | | V |
| U_{g2} | = | | | 210 | | V |
| U_{g1} | = | | | -6,4 | | V |
| R_k | = | | | 160 | | Ω |
| R_a | = | | | 7 | | $k\Omega$ |
| $U_{g1\sim}$ | = | 0 | 0,3 | 3,4 | 3,8 ¹⁾ | V_{eff} |
| I_a | = | 36 | — | 36,6 | 36,5 | mA |
| I_{g2} | = | 3,9 | — | 7,3 | 8,0 | mA |
| N_{\sim} | = | 0 | 0,05 | 4,3 | 4,7 | $W^2)$ |
| $k_{ges.}$ | = | — | — | 10 | — | % ²⁾ |
| k_2 | = | — | — | 1,8 | — | % ²⁾ |
| k_3 | = | — | — | 9,3 | — | % ²⁾ |
| R_i | = | 40 | — | — | — | $k\Omega$ |
| S | = | 10,4 | — | — | — | mA/V |
| μ_{g2g1} | = | 19 | — | — | — | |

vergl. Seite K5 unten

 1) für $I_{g1} = +0,3 \mu A$

2) mit fester Gittervorspannung

**Betriebsdaten in Triodenschaltung
Schirmgitter mit Anode verbunden**
Klasse A

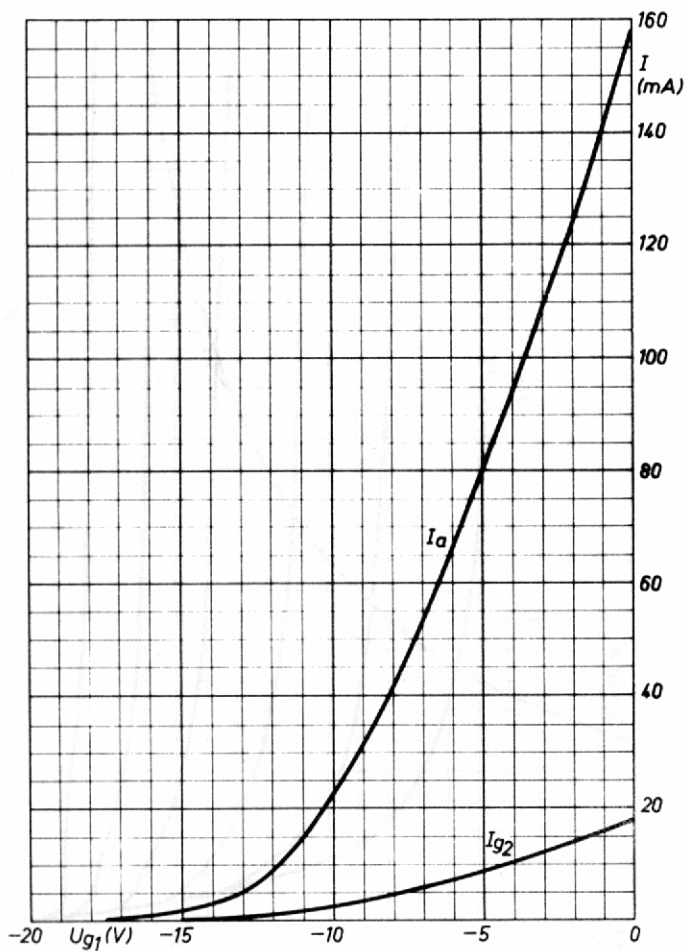
| | | | |
|------------------------------|---|------|-----------|
| U_a | = | 250 | V |
| I_a | = | 34 | mA |
| R_k | = | 270 | Ω |
| $U_{g1\sim}$ | = | 6,7 | V_{eff} |
| R_a | = | 3,5 | $k\Omega$ |
| N_{\sim} | = | 1,95 | W |
| k | = | 9 | % |
| $U_{g1\sim} (N_{\sim}=50mW)$ | = | 1,0 | V_{eff} |

Klasse AB, zwei Röhren in Gegentaktschaltung

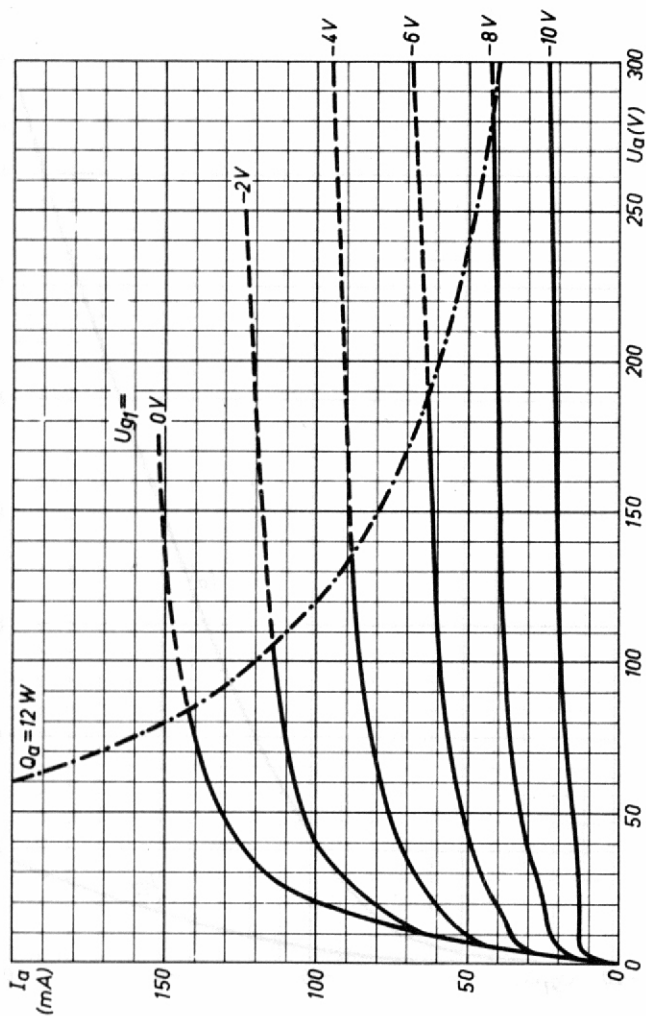
| | | | | | | |
|------------------------------|---|------|--------|-----------|------|-----------|
| U_a | = | 250 | 300 | V | | |
| R_k | = | 270 | 270 | Ω | | |
| R_{aa} | = | 10 | 10 | $k\Omega$ | | |
| $U_{g1\sim}$ | = | 0 | 8,3 | 0 | 10 | V_{eff} |
| I_a | = | 2x20 | 2x21,7 | 2x24 | 2x26 | mA |
| N_{\sim} | = | 0 | 3,4 | 0 | 5,2 | W |
| k | = | - | 2,5 | - | 2,5 | % |
| $U_{g1\sim} (N_{\sim}=50mW)$ | = | 0,95 | | 0,9 | | V_{eff} |

$$U_a = 250 \text{ V}$$

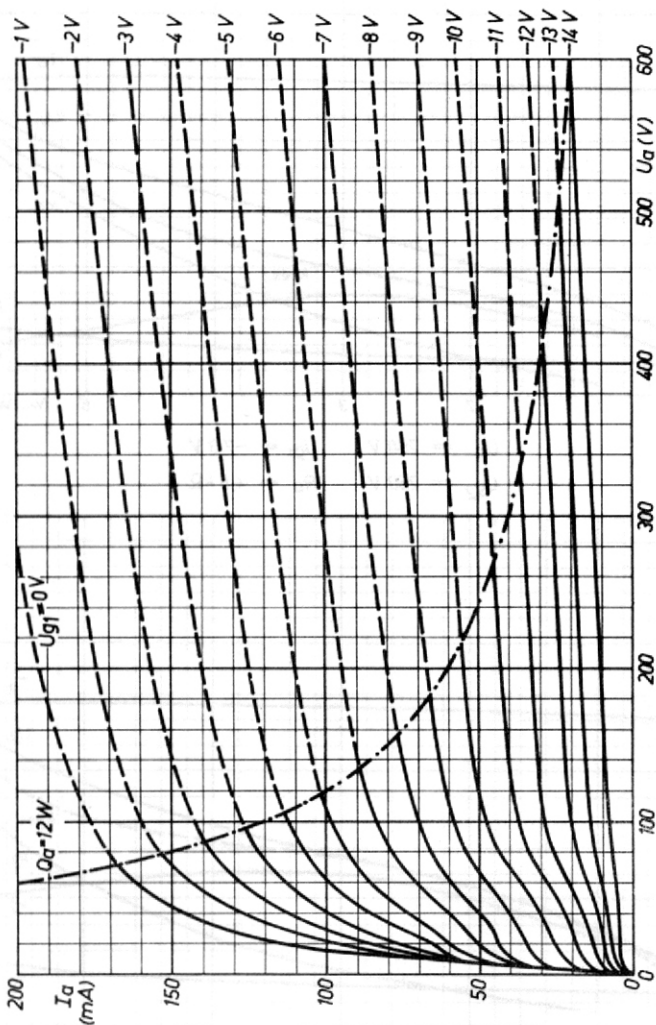
$$U_{g2} = 250 \text{ V}$$



$U_{g2} = 250 \text{ V}$



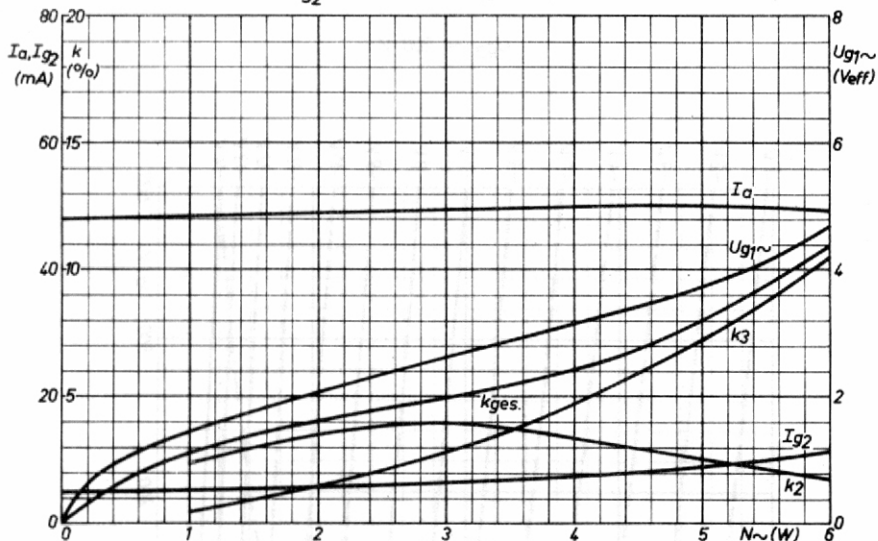
$U_{g2} = 300 \text{ V}$



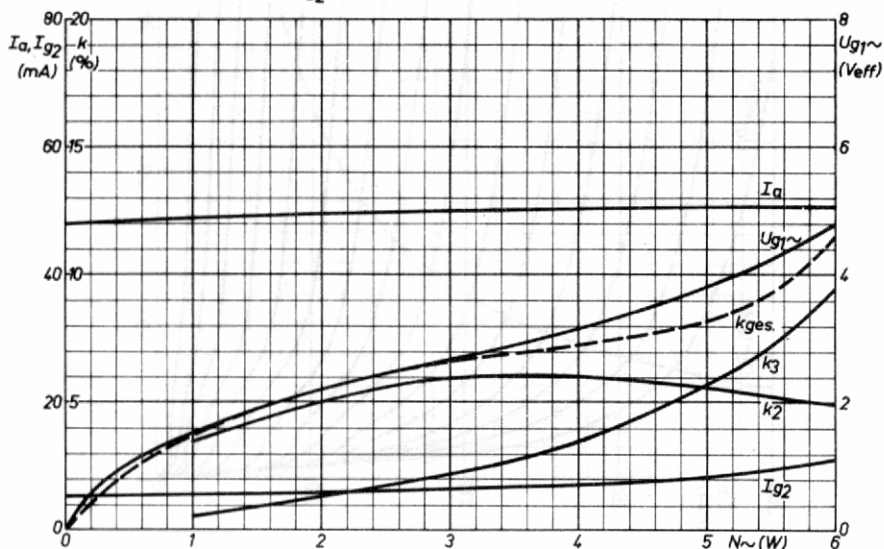
Anodenstrom I_a
 Schirmgitterstrom I_{g2}
 Eingangsspannung $U_{g1\sim}$
 Klirrfaktoren k } = $f(N_{\sim})$

EL 84

$U_a = 250 \text{ V}$ $U_{g1} = -7,3 \text{ V}$
 $U_{g2} = 250 \text{ V}$ $R_a = 5,2 \text{ k}\Omega$



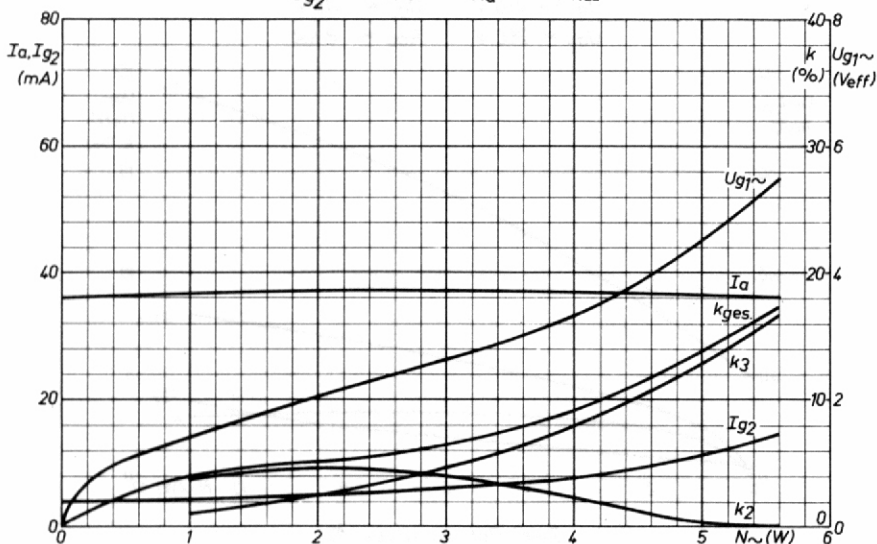
$U_a = 250 \text{ V}$ $U_{g1} = -7,3 \text{ V}$
 $U_{g2} = 250 \text{ V}$ $R_a = 4,5 \text{ k}\Omega$



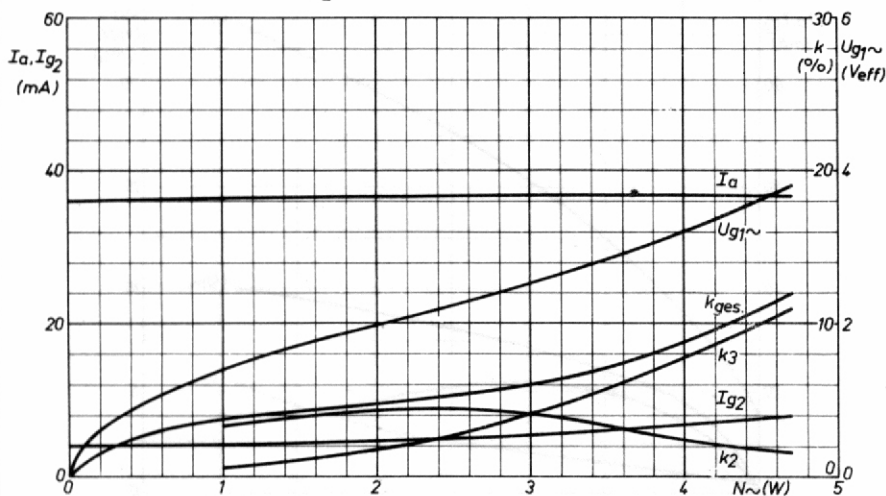
Anodenstrom I_a
 Schirmgitterstrom I_{g2}
 Eingangsspannung $U_{g1\sim}$
 Klirrfaktoren k

} = $f(N_{\sim})$

$U_a = 250 \text{ V}$ $U_{g1} = -8,4 \text{ V}$
 $U_{g2} = 250 \text{ V}$ $R_a = 7 \text{ k}\Omega$



$U_a = 250 \text{ V}$ $U_{g1} = -6,4 \text{ V}$
 $U_{g2} = 210 \text{ V}$ $R_a = 7 \text{ k}\Omega$



Anodenstrom I_a
 Schirmgitterstrom I_{g2}
 Eingangsspannung $U_{g1\sim}$
 Klirrfaktor k

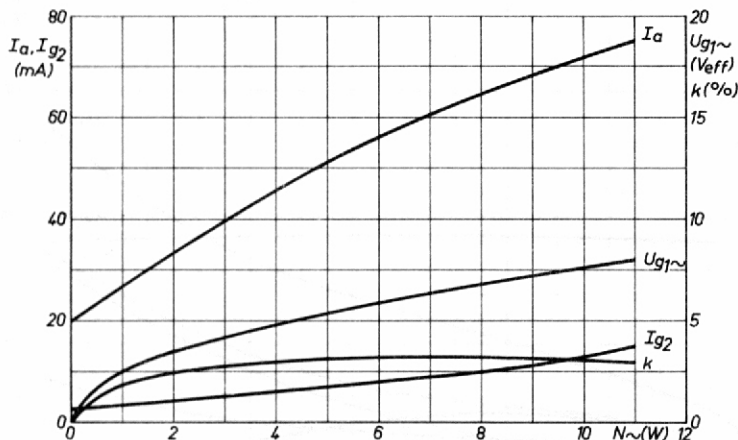
$\left. \begin{array}{l} I_a \\ I_{g2} \\ U_{g1\sim} \\ k \end{array} \right\} = f(N_{\sim})$

EL 84

Zwei Röhren, Klasse B

$U_a = 250 \text{ V}$ $U_{g1} = -11,6 \text{ V}$

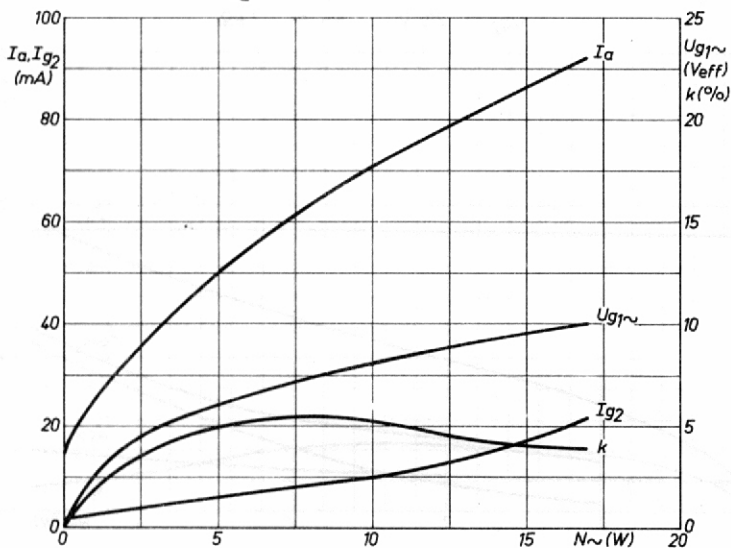
$U_{g2} = 250 \text{ V}$ $R_{aa} = 8 \text{ k}\Omega$



Zwei Röhren, Klasse B

$U_a = 300 \text{ V}$ $U_{g1} = -14,7 \text{ V}$

$U_{g2} = 300 \text{ V}$ $R_{aa} = 8 \text{ k}\Omega$



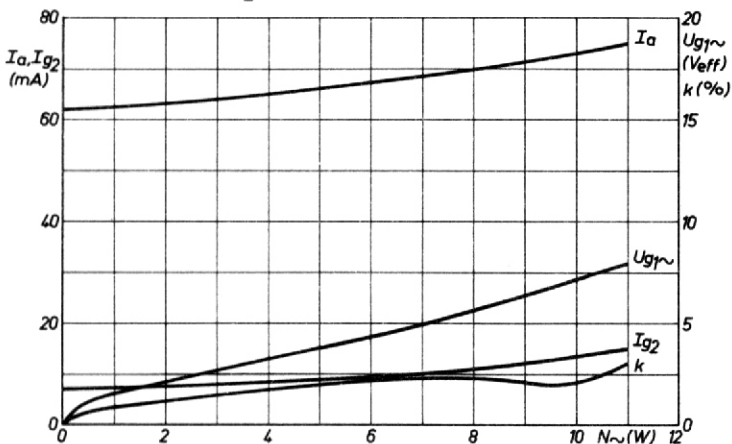
Anodenstrom I_a
 Schirmgitterstrom I_{g2}
 Eingangsspannung $U_{g1\sim}$
 Klirrfaktor k

$\left. \begin{array}{l} I_a \\ I_{g2} \\ U_{g1\sim} \\ k \end{array} \right\} = f(N_{\sim})$

Zwei Röhren, Klasse AB

$U_a = 250 \text{ V}$ $R_k = 130 \ \Omega$

$U_{g2} = 250 \text{ V}$ $R_{aa} = 8 \text{ k}\Omega$



Zwei Röhren, Klasse AB

$U_a = 300 \text{ V}$ $R_k = 130 \ \Omega$

$U_{g2} = 300 \text{ V}$ $R_{aa} = 8 \text{ k}\Omega$

