**CHARACTERISTICS**

- **Heater voltage** \( V_h = 63 \) V
- **Heater current** \( I_h = 1.35 \) A
- **Anode voltage** \( V_a = 800 \) V
- **Screen-grid voltage** \( V_{gs} = 400 \) V
- **Suppressor-grid voltage** \( V_{gs} = 0 \) V
- **Anode current** \( I_a = 225 \) mA
- **Screen-grid current** \( I_{gs} = 25 \) mA
- **Grid bias** \( V_{gs} = -37 \) V
- **Slope** \( S = 4 \) mA/V
- **AC resistance** \( R_l = 50 \) kΩ

**Maximum output from two valves in Class AB push-pull with fixed grid bias**

\( W_{0,\text{max}} = 84 \) W

**Total distortion** \( d_{\text{tot}} = 6.6 \% \)

**Required input per valve** \( V_l = 23 \) V (RMS)

**Optimum load (anode to anode)** \( R_a = 16 \) kΩ

---

**SPECIAL ADVANTAGES**

1. High efficiency
2. High sensitivity
3. Small size

**DESCRIPTION**

The EL 50 is an indirectly heated 18 W output pentode intended mainly for class AB push-pull stages. The best efficiency is obtained with 800 V on the anodes, 400 V on the screen grids and fixed grid bias of -37 V; under these conditions a pair of valves provides 84 W output when fully loaded, total distortion amounting to 6.6%; it is essential that the screen-grid voltage be constant if this output is to be obtained. A rectifier of minimum internal resistance should therefore be used; the gas-filled type is especially suitable.

![Graph](image-url)  
**Fig. 2**

Anode current \( I_a \), screen-grid current \( I_{gs} \) and total distortion \( d_{\text{tot}} \) shown against power output \( W_0 \) for two valves EL 50 in push-pull, class AB with fixed bias, and \( V_a = 800 \) V, \( V_{gs} = 400 \) V.
Anode current $I_{an}$ and standing anode current $I_{ao}$ screen-grid voltage $V_{gs}$, grid bias $V_{g}$, output power $W_o$, total distortion $d_{tot}$ and anode load $R_a$, shown for various anode voltages, for two valves EL 50 in push-pull cl. AB with fixed bias.

Fig. 2 shows the operating conditions for a pair of valves in push-pull, with an anode voltage of 800 V.
The EL 50 may, if necessary, be used at lower voltages; the performance obtained is indicated in fig. 3, and it will be observed that, even with a high-tension supply of 400/425 V, an output of 50 W is obtainable.