

Title (en)  
Flat display

Title (de)  
Flache Anzeigeeinrichtung

Title (fr)  
Dispositif de visualisation plat

Publication  
**EP 0461657 B1 19970813 (EN)**

Application  
**EP 91109734 A 19910613**

Priority  
JP 15616890 A 19900614

Abstract (en)  
[origin: EP0461657A2] A flat display comprises a flat tube (1) having a front panel (1F) and a back panel (1B) facing the front panel (1F), a fluorescent screen (2) formed on the inner surface of the front panel (1F) of the flat tube (1), an electron gun (10) disposed outside a region extending behind the fluorescent screen (2), a vertical deflecting electrode (3) disposed on the inner surface of the back panel (1B) and comprising a plurality of parallel electrode elements (3a) extending along the horizontal scanning direction, and an electrode structure (7) disposed between the vertical deflecting electrode (3) and the fluorescent screen (2), and comprising at least a counter electrode (4) constituting a vertical deflecting system together with the vertical deflecting electrode (3), a modulating electrode (5) and a horizontal deflecting electrode (6). The electron gun (10) has a back plate (41) and a cathode (1K) having a plurality of field emission cathode elements (K) arranged on a line on the inner surface of the back plate (41), and emits a flat electron beam (b) into the space between the vertical deflecting electrode (3) and the electrode structure (7). Since the flat electron beam (b) is produced by the plurality of field emission cathode elements (K) arranged on a line, the cathode (1K) of the electron gun (10) does not vibrate and hence the cathode (1K) can be formed in a large length suitable for a large display screen. <IMAGE>

IPC 1-7  
**H01J 31/12**

IPC 8 full level  
**H01J 31/12** (2006.01)

CPC (source: EP)  
**H01J 31/124** (2013.01)

Cited by  
US5473219A; US5347292A; DE19534228A1; GB2259183A; GB2259183B

Designated contracting state (EPC)  
DE FR GB

DOCDB simple family (publication)  
**EP 0461657 A2 19911218; EP 0461657 A3 19920311; EP 0461657 B1 19970813**; DE 69127233 D1 19970918; DE 69127233 T2 19980319; JP 2982222 B2 19991122; JP H0448538 A 19920218

DOCDB simple family (application)  
**EP 91109734 A 19910613**; DE 69127233 T 19910613; JP 15616890 A 19900614