Title (en)

FIELD EMISSION DEVICE WITH INTERNAL STRUCTURE FOR ALIGNING PHOSPHOR PIXELS WITH CORRESPONDING FIELD EMITTERS

Title (de)

FELDEMISSIONSVORRICHTUNG MIT INNEREM STRUKTUR ZUM AUSRICHTEN VON PHOSPHOR-PIXELN AUF ENTSPRECHENDEN FELDEMITTERN

Title (fr)

DISPOSITIF A EMISSION DE CHAMPS MUNI DE STRUCTURES INTERIEURES PERMETTANT D'ALIGNER LES PIXELS DE PHOSPHORE SUR LES EMETTEURS DE CHAMP CORRESPONDANTS

Publication

EP 0740846 A1 19961106 (EN)

Application

EP 95940804 A 19951120

Priority

- US 9515226 W 19951120
- US 34307494 A 19941121
- US 34307594 A 19941121
- US 34380394 A 19941121

Abstract (en)

[origin: WO9616429A2] A field emission display device has a faceplate and a backplate. The faceplate includes a faceplate interior side with an active region made of a plurality of phosphor pixel elements; and the backplate has a backplate interior side with a plurality of field emitters. Sidewalls are positioned between the faceplate and the backplate, to form an enclosed sealed envelope between the sidewalls, backplate interior side and the faceplate interior side. At least one spacer wall in the envelope supports the backplate and the faceplate against forces acting in a direction toward the envelope. At least one internal structure fixes and constrains the faceplate and the backplate, and aligns a plurality of phosphor pixels with corresponding field emitters. Additonally, the faceplate can include at least one faceplate fiducial, and the backplate include a corresponding backplate fiducial. The faceplate fiductial is optically aligned with the backplate fiducial. First, the spacer wall is positioned in the wall gripper. The faceplate and backplate fiducials are then optically aligned, and the spacer wall then introduced into the locator. Phosphor pixels are aligned with their corresponding field emitters. There is no need for external fixturing devices in the high temperature bonding and sealing processes of the display.

IPC 1-7

H01J 31/12; H01J 29/82

IPC 8 full level

H01J 9/24 (2006.01); **H01J 9/14** (2006.01); **H01J 29/02** (2006.01); **H01J 29/08** (2006.01); **H01J 29/32** (2006.01); **H01J 29/46** (2006.01); **H01J 29/62** (2006.01); **H01J 29/86** (2006.01); **H01J 29/87** (2006.01); **H01J 31/12** (2006.01)

CPC (source: EP)

H01J 9/242 (2013.01); **H01J 29/085** (2013.01); **H01J 29/467** (2013.01); **H01J 29/864** (2013.01); **H01J 31/127** (2013.01); H01J 2329/8625 (2013.01); H01J 2329/863 (2013.01); H01J 2329/8665 (2013.01)

Citation (search report)

- [X] EP 0496450 A1 19920729 - PHILIPS NV [NL]
- [Y] GB 2170351 A 19860730 - SONY CORP
- [Y] WO 9418694 A1 19940818 - SILICON VIDEO CORP [US]
- [A] WO 9302442 A1 19930204 - PANOCORP DISPLAY SYSTEMS INC [US]
- [A] EP 0404022 A2 19901227 - MATSUSHITA ELECTRIC IND CO LTD [JP]
- [A] WO 9200600 A1 19920109 - COLORAY DISPLAY CORP [US]

Designated contracting state (EPC)

AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE

DOCDB simple family (publication)

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DOCDB simple family (application)

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