

Title (en)
LIQUID CRYSTAL OPTICAL WAVEGUIDE DISPLAY SYSTEM.

Title (de)
ANZEIGESYSTEM MIT OPTISCHEM FLÜSSIGKRISTALL-WELLENLEITER.

Title (fr)
SYSTEME D'AFFICHAGE A CRISTAUX LIQUIDES ET A GUIDE D'ONDES OPTIQUE.

Publication
EP 0655145 A1 19950531 (EN)

Application
EP 92917030 A 19920803

Priority

- CA 2141675 A 19920803
- US 9206418 W 19920803
- US 9108109 W 19911030

Abstract (en)
[origin: WO9309454A1] A controllable waveguide display based on a cladding (3), supercladding (1 and 6) and/or core (4) utilizing liquid crystals is described. An electric field applied through a fiber causes the liquid crystal layer to become aligned. Changes in the refractive index of the liquid crystal layer causes light to switch out of the fiber. In one embodiment light is coupled into a supercladding (6) running alongside the core and reflected out of the fiber at a reflector pit (35) cut in the fiber. Parallel arrays of fibers are used to cover a substrate and make large viewing screens. A tapered supercladding (6) helps improve the contrast ratio of screens using fiber taps. A thin cladding (3) and closely spaced dark cladding (2) also help improve the screen contrast ratio. Color techniques based on a three core fiber that shares a single supercladding (1) is introduced. An illumination method is also taught which breaks white light into colored components (73) with dielectrc filters (103) to efficiently utilize white light (102). An electronic feedback system (96) is introduced which provides screen brightness and color uniformity under varying temperature and environmental conditions.

IPC 1-7
G02B 6/26; G09G 3/08; H01J 5/16

IPC 8 full level
F21V 8/00 (2006.01); **G02F 1/01** (2006.01); **G02F 1/11** (2006.01); **G02F 1/335** (2006.01); **G09F 9/305** (2006.01); **H04N 5/66** (2006.01); **G02B 6/08** (2006.01); **G02F 1/13** (2006.01); **G02F 1/1333** (2006.01); **G09F 13/18** (2006.01)

CPC (source: EP)
G02B 6/001 (2013.01); **G02B 6/0051** (2013.01); **G02F 1/011** (2013.01); **G09F 9/305** (2013.01); **G02B 6/08** (2013.01); **G02F 1/13** (2013.01); **G02F 1/1326** (2013.01); **G09F 2013/1877** (2013.01)

Designated contracting state (EPC)
AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL SE

DOCDB simple family (publication)
WO 9309454 A1 19930513; CA 2141675 A1 19930513; EP 0655145 A1 19950531; EP 0655145 A4 19950913; JP H07502602 A 19950316; WO 9309450 A1 19930513

DOCDB simple family (application)
US 9206418 W 19920803; CA 2141675 A 19920803; EP 92917030 A 19920803; JP 50473291 A 19911030; US 9108109 W 19911030