



US006563551B1

(12) **United States Patent**
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(10) **Patent No.:** **US 6,563,551 B1**
(45) **Date of Patent:** **May 13, 2003**

(54) **HIGH CONTRAST POLARIZING OPTICS FOR A COLOR ELECTRO-OPTIC DISPLAY DEVICE**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 476 days.

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Primary Examiner—Michael H. Lee

(21) Appl. No.: **09/605,951**

(57) **ABSTRACT**

(22) Filed: **Jun. 28, 2000**

(65) **Prior Publication Data**

A projection-type color image display system uses a reflective liquid crystal (LC) light modulator (24) and a polarizing beam-splitter (22) for separating the incoming and reflected light. Light from the source arrives on a first axis (28) and is reflected outward, with the imposed image, along a second axis (30) through a projection lens (26). In order to produce a high contrast image, a pre-polarizer (36, 42, 48) and/or post-polarizer (44, 50) are used to restore the selectivity and, consequently, optical system contrast for the wide “cone of acceptance” of light rays which are common in projection systems. In order to improve the system contrast, the pre-and/or post-polarizer is arranged along the first and second axis, respectively, with its polarizer absorbing axis extending parallel to the normal n of the reflective surface (34, 46) of the PBS.

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(51) **Int. Cl.⁷** **H04N 9/31**; G02F 1/00

(52) **U.S. Cl.** **348/759**; 348/761; 353/20; 349/9

(58) **Field of Search** 348/744, 750, 348/751, 756, 757, 758, 759, 760, 761, 762, 742, 743; 353/20, 31, 33; 359/490, 493, 494, 495, 496, 634, 583; 349/5, 9; H04N 9/31

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7 Claims, 4 Drawing Sheets

