

1. Record Nr.	UNINA9910457311103321
Autore	Boer W. den (Willem), <1914-1993.>
Titolo	Active matrix liquid crystal displays [[electronic resource] /] / Willem den Boer
Pubbl/distr/stampa	Amsterdam, : Elsevier, c2005
ISBN	1-280-62940-1 9786610629404 0-08-045576-X
Descrizione fisica	1 online resource (252 p.)
Disciplina	621.3815422
Soggetti	Liquid crystal displays Thin films Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Subtitle on cover: Fundamentals and applications.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	front cover; table of contents; Preface; 1 Introduction; 1.1 Historical Perspective; 1.2 Liquid Crystal Properties; 1.3 Polarization, Dichroism, and Birefringence; 1.4 The Twisted Nematic Cell; 1.5 Limitations of Passive Matrix Addressing; Chapter 1 References; 2 Operating Principles of Active Matrix LCDs; 2.1 The Case for Active Matrix; 2.2 Requirements for Active Matrix Switching Devices; 2.3 The Thin Film Transistor; 2.4 Thin Film Silicon Properties; 2.5 Amorphous Silicon TFTs; 2.6 Poly-Silicon TFTs; 2.7 Basic Pixel Circuit and Addressing Methods; 2.8 Diode-Based Displays 2.9 Plasma-Addressed LCDs Chapter 2 References; 3 Manufacturing of AMLCDs; 3.1 Basic Structure of AMLCDs; 3.2 Thin Film Processing; 3.3 Thin Film Properties; 3.4 Amorphous Silicon TFT Array Processes; 3.5 Poly-Si TFT Array Processes; 3.6 Color Filter Array Process; 3.7 LC Cell Assembly; 3.8 Module Assembly; 3.9 Yield Improvements and Considerations; 3.10 Trends in Manufacturing; 4 AMLCD Electronics; 4.1 Drive Methods; 4.2 Row Select and Column Data Drivers; 4.3 Timing Controllers, Display Controllers, and Interfaces; 4.4 Integration of Electronics on Glass; 4.5 Backlights 4.6 Power Consumption Chapter 4 References; 5 Performance

Characteristics; 5.1 Basics of Photometry and Colorimetry; 5.2 Brightness and Contrast Ratio; 5.3 Viewing Angle Behavior; 5.4 Color and Gray Scale Performance; 5.5 Response Time and Flicker; 5.6 Resolution and Size; 5.7 Image Artifacts; Chapter 5 References; 6 Improvement of Image Quality in AMLCDs; 6.1 Brightness Improvements; 6.2 Readability Under High Ambient Lighting Conditions; 6.3 Color Gamut Improvements; 6.4 Wide Viewing Angle Technologies; 6.5 Enhancement of Video Performance; 6.6 Large Size; Chapter 6 References
7 Special AMLCD Configurations 7.1 Ultra-High-Resolution Monitors and Improved Gray Scale; 7.2 Reflective and Transflective Displays; 7.3 Field-Sequential Color LCDs; 7.4 Stereoscopic AMLCDs; 7.5 Touch Screen Technologies; Chapter 7 References; 8 Alternative Flat Panel Display Technologies; 8.1 Plasma Displays; 8.2 Electroluminescent Displays; 8.3 Electronic Paper and Flexible Displays; 8.4 Organic Thin Film Transistors; 8.5 Front and Rear Projection Displays; Chapter 8 References; 9 Active Matrix Flat Panel Image Sensors; 9.1 Flat Panel Image Sensors; 9.2 Direct Conversion Detectors 9.3 Indirect Conversion Detectors 9.4 Applications of Flat Panel X-Ray Sensors; Chapter 9 References; index

Sommario/riassunto

Active matrix liquid crystal displays (AMLCDs) are the preferred choice when thin, low power, high quality, and lightweight flat panel displays are required. Here is the definitive guide to the theory and applications of AMLCDs. Contemporary portable communication and computing devices need high image quality, light weight, thin, and low power flat panel displays. The answer to this need is the color active matrix liquid crystal display (AMLCD). The rise of AMLCD technology over less than two decades to undisputed dominance as a flat panel display has been breathtaking, and designers
