

Emerging Lighting Technologies and Global Market (2009-2014)

<https://marketpublishers.com/r/E4AACDACE13EN.html>

Date: November 2009

Pages: 199

Price: US\$ 5,650.00 (Single User License)

ID: E4AACDACE13EN

Abstracts

The increase in the living standards and changing lifestyles has led to a greater demand for energy-efficient new lighting technologies over the traditional incandescent and halogen lighting. A wide number of application areas ranging from small household lighting to commercial and industrial lighting have been benefited by these emerging lighting technologies. The fulcrum has further shifted in favor of these new technologies by virtue of their availability in different sizes and shapes and with different fixtures to justify their usage in the widely varied application areas. With U.S and Europe holding the major chunk of the market share currently, Asia is seen as an emerging market with tremendous potential, particularly in countries like India and China.

Though the market is being boosted by the improved energy efficiency obtained, but there are challenges to be overcome. High initial cost and health and environmental concerns in developed countries are some of the major hiccups for the industry. However, the current market trends show the increasing market size for emerging lighting technologies in both the developed and developing countries. With continued efforts and research to overcome the challenges, and development of improved products at affordable prices, the market is set for a roll-on for the next several decades.

The global emerging lighting technologies market is expected to be worth US\$109.2 billion by 2014, growing at an estimated CAGR of 8.1% from 2009 to 2014. Fluorescent lighting forms the largest market segment; and is expected to reach US\$82.6 billion by 2014 at a CAGR of 7.9% for the same period.

North America is the largest emerging lighting market; and is expected to be worth US\$42.8 billion by 2014, accounting for nearly 39% of the total revenues. Europe is the second largest segment and is expected to reach US\$36.9 billion by 2014. However,

Asia is the fastest growing market and is poised for a high growth of 8.9% for the next five years.

Scope of the Report

This report aims to identify and analyze emerging lighting products according to product, application, and technology. The report provides in-depth market estimates and forecasts for global emerging lighting market as follows:

- **Emerging lighting technologies – product**
Light emitting diodes (LED), Fluorescent lighting, High intensity discharge, Neon lamps, Distance lighting, Wireless Lighting, Sulfur Plasma, Tungsten photonic lattice
- **Emerging lighting technologies – application**
General lighting, Industrial lighting, Aerospace and defense, Agricultural, Medical, Automotive, Street Lighting, Movies/Theatres, Decoration, Advertisement, Display backlighting, Signs and Traffic signaling, and others
- **Emerging lighting technologies – technology**
Electronic ballast based, Pulse start, Substrate materials, Laser lift-off, Temporary bonding, Binning, Surface texturing, Phosphor composition and deposition, High Pressure Mercury Vapor Lamps, Low Pressure Mercury Vapor Lamps, Tungsten photonic lattice, and others

Each section will provide market data, market drivers, trends and opportunities, top-selling products, key players, and competitive outlook. This report will also provide more than 100 market tables for various geographic regions covering the sub-segments and micro-markets. In addition, the report also provides 38 company profiles for each of its sub-segments.

What makes our reports unique?

- We provide the longest market segmentation chain in this industry- not many reports provide market breakdown up to level 5.
- Each report is about 250 pages with 100+ market data tables, 40 competitive company profiles, analysis of 300 patents and minimum 50 micro markets, which are collectively exhaustive and mutually exclusive.

- No single report by any other publisher provides market data for all the segments viz products, services, applications, ingredients, technology, and stakeholders in a single report for all the four geographies - US, Europe, APAC, ROW.
- We provide 10% customization- normally it is seen that clients do not find specific market intelligence that they are looking for. Our customization will ensure that you necessarily get the market intelligence you are looking for and we get a loyal customer.
- 15 pages of high level analysis including benchmarking strategies, best practices and the market's cash cows (BCG matrix). We conduct detailed market positioning, product positioning and competitive positioning. Entry strategies, gaps and opportunities are identified for all the stakeholders.
- Comprehensive market analysis for lighting equipment producing companies, research labs, the ingredient suppliers for the lighting technologies, and the major technology suppliers.

Key questions answered

- Which are the high-growth segments/cash cows and how is the market segmented in terms of applications, products, services, ingredients, technologies, stakeholders?
- What are market estimates and forecasts; which markets are doing well and which are not?
- Where are the gaps and opportunities; what is driving the market?
- Which are the key playing fields? Which are the winning edge imperatives?
- How is the competitive outlook; who are the main players in each of the segments; what are the key selling products; what are their strategic directives, operational strengths and product pipelines? Who is doing what?

Powerful Research and analysis

The analysts working with MarketsandMarkets come from renowned publishers and market research firms, globally, adding their expertise and domain understanding. We get the facts from over 22,000 news and information sources, a huge database of key industry participants and draw on our relationships with more than 900 market research

companies across the world. We, at MarketsandMarkets, are inspired to help our clients grow by providing qualitative business insights with our huge market intelligence repository.

Contents

Executive Summary
emerging lighting MARKET
emerging lighting PRODUCT MARKET
emerging lighting applications
emerging lighting technologies

GEOGRAPHIC ANALYSIS

1. INTRODUCTION

1.1. KEY TAKE-AWAYS
1.2. REPORT DESCRIPTION
1.3. Scope of the report
1.4. STAKEHOLDERS

2. SUMMARY

3. MARKET OVERVIEW

3.1. Evolution of emerging lighting technology
3.2. Defining the emerging lighting technologies market
3.3. Trends in lighting
3.4. Operational cost Vs capital cost
3.5. Relative performance of different lighting sources
3.6. Cost VS performance comparison of major lighting sources
3.7. Product lifecycle of lighting sources
3.8. Product positioning
 3.8.1. Issues in lighting
3.9. GLOBAL residential electricity consumption
3.10. residential electricity consumption, BY applications
3.11. Driving factor analysis of emerging lighting technologies market
 3.11.1. Demand side drivers
 3.11.2. Supply side drivers
 3.11.3. Restraints
 3.11.4. Opportunities
 3.11.5. Key competitive points

3.11.5.1. Energy efficiency

3.11.5.2. Environment-friendliness

3.12. GEOGRAPHICAL ANALYSIS OF ELT MARKET

4. LIGHT EMITTING DIODES

4.1.1. DRIVERS

4.1.1.1. Longer lifespan and lower energy consumption

4.1.1.2. Efficient and robust design for better productivity

4.1.1.3. Wide range of applications

4.1.1.4. Safe and environment-friendly lighting solution

4.1.2. INHIBITORS & Opportunities

4.1.2.1. High cost

4.1.2.2. Less efficient for heat sensitivity applications

4.1.2.3. Unidirectional optical output

4.1.2.4. Commercial and residential lighting

4.2. OLED – Organic LED

4.2.1. Drivers

4.2.1.1. OLEDs provide a sense of natural light

4.2.1.2. Better illumination of large areas

4.2.1.3. Advantages of fluorescent lights

4.2.1.4. Elimination of light distribution channel

4.2.1.5. Useful in slimmer lighting application

4.2.2. INHIBITORS

4.2.2.1. High cost and limited lifetime

4.2.2.2. Less light per area

4.3. AMOLED

4.3.1. Drivers

4.3.1.1. High-end and light-weight lighting application

4.3.1.2. Long lasting and energy efficient

4.3.1.3. PMOLED

4.4. HIGH-BRIGHTNESS LED

4.4.1. White LED

4.4.1.1. White LED applications

4.4.2. Color LED

4.4.3. Flashing LED

4.4.4. Alphanumeric LED

4.5. Miniature light-emitting diode

4.5.1. Ultraviolet LED (UV-LED)

4.5.2. Drivers and Inhibitors

4.5.2.1. Inexpensive and environment friendly

4.5.2.2. Higher compactness and efficiency

4.5.2.3. Limited power output and shorter lifespan

4.6. APPLICATIONS Of LED LIGHTING

4.6.1. Automotive

4.6.2. General lighting

4.6.2.1. Residential

4.6.2.2. Industrial

4.6.2.3. Architectural

4.6.3. Display backlighting

4.6.3.1. Mobile phones

4.6.3.2. TV/Monitors

4.6.3.3. Other Applications

4.6.4. Signs and traffic signaling

4.6.4.1. Traffic signaling & street lighting

4.6.4.2. Advertisement boards

4.6.4.3. Other applications

4.7. Fabrication methods

4.7.1. Metal Organic CVD

4.7.2. Molecular Beam Epitaxy

4.7.3. Liquid Phase Epitaxy

4.7.4. Vapor Phase Epitaxy

4.8. Technologies

4.8.1. Substrate Materials

4.8.2. Silicon

4.8.3. Gallium Arsenide (GaAs)

4.8.4. Laser Lift-Off

4.8.5. Temporary Bonding

4.8.6. Transparent Top Contacts

4.8.7. Binning

4.8.8. Surface Texturing

4.8.9. Phosphor composition and deposition

5. FLUORESCENT LIGHTING TECHNOLOGIES

5.1. Drivers

5.1.1. Fluorescent lamps to replace incandescent lighting

5.1.2. Higher energy efficiency and longer life

5.2. INHIBITORS & opportunities

5.2.1. Contains small amounts of mercury

5.2.2. Takes time to achieve full brightness

5.2.3. not suitable for Outdoor use in cold weather

5.3. COMPACT FLUORESCENT LAMP

5.3.1. greener environment

5.3.2. Plug-in CFL

5.3.3. Integral CFL

5.3.4. Adapter CFL

5.3.5. Fixtures

5.3.6. Screw-based

5.3.7. Pin-mounted

5.4. Cold-cathode fluorescent lamps (CCFL)

5.4.1. Drivers & restraints

5.4.1.1. Wide range of applications

5.4.1.2. Low efficacy

5.5. Black lights

5.6. Tanning lamps

5.6.1. High pressure lamps

5.6.2. Low pressure lamps

5.6.3. Grow lamps

5.6.4. Germicidal lamps

5.7. Fluorescent Induction Lamp

5.8. Applications

5.8.1. Home lighting

- 5.8.2. Aerospace and defense
- 5.8.3. Industrial
- 5.8.4. Agriculture
- 5.8.5. Medical
- 5.8.6. Others

5.9. CFL applications

6. HIGH INTENSITY DISCHARGE

- 6.1. Drivers & inhibitors
 - 6.1.1. Better service and safety in emergency
 - 6.1.2. energy conservation & environment friendliness
 - 6.1.3. delayed starting and low color rendition
- 6.2. Sodium Vapor Lamps
- 6.3. Low pressure sodium
- 6.4. High pressure sodium
- 6.5. Mercury vapor lamps
- 6.6. High Pressure Mercury Vapor Lamps
- 6.7. Low Pressure Mercury Vapor Lamps
- 6.8. Ceramic Discharge Metal Halide lamps
- 6.9. Metal halide lamp
- 6.10. Xenon arc lamps
- 6.11. Ultra-High Performance
- 6.12. Applications
 - 6.12.1. Indoor
 - 6.12.2. Outdoor
 - 6.12.3. Other
 - 6.12.3.1. Automotive
 - 6.12.3.2. Aviation
- 6.13. Technology
 - 6.13.1. Electronic ballast-based
 - 6.13.2. Pulse start

7. NEON LAMPS

- 7.1. Fluorescent neon lamp
- 7.2. High-brightness and semi-high brightness neon lamps
- 7.3. Standard Brightness neon lamps

7.4. Noble Gas

7.4.1. Neon

7.4.2. Argon

7.4.3. Krypton

7.4.4. Xenon

7.4.5. Helium

7.4.6. Mixed gases

8. WIRELESS LIGHTING TECHNOLOGY

8.1. Drivers

8.2. Inhibitors

8.3. Wireless Motion lights

8.4. Wireless Cabinet lights

8.5. Applications

8.5.1. Home lighting

8.5.2. Industrial

8.5.3. Automotive

8.5.4. Others

9. SULFUR PLASMA

9.1. Recent developments

9.1.1. Light distribution systems

9.1.2. Light pipes

9.1.3. Secondary reflectors

9.1.4. Indirect lighting

9.1.5. Direct lighting

9.1.6. Optical fibers

9.2. Applications

9.2.1. Airports

9.2.2. Museums

9.2.3. Defense and diplomatic office buildings

9.2.4. Stadiums

10. TUNGSTEN PHOTONIC LATTICE

10.1. Applications

10.1.1. Automotive

- 10.1.2. Industrial
- 10.1.3. Aerospace and defense

11. DISTANCE LIGHTING TECHNOLOGY

- 11.1. Drivers & Inhibitors
 - 11.1.1. optimum use in museums, art galleries, light sensitive areas
 - 11.1.2. Used in hazardous environment
 - 11.1.3. environment friendly
 - 11.1.4. low light output and high Cost of installation
- 11.2. Fiber optic based
- 11.3. Prism light guides based
- 11.4. Applications
 - 11.4.1. Outdoor applications
 - 11.4.1.1. Lawns and gardens
 - 11.4.1.2. Housing complexes
 - 11.4.1.3. Airports
 - 11.4.1.4. Defense
 - 11.4.2. Indoor applications
 - 11.4.2.1. Long stairways and corridors
 - 11.4.2.2. Indoor stadiums
 - 11.4.2.3. Large aquariums

12. GEOGRAPHIC ANALYSIS

- 12.1. Summary
- 12.2. U.S. EMERGING LIGHTING market
- 12.3. European EMERGING LIGHTING market
- 12.4. Asian EMERGING LIGHTING market

13. COMPANY PROFILES

- 13.1. AXTRON AG
- 13.2. Automotive Lighting LLC
- 13.3. Bridgelux Inc
- 13.4. BULBRITE
- 13.5. CML Innovative Technologies Inc
- 13.6. Cooper lighting
- 13.7. Cree inc

- 13.8. Crystal IS
- 13.9. Data Display Products Inc
- 13.10. Digital Light LLC
- 13.11. Diguang International Development Co. Ltd.
- 13.12. Energy Conservation Technologies, Inc.
- 13.13. Energy Focus, Inc
- 13.14. Feit Electric Company Inc
- 13.15. GE Lighting
- 13.16. Intematix Technology
- 13.17. JKL Components Corp
- 13.18. LCD Lighting Inc
- 13.19. LedEngin, Inc
- 13.20. LEDtronics Inc
- 13.21. Lemnis Lighting Inc
- 13.22. MaxLite SK America Inc
- 13.23. Nichia Corporation
- 13.24. Osram GmbH
- 13.25. Panasonic Electric Works
- 13.26. Opto Technology Inc
- 13.27. Royal Philips Electronics
- 13.28. Standard products Inc
- 13.29. Stanley Electric Company Ltd
- 13.30. TCP
- 13.31. Toshiba Lighting
- 13.32. Toyoda Gosei Company Ltd.
- 13.33. Eiko Limited
- 13.34. USHIO America Inc
- 13.35. Visteon Corporation
- 13.36. Welch Allyn Inc
- 13.37. Wellypower Optronics
- 13.38. Westinghouse Lighting Corporation

14. PATENT ANALYSIS

APPENDIX

- 14.1. U.S. Patents
 - 14.1.1. Light emitting diodes patents
 - 14.1.2. Fluorescent lighting patents

- 14.1.3. High intensity discharge patents
- 14.1.4. Distance lighting technology patents
- 14.2. Europe patents
 - 14.2.1. Light emitting diodes patents
 - 14.2.2. Fluorescent lighting patents
 - 14.2.3. High intensity discharge patents
 - 14.2.4. Distance lighting technology patents
 - 14.2.5. Neon lamps patents
- 14.3. AsiaN PATENTS
 - 14.3.1. Light emitting diodes patents
 - 14.3.2. Fluorescent lighting patents
 - 14.3.3. High intensity discharge patents

List Of Tables

LIST OF TABLES

1. GLOBAL led LIGHTING MARKET, BY PRODUCTS 2009 – 2014 (\$MILLIONS)
2. GLOBAL led LIGHTING market, by geography 2009 – 2014 (\$MILLIONS)
3. MAJOR PLAYERS AND DEVELOPMENTS
4. GLOBAL organic led LIGHTING MARKET, BY PRODUCTS 2007- 2014 (\$MILLIONS)
5. GLOBAL organic led LIGHTING MARKET, BY geography 2007– 2014 (\$millions)
6. MAJOR PLAYERS AND DEVELOPMENTS
7. GLOBAL AMOLED lighting MARKET, BY geography 2007- 2014 (\$millions)
8. GLOBAL PMOLED MARKET, BY geography 2007- 2014 (\$millions)
9. GLOBAL HIGH-BRIGHTNESS LED lighting MARKET, BY products
10. GLOBAL HIGH-BRIGHTNESS LED MARKET, BY geography 2007- 2014
11. GLOBAL white LED lighting MARKET, BY geography 2007 – 2014
12. GLOBAL color LED lighting MARKET, BY geography 2007 – 2014 (\$millions)
13. GLOBAL Flashing LED MARKET, BY geography 2007 – 2014 (\$ millions)
14. GLOBAL Alphanumeric LED lighting MARKET, BY geography
15. GLOBAL Miniature lighting MARKET, BY geography 2007 – 2014 (\$millions)
16. MAJOR PLAYERS AND DEVELOPMENTS
17. GLOBAL UV-LED lighting MARKET, BY geography 2007 – 2014 (\$millions)
18. GLOBAL LED MARKET, BY Fabrication 2009 – 2014 (\$millions)
19. GLOBAL LED MARKET, BY technologies 2009 – 2014 (\$millions)
20. GLOBAL Fluorescent lighting MARKET, BY PRODUCTS 2007 – 2014 (\$MILLIONS)
21. GLOBAL Fluorescent lighting market, by geography 2007 – 2014 (\$MILLIONS)
22. MAJOR PLAYERS AND recent DEVELOPMENTS
23. GLOBAL CFL MARKET, BY products 2007 – 2014 (\$MILLIONS)
24. GLOBAL CFL MARKET, BY geography 2007 – 2014 (\$MILLIONS)
25. MAJOR PLAYERS AND DEVELOPMENTS
26. GLOBAL Plug-in CFL MARKET, BY geography 2007 – 2014 (\$MILLIONS)
27. GLOBAL Integral CFL MARKET, BY geography 2007 – 2014 (\$MILLIONS)
28. GLOBAL Adapter CFL MARKET, BY geography 2007 – 2014 (\$MILLIONS)
29. GLOBAL Fixtures lighting MARKET, BY products 2007 – 2014 (\$MILLIONS)
30. GLOBAL Fixtures lighting MARKET, BY geography 2007 – 2014 (\$MILLIONS)
31. GLOBAL Screw-based lighting MARKET, BY geography 2007 – 2014 (\$MILLIONS)
32. GLOBAL Pin-mounted lighting MARKET, BY geography 2007 – 2014 (\$MILLIONS)
33. GLOBAL CCFL lighting MARKET, BY geography 2007 – 2014 (\$MILLIONS)
34. GLOBAL Blacklights lighting MARKET, BY geography 2007 – 2014 (\$MILLIONS)

35. GLOBAL Tanning light MARKET, BY products 2007 – 2014 (\$MILLIONS)
36. GLOBAL Tanning light MARKET, BY geography 2007 – 2014 (\$ MILLIONS)
37. GLOBAL High pressure tanning lamps MARKET, BY geography
38. GLOBAL Low pressure tanning lamps MARKET, BY geography 2007 – 2014 (\$ MILLIONS)
39. GLOBAL Grow lamps MARKET, BY geography 2007 – 2014 (\$MILLIONS)
40. GLOBAL Germicidal lamps MARKET, BY geography 2007 – 2014 (\$MILLIONS)
41. GLOBAL Fluorescent Induction Lamp MARKET, BY geography
42. ownership Cost of CFL vs incandescent
43. GLOBAL HID lighting MARKET, BY products 2007 – 2014 (\$millions)
44. GLOBAL hid lighting MARKET, BY geography 2007 – 2014 (\$millions)
45. MAJOR PLAYERS AND DEVELOPMENTS
46. GLOBAL Sodium Vapor lighting MARKET, BY products 2007 – 2014 (\$millions)
47. GLOBAL Sodium Vapor lighting MARKET, BY geography 2007 – 2014 (\$millions)
48. GLOBAL Low pressure sodium vapor lighting MARKET, BY geography 2007 – 2014 (\$millions)
49. GLOBAL High pressure sodium vapor lighting MARKET, BY geography 2007 – 2014 (\$millions)
50. GLOBAL Mercury vapor lamps lighting MARKET, BY products
51. GLOBAL Mercury vapor lamps lighting MARKET, BY geography
52. GLOBAL High Pressure Mercury Vapor lighting MARKET,
53. GLOBAL Low Pressure Mercury Vapor lighting MARKET,
54. GLOBAL Ceramic Discharge Metal Halide lighting MARKET
55. GLOBAL Metal halide lamp lighting MARKET, BY geography
56. GLOBAL Xenon arc lamps lighting MARKET, BY geography
57. GLOBAL Ultra-High Performance lighting MARKET, BY geography
58. GLOBAL Neon Lamps lighting MARKET, BY products 2007 – 2014 (\$millions)
59. GLOBAL Neon Lamps lighting MARKET, BY geography 2007 – 2014 (\$millions)
60. GLOBAL Fluorescent neon lighting MARKET, BY geography
61. GLOBAL High-brightness neon lighting MARKET, BY geography
62. GLOBAL Standard Brightness neon lighting MARKET, BY geography 2007 – 2014 (\$millions)
63. GLOBAL Noble Gas lighting MARKET, BY products 2007 – 2014 (\$millions)
64. GLOBAL Noble Gas lighting MARKET, BY geography 2007 – 2014 (\$millions)
65. Gas types and their color attributes
66. GLOBAL neon lighting MARKET, BY geography 2007 – 2014 (\$millions)
67. GLOBAL Argon lighting MARKET, BY geography 2007 – 2014 (\$millions)
68. GLOBAL Krypton lighting MARKET, BY geography 2007 – 2014 (\$millions)
69. GLOBAL Xenon lighting MARKET, BY geography 2007 – 2014 (\$millions)

70. GLOBAL Helium lighting MARKET, BY geography 2007 – 2014 (\$millions)
71. GLOBAL Mixed gases lighting MARKET, BY geography 2007 – 2014 (\$millions)
72. GLOBAL Wireless lighting MARKET, BY products 2007 – 2014 (\$millions)
73. GLOBAL Wireless lighting MARKET, BY geography 2007 – 2014 (\$millions)
74. MAJOR PLAYERS AND DEVELOPMENTS
75. GLOBAL Wireless Motion lighting MARKET, BY geography
76. GLOBAL Wireless Cabinet lighting MARKET, BY geography 2007- 2014 (\$millions)
77. GLOBAL Sulfur plasma lighting MARKET, BY geography 2007 – 2014 (\$millions)
78. GLOBAL Tungsten photonic lattice lighting MARKET, BY geography 2007 – 2014 (\$millions)
79. GLOBAL Distance lighting MARKET, BY geography 2007 – 2014 (\$millions)
80. GLOBAL EMERGING LIGHTING market, by geography 2007 – 2014 (\$millions)
81. U.S. EMERGING LIGHTING market, by products 2007 – 2014 (\$millions)
82. European EMERGING LIGHTING MARKET, by products 2007 – 2014 (\$millions)
83. Asian EMERGING LIGHTING MARKET, by products 2007 – 2014 (\$millions)

List Of Figures

LIST OF FIGURES

1. Evolution of EMERGING LIGHTING TECHNOLOGIES
2. GLOBAL TRENDS in the lighting market
3. initial cost of installation vs energy consumption of different lighting technologies
4. RELATIVE PERFORMANCE of different lighting technologies
5. Cost vs performance of major lighting technologies
6. PRODUCT LIFECYCLES
7. PRODUCTS positioning of major light sources
8. GLOBAL issues in lighting
9. GLOBAL residential electricity consumption (2009)
10. GLOBAL residential electricity consumption, BY applications (2009)
11. Factors affecting the emerging lighting technologies market
12. GEOGRAPHICAL ANALYSIS OF emerging lighting technologies MARKET (2009)
13. Applications of high-brightness LED
14. Applications of automotive lighting
15. Information density VS color performance
16. GLOBAL EMERGING LIGHTING Technology patents, by Geography
17. GLOBAL EMERGING LIGHTING Technology patents, by PRODUCTS
18. u.s. EMERGING LIGHTING Technology patents, by PRODUCTS
19. EuropeAN EMERGING LIGHTING Technology patents, by PRODUCTS
20. aSIAN EMERGING LIGHTING Technology patents by PRODUCTS

LIST OF FIGURES

1. AMOLED: Active matrix organic light emitting diode
2. OLED: Organic light emitting diode
3. CAGR: Compound annual growth rate
4. CCFL: Cold cathode fluorescent lamp
5. L/w: Lumen per watt
6. CFL: Cathode fluorescent lamps
7. DC: Direct current
8. GaN: Gallium Nitride
9. GE: General Electronics Ltd.
10. GPS: Global positioning system
11. HB LED: high beam light emitting diode
12. IC: Integrated Circuit

13. IT: Information technology
14. LCD: liquid crystal display
15. LED: light emitting diode
16. MB: Mega bytes
17. mm: Millimeter
18. mW: milliwatts
19. PC: Personal Computer
20. PDA: Personal digital assistant
21. PMOLED: Passive matrix organic light emitting diode
22. R&D: Research and development
23. RGB: Red, green and blue
24. ROW: Rest of the World
25. TV: Television
26. U.S: United States
27. UK: United Kingdom
28. UV: Ultra violet
29. V: Volts

I would like to order

Product name: Emerging Lighting Technologies and Global Market (2009-2014)

Product link: <https://marketpublishers.com/r/E4AACDACE13EN.html>

Price: US\$ 5,650.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:

info@marketpublishers.com

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <https://marketpublishers.com/r/E4AACDACE13EN.html>