

# Smart Lighting Markets-2014; V2. Products, Companies and Technologies

<https://marketpublishers.com/r/SEEFEC43276EN.html>

Date: April 2014

Pages: 100

Price: US\$ 3,295.00 (Single User License)

ID: SEEFEC43276EN

## Abstracts

This report is NanoMarkets' latest analysis of the worldwide smart lighting market. Revenues from smart lighting are expected to escalate rapidly in the coming decade, driven primarily by rising energy costs. However, NanoMarkets believes that the biggest wins in the smart lighting business will go to those who can differentiate themselves in the market by offering value-added features and interfaces to other building automation systems.

As it happens, it is becoming increasingly easy to achieve such differentiation. The latest lighting research indicates that smart lighting can also lead to improved health and mood, while newer technology is showing the way to using smart lighting systems for air quality monitoring and even the delivery of information services. At the same time, improved control algorithms will permit the basic lighting management functionality of smart lighting to be performed much more effectively.

With these important developments in mind, this NanoMarkets' report offers guidance on where new smart lighting business revenues will be generated over the next few years and beyond. The report builds on NanoMarkets' previous smart lighting report published in 2012 as well as on our seven-year experience of analyzing the solid-state lighting industry. In this year's report, we have considerably extended the report coverage to include analysis beyond the energy-saving features of smart lighting to other business opportunities that the arrival of smart lighting is creating.

But as with NanoMarkets previous report on smart lighting, this report shows how new value is being created in the lighting market by adding enhanced electronics and intelligent luminaires and how such product strategies will be able to build on the massive trend towards introducing LED lighting. Also included in this new report is an

analysis of the smart lighting strategies of the firms that NanoMarkets expects to see as major players in the smart lighting space. We examine what the prospects for start-ups are in this space. In addition, there is an eight-year market forecast with breakouts by type of product, end user market segment, and the regions/countries where this report will be sold. NanoMarkets believes that this report will provide much needed data and strategic analysis for planners and marketers throughout the lighting, semiconductor, sensor and networking industries.

## Contents

### EXECUTIVE SUMMARY

- E.1 What has Changed Since NanoMarkets' Last Report on Smart Lighting: Two Generations of Smart Lighting
  - E.1.1 No Money from Old Lights: Generation
  - E.1.2 First Generation Smart Lighting: The New PBX?
  - E.1.3 Possibilities for Second Generation Smart Lighting
- E.2 Smart Lighting Systems as a Networking Technology
- E.3 Opportunity Analysis of Smart Lighting by Type of User
- E.4 Some Risks to Consider for Smart Lighting Manufacturers
- E.5 Smart Lighting Systems Marketing Strategies
- E.6 The Making of the Smart Lighting Industry: Firms and Sectors to Watch
  - E.6.1 Smart Lighting Start-Up Strategies
  - E.6.2 Channel and Partnership Factors
- E.7 Summary of Eight-Year Forecast of Smart Lighting Systems

### CHAPTER ONE: INTRODUCTION

- 1.1 Background to this Report
  - 1.1.1 Energy Efficiency: Prime Mover for Smart Lighting
  - 1.1.2 New Functions for Smart Lighting Allow Market Differentiation
  - 1.1.3 Enabling Technologies on the Brink
- 1.2 Objective and Scope of this Report
- 1.3 Methodology of this Report
- 1.4 Plan of this Report

### CHAPTER TWO: SMART LIGHTING SYSTEM PRODUCT AND TECHNOLOGY EVOLUTION

- 2.1 The Shifting Meaning of Smart Lighting
- 2.2 Generation 0 Smart Lighting: Occupancy Sensing and Daylighting
  - 2.2.1 Occupancy Sensing
  - 2.2.2 Daylight Sensing
  - 2.2.3 Time Clocking
  - 2.2.4 Interfaces to Building Automation Systems
- 2.3 Generation 1 Smart Lighting Systems: Smart Ballasts and Beyond
  - 2.3.1 Expansion of Ballast Functionality

- 2.3.2 Intelligent Ballast Suppliers
- 2.4 Generation 1 Smart Lighting Systems: Central Controllers as Early Competitive Battlefield for Smart Lighting
  - 2.4.1 Possible Technology Innovations in Smart Lighting Controllers
  - 2.4.2 Scalability and Modularity Options for Smart Lighting Controllers
  - 2.4.3 Market Specialization
  - 2.4.4 Internet Access and Protocol Openness as a Future Strategy in the Smart Lighting Market
- 2.5 Other Competitive Factors in Today's Smart Lighting Systems
  - 2.5.1 Standard Competitive Factors for Generation 1 Smart Lighting Systems
  - 2.5.2 Broadening the Market Scope of Smart Lighting Systems Management
- 2.6 Generation 2 Smart Lighting Systems: Where Energy Efficiency Meets Health and Mood
  - 2.6.1 Recent Research on the Human Impact of Light and Light Changes
  - 2.6.2 Implications of Current Research for Smart Lighting Systems Opportunities
  - 2.6.3 Color Tuning and the Need for Dynamic Mood and Health Lighting
- 2.7 Generation 3 Lighting Systems: Visible Light Communications
  - 2.7.1 Evolution of Li-Fi Technology
  - 2.7.2 Lighting-Related Applications for VLC/Li-Fi
  - 2.7.3 The Downside of VLC/Li-Fi
- 2.8 Smart Lighting Software
  - 2.8.1 Smart Lighting Systems Software Functionality
  - 2.8.2 Smart Lighting and Clouds
- 2.9 Specialist Chips for the Smart Lighting Industry
  - 2.9.1 Smart Lighting Chips and the Semiconductor Industry
- 2.10 Smart Lighting Sensors
  - 2.10.1 Smart Lighting from the Sensor Manufacturers Perspective
  - 2.10.2 Sensors, Lighting and Nanotechnology
  - 2.10.3 ZigBee and Smart Lighting
  - 2.10.4 EnOcean
- 2.11 Smart Lighting and Smart Grids
  - 2.11.1 Demand Response and Smart Lighting
  - 2.11.2 DALI
  - 2.11.3 Examples of Smart Grid/Smart Lighting Integration
- 2.12 Smart Lighting, Building Automation and Other Standards
  - 2.12.1 Standards for Integration with Building Automation Systems
  - 2.12.2 Other Protocols Worth Considering
- 2.13 A Final Note on Smart Lighting, New Materials and OLEDs
- 2.14 Key Points from this Chapter

## **CHAPTER THREE: SMART LIGHTING SYSTEM MARKET DRIVERS AND OTHER FACTORS SHAPING THE SMART LIGHTING MARKET**

### **3.1 Energy Efficiency: First Mover for Smart Lighting Systems**

#### **3.1.1 Policy and Social Context for Smart Lighting**

#### **3.1.2 How Dimming Issues May Help Promote Smart Lighting Systems**

#### **3.1.3 How Smart Lighting Systems May Enable Luminaire Firms Benefit from Demand for Energy Efficiency**

### **3.2 Consumer Psychology and Smart Lighting Purchases**

#### **3.2.1 Economics and Consumer Choice in Smart Lighting Systems**

### **3.3 Lighting Systems and Aging Populations**

### **3.4 Information Services and the Need for Generation 3 Smart Lighting**

### **3.5 Factors Retarding the Use of Smart Lighting Systems**

#### **3.5.1 Cost and Supply Chain Issues**

#### **3.5.2 Use of Natural Light**

#### **3.5.3 State of the Worldwide Construction Industry: Retrofits and New Construction**

### **3.6 United States Markets for Energy-Efficient Lighting Systems**

#### **3.6.1 Leadership in Energy and Environmental Design (LEED) and Other Related Codes**

#### **3.6.2 Energy Policy Act of 2005**

#### **3.6.3 Energy Independence and Security Act of 2007 (EISA).**

#### **3.6.4 Other Factors**

### **3.7 Japanese Markets for Energy-Efficient Lighting Systems**

#### **3.7.1 Factors Driving Early Markets for LED/Smart Lighting in Japan**

#### **3.7.2 Regulatory and Legal Environment**

### **3.8 Chinese Markets for Energy-Efficient Lighting Systems**

#### **3.8.1 Energy Usage in China: Current and Future**

#### **3.8.2 Phasing out of Traditional Light Bulbs in China**

### **3.9 Korea Markets for Energy-Efficient Lighting Systems**

#### **3.9.1 Impact of Government Energy and Industrial Policy**

### **3.10 Taiwanese Markets for Energy-Efficient Lighting Systems**

### **3.11 Indian Markets for Energy-Efficient Lighting Systems**

### **3.12 Energy-Efficient Lighting Systems Markets in Other Parts of Asia**

### **3.13 European Markets for Energy-Efficient Lighting**

#### **3.13.1 Rules for Phasing Out Incandescent Bulbs in the EU**

#### **3.13.2 Efforts at the National Level**

### **3.14 Key Points from this Chapter**

## **CHAPTER FOUR: MARKETS FOR SMART LIGHTING – AN EIGHT-YEAR MARKET FORECAST**

### **4.1 Methodology of this Forecast**

#### **4.1.1 Addressable Markets**

#### **4.1.2 Matters of Definition**

#### **4.1.3 Data Sources and Assumptions about Market Size and Penetration**

#### **4.1.4 Products Forecast**

#### **4.1.5 Differences From Last Year's Forecasts**

### **4.2 Residential Buildings**

#### **4.2.1 Eight-Year Forecasts of Smart Lighting in Residential Markets**

### **4.3 Commercial and Industrial Buildings**

#### **4.3.1 Eight-Year Forecasts of Smart Lighting in Commercial and Industrial Buildings**

#### **4.3.2 Smart Lighting in Industrial Buildings**

### **4.4 Government and Public Buildings**

### **4.5 Smart Street Lighting and Other Smart Outdoor Lighting**

#### **4.5.1 Street Lighting**

#### **4.5.2 Other Outdoor Lighting**

#### **4.5.3 Eight-Year Forecasts of Smart Lighting in Street Lighting and Other Outdoor Lighting**

### **4.6 Smart Lighting Systems for Automobiles and Other Forms of Transportation**

#### **4.6.1 Eight-Year Forecasts of Smart Lighting in Automobiles and Other Forms of Transportation**

### **4.7 Smart Lighting Systems for Other Applications: Urban Farming and Hospitals**

### **4.8 Summary of Eight-Year Forecasts of Smart Lighting Markets: By Type of Application, Product, and Generation**

### **4.9 Eight-Year Market Forecast of Smart Lighting Systems Revenues by Country and Region**

### **4.10 The Importance of the Retrofit Market for Smart Lighting**

### **4.11 Key Points from this Chapter**

### **Acronyms and Abbreviations Used In this Report**

## About

### ABOUT THE AUTHOR

## List Of Exhibits

### LIST OF EXHIBITS

Exhibit E-1: Smart Lighting Markets – Product Generations and Opportunities

Exhibit E-2: Business Case for the Current Generation of Smart Lighting

Exhibit E-3: Requirements and Opportunities for Smart Lighting Systems, by End User Segment

Exhibit E-4: Eight-Year Forecasts of Smart Lighting Revenues by Application (\$ Millions)

Exhibit 2-1: Smart Lighting Systems Generations

Exhibit 2-2: Design/Technology for Automation Controllers

Exhibit 2-3: Two Scenarios for Smart Lighting Connectivity to the Internet

Exhibit 2-4: Possible Markets for Dynamic Mood and Health Lighting Systems

Exhibit 4-1: Eight-Year Forecasts of Smart Lighting Shipments to Residential Real Estate Markets

Exhibit 4-2: Eight-Year Forecasts of Smart Lighting Shipments to Commercial and Industrial Real Estate Markets

Exhibit 4-3: Eight-Year Forecasts of Smart Lighting Shipments to Government and Public Building Markets

Exhibit 4-4: Eight-Year Forecasts of Smart Lighting Shipments for Streetlights and other Outdoor Lighting Markets

Exhibit 4-5: Eight-Year Forecasts of Smart Lighting Shipments for Transportation Markets

Exhibit 4-6: Eight-Year Forecasts of Smart Lighting Revenues by Application (\$ Millions)

Exhibit 4-7: Eight-Year Forecasts of Smart Lighting Revenues by Product Type (\$ Millions)

Exhibit 4-8: Eight-Year Forecasts of Smart Lighting Revenues by Technology Generation (\$ Millions)

Exhibit 4-9: Eight-Year Forecasts of Smart Lighting Revenues by Geography (\$ Millions)



## I would like to order

Product name: Smart Lighting Markets-2014; V2. Products, Companies and Technologies

Product link: <https://marketpublishers.com/r/SEEFEC43276EN.html>

Price: US\$ 3,295.00 (Single User License / Electronic Delivery)

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

[info@marketpublishers.com](mailto:info@marketpublishers.com)

## Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <https://marketpublishers.com/r/SEEFEC43276EN.html>

To pay by Wire Transfer, please, fill in your contact details in the form below:

First name:  
Last name:  
Email:  
Company:  
Address:  
City:  
Zip code:  
Country:  
Tel:  
Fax:  
Your message:

**\*\*All fields are required**

Customer signature \_\_\_\_\_

Please, note that by ordering from marketpublishers.com you are agreeing to our Terms & Conditions at <https://marketpublishers.com/docs/terms.html>

To place an order via fax simply print this form, fill in the information below and fax the completed form to +44 20 7900 3970