Smart Lighting & LED

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What is Smart Technology?

• Technologies that are capable of adapting automatically and modifying behavior to fit environment. They are also capable of learning, that is using experience to improve performance. Technologies that allow sensors, databases, and wireless access to collaboratively sense, adapt, and provide for users within the environment.

• Smart Devices
  • Phones
  • Tablets
  • Watches
  • Speakers
  • Thermostats
  • Locks
  • Security Camera
What is Smart Lighting?

• A system of lighting fixtures and control components
  • “Smart” due to its ability to offer a variable response according to programmed and sensory input
• Comprised of multiple lighting fixtures connected in a network to provide automatic control of lighting behavior based on user’s needs
• Allows user to easily customize the systems for optimum performance
• Uses networked and software-based intelligence to multiple the energy efficiency benefits of LED-based lighting fixtures
• Smart lighting systems are greener, cheaper, and more flexible than traditional lighting systems, making them the future of lighting
Why Smart Lighting Now?

• Solid-state (LED) lighting is changing how we light the world
  • Successfully displacing traditional illumination sources across every part of the global lighting market.
  • Lighting controls are becoming more sophisticated. LED’s are digital and thus lend themselves to more solid-state control strategies than simple relays and timers.
  • LED fixtures are dimmable, and do not have the restrike issues of HID light sources.

• The bundle of components required to make a light fixture capable of sensing its environment, acting on that information and sharing it with others has dropped in price.
Wireless Smart Lighting

• **Wireless Smart Lighting**
  • All lighting is connected to a network. The flexibility and scalability of the system make it perfect for both new construction and retrofit projects.

• **Removing the Wires**
  • A new generation of lighting control systems reduces cost and eliminates complexity concerns by eliminating dedicated control wiring.

• **Flexibility**
  • Instead of placing controls where wiring permits, controls can be placed where they are needed to improve the lighting system’s performance. As needs change, adjustments can be made at any point, or new devices and control strategies added, simply by reprogramming.

• **Scalability**
  • Once a wireless network is established, that network can grow to cover an ever-expanding area at a low additional cost. Additional sensors, switches and lights require minimal labor and disruption, and these elements utilize the same wireless control system without requiring a new control infrastructure.
Benefits of Smart Lighting

• What are the benefits of a smart lighting system?
  • Smart lighting manages and automates the delivery of the correct amount of light where and when it is needed.
  • Lights can automatically turn on/off or dim at set times or under set conditions, and users gain control over their own lighting levels to provide optimal working conditions. A true wireless lighting control solution automates and simplifies cost- and energy-saving strategies.
  • Smart lighting can extend the life of the lighting fixtures.

• Scheduling
  • Lighting system will only operate during programmed hours. This can be programmed by day of the week.

• Occupancy (Motion Detection)
  • Detect when an area is occupied or unoccupied, and adjust lighting according to the programmed behavior instructions.

• Dimming
  • Lower or raise light levels

• Monitoring
  • Automatically identify and report lamp failures and other lighting and electrical issues on the network
Components of Smart Lighting System

• Centralized Control
  • Site Manager

• Wireless Controls and Sensors
  • Integrated Fixture Controllers
  • Motion Sensors
  • Override Switch

• Software
  • Web Based Application
  • Remote & Local Access
Basketball

Pickleball

Phoenician Resort – Scottsdale, AZ
Long antenna
Short antenna
Both antennas are facing up towards the ceiling and perpendicular to the group and perfectly straight.

Site Manager Controller

LED indicators

Power supply cable
Power supply cable connection
Site Manager Web Application

- Control site remotely with any device with internet access
- Users can manage their own system once commissioned
- Simple-to-use graphic interface
- Comprehensive reporting & diagnostic tools
Self-Healing Mesh Network

- Lights have multiple paths of control and status information to be routed
- If a path is disrupted, there is always another path for the message to travel through
- One site controllers can manage up to 1,000 devices per system
- Range is approximately 1,000 feet with clear line-of-site
• All lights on at 100%
• Courts 4 & 5 on at 100%
• All other courts dimmed to user-determined level
• Courts 1,4,5,7 & Pickleball on at 100%
• All other courts dimmed to user-determined level
• Courts 1,2,4,5,7 & Pickleball on at 100%
• All other courts dimmed to user-determined level
• Courts 2 & 4 are on at 100%
• Court 3 dimmed to user-determined level
Questions?