LED Lighting for: Indoor Sports

Flex Lighting Solutions
Proper lighting on the playing field is essential to make the game enjoyable for athletes and spectators.
Take your Sports Club to the Next Level

Choosing the right lighting is probably the easiest and most effective way to upgrade the appearance of a sports club.

**Increasing Revenue Streams**
The high versatility of our LED lighting solutions can maximize business opportunities in your venue, allowing you to host different sports and events in the same space with the optimal illumination for each one and with the flexibility to adapt to future changes and demands.

**Growing Your Customer Base**
Proud customers and club members are more likely to invite or recommend your venue to friends and family, leading to an increased number of spectators and a higher chance to convert them to customers.

Bright courts with a perfect light coverage and vivid colors will set your club apart from others.
Enhancing the Game Experience for Players and Spectators

- Customize the lighting experience to each event
- Create a unique atmosphere with adjustable lighting and controls
- Optimize visibility for players to follow and interact with fast-moving objects
- Provide lighting levels and uniformity for spectators to see the action clearly
- Improve safety for the crowd with a well-lit venue
Durable and Reliable Lighting with Strong Impact Resistance

Games where objects often fly at ceiling heights can cause damage to light fixtures with minimal impact protection.

The Essentials Series LED fixtures, certified up to IK08 rating, are engineered with a rugged design and durable materials, offering higher impact resistance than normal fixtures.

IK08 Rating: Protected against 5 joules impact. Equivalent to the impact of a 1.7 kg (3.75 lbs) mass, made of steel, with a radius of 25 mm (~1 inch) dropped from 300 mm (11.8 inches) above the impacted surface. In accordance to IEC 62262:2002 and IEC 60068-2-75:1997.
Reduced Power Usage and Heat

Increasing Energy Savings in Lighting

Our highly efficient LED fixtures require less energy than traditional light sources. Additional energy savings can be obtained by adding control systems that detect occupancy and read the ambient lighting, delivering the right amount of light for each situation. Create scenes, define illumination areas and set lighting schedules for increased flexibility and energy savings by illuminating only the courts or areas being used.

Reducing Energy Costs in HVAC

Our LED fixtures generate significantly less heat compared to other lighting sources, reducing the A/C load to provide players and spectators a comfortable sport venue. Ice hockey rinks benefit the most by lowering A/C costs.
Reducing your TOTAL COST OF OWNERSHIP

Think twice before buying the cheapest fixtures you see.
They may come at an unexpected price, ending up costing as much as three times the initial investment versus spending money on high quality LED fixtures.

Conventional light sources are expensive to operate while cheap LEDs will not sustain the advertised efficacy, life and light output you expect, forcing you to buy again after a short period of time.

Example:
100 fixtures

Lower Energy Bills
with higher energy efficiency
Essentials Series 4.0 needs less wattage than similar fixtures to deliver the same light output, increasing energy savings.

Reduced Maintenance
with longer lasting fixtures
LED fixtures made by Flex Lighting Solutions have a longer life span than conventional fixtures and most competitor LEDs, helping you reduce maintenance costs and time spent replacing lamps, ballasts and drivers.

TOTAL COST OF OWNERSHIP OVER 10 YEARS (16/7)

HID 1080W VS. Essentials Series 4.0 358W

Energy cost: $0.10/kWh. 16/7 usage. HID (life: 20Khrs, lamp: $12, ballast: $40). Labor: $80/hr

69% lower cost of ownership
$421K energy savings
Games without Delays or Interruptions

Instant-On Lighting

A brief power outage for a facility with metal halide lighting can delay a game up to 30 minutes before the lights cool down and can turn back on (restrike time), plus an additional time for the lamps to reach their full brightness. This can introduce delays and cause cancellations by the end of the day, which negatively impacts revenue and customer experience.

<table>
<thead>
<tr>
<th>Lighting Type</th>
<th>Warm-Up Time (minutes)</th>
<th>Restrike Time* (minutes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quartz Metal Halide (with probe start)</td>
<td>2 - 15</td>
<td>5 - 20</td>
</tr>
<tr>
<td>Quartz Metal Halide (with pulse start)</td>
<td>1 - 4</td>
<td>2 - 8</td>
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<tr>
<td>Ceramic Metal Halide (with pulse start)</td>
<td>2 - 3</td>
<td>10 - 30</td>
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<tr>
<td><strong>Flex LED Fixtures</strong></td>
<td><strong>Instant</strong></td>
<td><strong>Instant</strong></td>
</tr>
</tbody>
</table>

Source: Lighting Research Center (Rensselaer Polytechnic Institute)

*Restrike time varies with the degree of ventilation built into the fixture, ambient temperature, and draft conditions.

The instant-on feature of Flex LED fixtures provide full brightness instantly after a power outage.
Improved Visibility for Players and Fans

The Best Color Temperature for Each Game

The right color temperature improves visibility, concentration and aesthetics, helping players perform better and spectators enjoy the game.

Sports played on turf and blue surfaces are better enjoyed under cool white lighting (5000K). Swimming pools and ice rinks also require cool white to look crisp and clean. Sports played on wooden surfaces, such as basketball, will look best under slightly warmer CCTs (4000K).

Lighting that Enhances Picture and Video Quality

How the sports club is perceived depends on how good or bad it looks in person but also in pictures and videos.

When a proud parent with a phone or a local television station is recording the event, lighting plays a key role in the quality of pictures and videos.

Our LED fixtures deliver bright levels with high uniformity, allowing cameras to capture vivid colors, crisp images, and fast movements. Unlike traditional lights, our LED fixtures are flicker-free, allowing to capture every single moment of the action with detail, even in slow motion.

Rich Colors and High Contrast

Our LED fixtures reproduce rich colors with high accuracy and contrast, featuring a Color Rendering Index (CRI) of 80+ as standard, with CRI 90+ and TLCI 90+ as options.

TLCI: Television Lighting Consistency Index. Max. score = 100

Sports rely on colors and contrasts to differentiate teams, define playing areas and improve visibility of balls and scoring targets.
Recomendated Products

Essentials Series 4.0
LED High Bay with the Highest Performance and Life

Aluminum Heatsinks and Wireway
Lightweight, durable and designed for maximum heat evacuation, allowing ambient temperatures up to 65°C.

Wireless Controls
Integrated EnOcean Module available as an option.

Rotatable Outer Modules
To optimize the light distribution.

Dimmable Driver

Model 6M
6 LED Modules, Long Frame

Lumen Range
43,000 lm to 73,000 lm

High Efficacy
up to 168LPW

Ultra-Long Life
L70 at 309,000 hours

Impact Resistant
IK08

- PATENTS PENDING -

Dust Resistant and Wet Location Rated
Available as options.

Knockout for Integrated Sensors
Occupancy and Ambient Light Detection.

Indirect Lighting Option
180° inverted LED modules for indirect lighting.

Optional Wire Guards
Heavy-Duty steel, painted white.

Mounting Options
- Surface Mount
- Hook and Loop
- Hanger
- Rigid Stem
- Plate Mount

Other Recommended Models (same features as above)

Model 6MS
21,000 lm to 41,000 lm

Model 4M
31,000 lm to 54,000 lm

Model 4MS
13,000 lm to 27,000 lm
Recommended Products

**HT1 Series**
High Output Recessed Troffer

**Model 2x4**
2ft x 4ft

- **Lumen Range**
  12,000 lm to 24,000 lm

- **High Efficacy**
  up to 151LPW

- **Ultra-Long Life**
  L70 at 278,000 hours

- **Wireless Controls**
  Integrated EnOcean Module available as an option.

- **Dimmable Driver**

- **Recessed Mounting**
  Suitable for acoustical tile or drywall ceilings over 20 feet tall.

- **Frosted Acrylic Diffuser**
  Distributes light uniformly with minimal glare.

**Recommended Applications for HT1 Series**
Indoor courts and training spaces with mid-height ceilings (18 to 25 ft.) where high uniformity and low glare is important.

- Squash / Racketball
- Gym / Fitness
- School / Multi-Purpose
Each sport has different lighting requirements based on characteristics of the game: pace, precision, ball size, goals, number of spectators...

IES classifies sports facilities in four groups based on the players’ skill level and the anticipated number of spectators.

Facilities should be designed to satisfy the most talented players and accommodate their greatest potential spectator capacity.

In large facilities which seat over 10,000 spectators, the lighting criteria are usually governed by the needs of television. Recommendations for such facilities are not included here.
BASKETBALL

In basketball, viewers see the ball and players from multiple positions and viewing angles. Top design considerations are 1) Great vertical illuminance over the entire playing area, and 2) Uniform horizontal illuminance on the playing floor. Depending on the class of play, fixtures are positioned either on the perimeter of the court (large arenas) or over the court (high school, community centers, smaller courts). Our fixtures with rotatable modules and frosted lens are designed to throw light wider to cover more area, providing greater uniformity and reduced glare.

IES Illuminance Recommendations
Minimum requirements in footcandles

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<th>Class</th>
<th>Horizontal Target (Eh)</th>
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Source: IES RP-6-15 Sports and Recreational Area Lighting.
Project: When Trevor Miller started his job as facilities director at Santa Cruz City Schools, one of the first issues he noticed were the 2x4 fluorescent fixtures in the Santa Cruz School gyms. The lighting was terrible, he said. “I’m guessing there were only about 20 to 25 footcandles.

Challenge: Santa Cruz City Schools suffers from a lack of resources for deferred maintenance. Since the last retrofit, 10 to 20% of the lamps had failed or needed to be replaced. “I made it my mission to get the lights replaced, but given our budget constraints, it seemed highly unlikely that whole gym light replacements were going to happen,” - Miller.

Solution: Miller discovered the Prop 39 energy grant, which funnels extra tax revenue towards energy efficiency projects. In concert with a second initiative, Prop 98, he found a great funding source to make the gym lighting happen. “I got connected with AMBAG, which works with PG&E; they did our energy surveys and analysis and got us on the right track” Miller said. The district installed 189 Essentials Series LED High Bays, which Miller chose based on recommendations from his peers and Campbell, special projects associate at AMBAG.

Key Results

$14,655 annual energy savings

73,326 kWh Total estimated annual energy savings

Estimated annual kWh saved per school

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<thead>
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<th>School</th>
<th>Annual kWh</th>
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<tr>
<td>Harbor High School</td>
<td>15,145</td>
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<tr>
<td>Soquel High School</td>
<td>22,549</td>
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<tr>
<td>Mission Middle School</td>
<td>16,552</td>
</tr>
<tr>
<td>Branciforte Middle School</td>
<td>5,077</td>
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</tbody>
</table>

It’s beautiful lighting that’s perfect for the application. We are greatly reducing our maintenance costs and it’s all being paid for without a dollar coming out of the district’s pocket."

Trevor Miller
Facilities Director Santa Cruz City Schools
Company: University of Missouri (UMSL)
Partner: CannonDesign Lighting Studio
Location: St. Louis, MO
Building: Gymnasium with 3 basket courts

Project: This 101,000-square-foot facility includes a three-court gymnasium (including a one-court MAC), a recreation pool, an expansive weight and fitness areas, and four group exercise rooms.

Challenge: The students at UMSL wanted this new Student Recreation and Wellness Center (RWC), to allow them to workout in a more light-filled environment. “The building’s design concept features the activity in the space and we wanted the lighting to support that mood and atmosphere,” says Sara Schonour, CannonDesign associate vice president, which provided integrated architecture, engineering and lighting services in this project.

Solution: In the main gyms, instead of uniformly lining up long rows of 2 by 4 fixtures or creating an array, CannonDesign outlined dashes of light to help reflect the activity in the space, mixing longer and shorter Essentials Series fixtures for a dynamic look. In addition to the anti-glare benefits, these fixtures are more energy efficient, can be controlled and actively dimmed depending upon the available natural light and for different uses.

Key Results

$18,000 annual savings (energy and maintenance)

12,500 kWh annual energy savings

“The use of LED lighting contributed to the building’s LEED certification and was all about energy conservation. It’s cutting edge, lowers our energy use and offers a high lifespan, which helps with the budget all around.”

Yvette Kell - Director of Campus Recreation
INDOOR TENNIS COURTS

In tennis, the playing object approaches players at extremely fast speeds, where players have only a split second to see it. Top design considerations include: 1) Quantity and quality of light, 2) Uniformity, direct glare and reflected glare. High average illuminance and near 1 to 1 uniformity ratios are required for great lighting on tennis courts. Fixtures are positioned around the perimeter of the courts and most often indirect lighting strategies are employed to reduce direct glare and reflected glare. With the INDR option, our fixtures can be installed with the modules pointing up, throwing all of the light into the ceiling space while providing easy access from below for maintenance.

IES Illuminance Recommendations
Minimum requirements in footcandles

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Source: IES RP-6-15 Sports and Recreational Area Lighting.
Project: Lochmoor Club sought to reduce utility costs and to improve the light distribution and quality of their lighting on their four indoor tennis courts, with a total of 11,200 sq. ft., to be properly illuminated for their members and tennis pros.

Challenge: Lochmoor Club’s board of directors identified their indoor tennis courts as a large source of their monthly energy expense and were searching for a solution that reduce energy costs at their facility. “As we looked at our utility bills, it became obvious that we needed to upgrade to LED lights to get some cost savings in that arena” shared Tom Hauff, General Mgr. of Lochmoor Club.

Solution: The club replaced one to one, 1000W metal halide fixtures with 58 Essentials Series LED high bays (236W) featuring a color temperature of 5000K and a wide optical distribution. “The reason we selected Flex was because they had the superior LED high bay for Lochmoor’s application”, explained Michael Abraham, Jr., Co-Founder and President of Future Energy Group.

Key Results

- **$35,000** total savings/year
- **1.1 years** Return of investment
- **78%** savings
- **62.6 kW** HID
- **13.6 kW** Flex

“...You get a much even coverage on the courts then what you did before. The difference is night and day. It’s a huge difference. That is what the tennis pro’s had expressed. They were thrilled we gained evenness of light all around the court – from baseline to baseline.”

Tom Hauff
General Manager of Lochmoor Club
**Courts Plus** Doubles Light Levels at Tennis Courts, Reduces Energy by 60%

**Company:** Courts Plus  
**Partner:** Wesco Distribution  
**Location:** Elmhurst, IL  
**Building:** Indoor Tennis Courts

**Project:** Courts Plus is a 90,000 sq.ft. community facility, owned and operated by the Elmhurst Park District in Elmhurst, IL. The two-floor facility operates 19 hours a day, 362-days a year.

**Challenge:** Their six tennis courts take up about 40,000 sq. ft. of the total building and contribute about a third of the facilities energy costs. Greg Utaski, Division Manager of Enterprise Services for the Elmhurst Park District, researched LED fixtures from various manufacturers and visited many similar recreational facilities in search of the right LEDs, but came up empty. Manufacturers were proposing to install two fixtures for every metal halide, a total of 144 fixtures, a prohibitive cost for Courts Plus.

**Solution:** Utaski partnered with Wesco Distribution on the project, and they recommended to use Flex Lighting Solutions. The Flex lighting plan required fewer fixtures, not more as he was told previously by other manufacturers, and was significantly below the cost Utaski originally estimated. After a successful test of the Flex lighting in the facility, 72 1,000-watt metal halide fixtures were replaced with 62 Essentials Series 3.2 6M, cutting wattage in half. The new LED fixtures provided 70 fc, more than double the previous light levels. Wesco used the INDR option, flipping the fixture over to obtain the best light uniformity and lowest glare.

**Key Results**

- **$30,000** energy rebate  
- **$20,000** energy savings/year  
- **$5,000** maintenance savings/year

"Everyone who sees it loves it. It's really clean and bright. We now have a tennis facility on par with most high-end facilities."

Greg Utaski - Division Manager

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<thead>
<tr>
<th></th>
<th>HID</th>
<th>Flex</th>
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<tr>
<td>2x brighter</td>
<td>35 fc</td>
<td>70 fc</td>
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<tr>
<td>60% savings</td>
<td>77,760 W</td>
<td>31,000 W</td>
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Flex Lighting Solutions
ICE HOCKEY

In ice hockey, viewers see the playing object from multiple positions while generally looking down toward the ground. Minimizing Glare, whether Direct Glare or Reflected Glare is the top consideration of the lighting design. Because the ice is a highly reflective surface, light coming from the fixtures can cause disabling glare in players eyes preventing them from seeing the puck. Uniformity is also important as shadows can cause high contrast ratios, preventing spectators from seeing the game. Flex Lighting Solutions’ LED fixtures with frosted lens reduces glare and provides a symmetrical distribution of light to achieve quality uniformity throughout.

IES Illuminance Recommendations
Minimum requirements in footcandles

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Source: IES RP-6-15 Sports and Recreational Area Lighting.
Northern Colorado Ice Center Brightens Rink and Reduces Operating Costs

Company: Northern Colorado Ice Center  
Partner: Ally Energy Solutions  
Location: Fort Collins, CO  
Building: Ice Hockey Rink

**Project:** NHL-sized ice hockey rink run by the nonprofit Northern Colorado Youth Hockey organization, serving 550 youth hockey players and 300 adult hockey players year round. The rink has seating for 1,000 spectators, and opens from 6 am to 1 am seven days a week.

**Challenge:** The facility continuously had problems with its metal halide lighting, which was draining the nonprofit’s budget. Every time a light went out, rink manager Chris Brodzinski had to rent a lift. He also had to find a parent who was an electrician to rewire ballasts – a move to save money since the rink is owned by a nonprofit - or hire an electrician to do the job. He also had to cancel ice time if the rink was rented. Since the rink is used 20 hours a day all year round by more than 850 hockey players, the lost revenue was meaningful.

**Solution:** Replaced 32 400W metal halide lights with Flex Lighting Solutions Essentials Series High Bay LEDs of 244W allowing them to brighten the facility while lowering operating costs.

**Key Results**

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<th>Flex</th>
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<tbody>
<tr>
<td><strong>2.4x brighter</strong></td>
<td>27~32 fc</td>
<td>67~79 fc</td>
</tr>
<tr>
<td><strong>46% savings</strong></td>
<td>14,720 W</td>
<td>7,808 W</td>
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At $12,000 total savings/year, the new LEDs reduced the heat on the ice surface, which in turn further reduced the energy spent running the rink’s two compressors to cool the ice.

“I’ve told them (the Rocky Mountain Rink Association) that these LEDs will change the dynamics of their hockey, will draw more people in and it will lower their energy costs. It’s really a no brainer.”

Chris Brodzinski - NoCo Rink Manager and Member of the Rocky Mountain Rink Association
West Vancouver Ice Arena Upgrades to LED, Doubles Light Levels with 66% Energy Savings

Company: West Vancouver Ice Arena  
Partner: CNJ Lighting Solutions  
Location: West Vancouver, BC, Canada  
Building: Ice Hockey Rink

Project: The West Vancouver Ice Arena is a 22,100 square feet facility that operates year-round, hosting a variety of activities, including large events such as fundraisers, exhibitions and trade shows during the Spring/Summer, and hockey/skating parties, games and competitions during Fall/Winter.

Challenge: The West Vancouver Ice Arena was poorly lit with a foot candle reading below 25fc. The traditional light source had diminished to below acceptable standards. In addition, their energy consumption per year was 98,790 kwh. The City of West Vancouver was looking to replace their existing fixtures for an affordable LED solution that emphasized hydro savings and lighting quality.

Solution: Through an energy audit performed by CNJ Lighting Solutions and consideration of several LED lighting manufacturers, the City of West Vancouver selected Flex Lighting Solutions to retrofit its 22,100 sq. ft. ice arena. They replaced a total of 40 400W Metal Halide lamps one-for-one with 40 Essentials Series 6MS.

“...The Essentials Series by Flex Lighting Solutions is an incredible improvement over our old lighting system. The electrical savings have already been seen and we expect to see even further savings during the off season when we have the capability to turn the lights on and off at our leisure.”

David McKee  
West Vancouver Energy Manager

Key Results

- **2x brighter**
  - HID: 25 fc
  - Flex: 50 fc

- **66% savings**
  - HID: 98,790 W
  - Flex: 33,486 W

The Essentials Series by Flex Lighting Solutions is an incredible improvement over our old lighting system. The electrical savings have already been seen and we expect to see even further savings during the off season when we have the capability to turn the lights on and off at our leisure.”

David McKee  
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Key Results

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David McKee  
West Vancouver Energy Manager
INDOOR FOOTBALL FIELDS

In football, the number one consideration in lighting design is uniformity. All areas of the field including the end zones must be evenly lit. Fixture positions are generally in a grid formation over the field and spaced evenly along the length and width of the field. The Essentials Series 4.0 LED fixtures with clear lens and wide distributions delivers maximum light levels while minimizing shadowing and dark spots.

IES Illuminance Recommendations
Minimum requirements in footcandles

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Source: IES RP-6-15 Sports and Recreational Area Lighting.
**Washington Redskins Lights Up New Training Facility with Flex LED Fixtures**

**Company:** Washington Redskins  
**Partner:** Arizon Building Systems  
**Location:** Virginia, USA  
**Building:** Training Facility, 100,800 sq ft

**Project:** Arizon was tasked to design, manufacture, and install the Washington Redskins practice facility on time for the Redskins mandatory 3-day mini-camp in June, which included a new LED lighting installation to replace 112 inefficient 1000W HID fixtures.

**Challenge:** High efficacy was a top priority as well as bright lighting levels with high uniformity and low glare. Lumen to weight ratio was a big challenge as typical sport lighting fixtures are too heavy for the fabric dome structure or they do not deliver enough light output.

**Solution:** To obtain the highest uniformity with the lowest glare when players look up, a total of 112 Essentials Series LED fixtures were installed upside down, layed out in two rows with the 6M model down the middle and two other rows with the 4M model along each side.

**Key Results**

- **$415,700** total savings in 10 years
- **$81,760** maintenance savings in 10 years
- **58%** savings
  
<table>
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<tr>
<th>HID</th>
<th>120,960 W</th>
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<tr>
<td>Flex</td>
<td>50,176 W</td>
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INDOOR BASEBALL

Quantity of light and light direction is key when designing a lighting system for baseball applications. When a baseball is thrown, it can reach speeds up to 105 mph (169 km/hr). While in flight, spectators and players can lose sight of the ball due to glare from fixture viewing angles or low contrast between the ball and playing field. For indoor baseball, fixture durability is also a key consideration. With extruded aluminum light modules and shatter-free polycarbonate lens, the Essentials Series 4.0 will continue to light regardless of the impact sustained by a wild pitch or a foul ball.

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Minimum requirements in footcandles

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Source: IES RP-6-15 Sports and Recreational Area Lighting.
Company: Louisville Slugger
Partner: Arizon Building Systems
Location: Peoria, IL
Building: Multi-Sport Complex, 120,800 sq ft

Project: The Louisville Slugger Dome is an air-filled facility with a very large skylight. The privately-held facility is expected to attract some 250,000 visitors and host 11,000 youth sports games annually including baseball, softball, soccer and volleyball.

Challenge: Because the dome is fabric and inflated with air, the fixtures needed to be lightweight, no more than 30 pounds, and provide even levels of light throughout the structure. Louisville Slugger Dome houses two full-sized baseball or softball fields, soccer fields and volleyball courts, where balls of many sizes are constantly flying and frequently striking the dome’s fabric. “The fixtures also needed to be very durable because they need to take strikes from balls” said D. Fenton, Arizon salesman.

Solution: Arizon installed 150 Essentials Series 3.2 Performance Line 6M. These LED High Bays weigh just 24 pounds, which met the company’s weight requirements. They are highly durable, resist impacts and offer a consistent light output over many years, which lowers maintenance costs. The energy needed to power these LED lights is about 80% less than the equivalent traditional lighting.

“We are really happy with the lighting. No one else in the region has a facility lit like ours. We hear every day from teams about the amount of light and how much brighter it is..., it’s almost like night and day compared to the other facilities we’ve visited.”

Joe Bolen
Tournaments and Operations Director
INDOOR SOCCER

The number one consideration in lighting design for soccer is uniformity. All areas of the field including the goals must be evenly lit. Fixture positions are generally in a grid formation over the field and spaced evenly along the length and width of the field. The Essentials Series 4.0 fixtures with clear lens and wide distributions delivers maximum light levels while minimizing shadowing and dark spots.

IES Illuminance Recommendations
Minimum requirements in footcandles

<table>
<thead>
<tr>
<th>Class</th>
<th>Horizontal Target ($E_h$)</th>
<th>Vertical Target ($E_v$)</th>
<th>Uniformity Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>150</td>
<td>50</td>
<td>2:1</td>
</tr>
<tr>
<td>II</td>
<td>100</td>
<td>30</td>
<td>2.5:1</td>
</tr>
<tr>
<td>III</td>
<td>75</td>
<td>10</td>
<td>3:1</td>
</tr>
<tr>
<td>IV</td>
<td>50</td>
<td>5</td>
<td>4:1</td>
</tr>
</tbody>
</table>

Source: IES RP-6-15 Sports and Recreational Area Lighting.
Santa Clarita Soccer Center Improves Players’ Game Experience with LEDs

Company: Santa Clarita Soccer Center  
Location: Valencia, CA  
Building: Indoor Soccer Complex

Project: Santa Clarita Soccer Center, a 24,656 sq.ft. complex, features a full-sized indoor soccer field, similar in size to a hockey rink, which is where the adult leagues play their games. In addition, the center has a smaller field for youth programs as well as fast-paced 3-on-3 adult soccer.

Challenge: The priority for the soccer center was not only to save on annual cost and energy, but to better illuminate the fields and avoid shadows and glare to prevent impairing the players’ vision when chasing soccer balls.

Solution: Santa Clarita Soccer Center selected Flex Lighting Solutions 54 Essentials Series LED high bays to replace its existing 400W metal fixtures due to their requirements of energy efficiency, low glare, low maintenance and impact resistance.

“...We were impressed with the quality of light, low glare and lack of shadows on the field.”
Scott Schauer  
Owner of Santa Clarita Soccer Center

Key Results

- **$7,500** annual energy savings
- **64%** savings

<table>
<thead>
<tr>
<th>HID</th>
<th>16,560 W</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flex</td>
<td>5,984 W</td>
</tr>
</tbody>
</table>
Big League Dreams chooses Flex for Energy Savings and Impact Resistance

Company: Big League Dreams
Location: Chino Hills, CA
Building: Indoor Soccer Complex

Project: Big League Dreams sports parks have been recognized as the “Best Sports Complex in America” by the Sports Complex Owners and Developers Association. They offer indoor soccer leagues in a 20,000 sq. ft. indoor pavilion for both youth and adults, as well as hosting softball tournaments and a multitude of special events.

Challenge: It was important not only to save on annual energy and costs, but to have durable fixtures that can handle being hit by soccer balls.

Solution: Big League Dreams selected Flex Lighting Solutions to replace their existing 1000W metal halide fixtures with 26 Essentials Series LED high bays to meet their requirements of energy efficiency, light levels, glare reduction and impact resistance.

Key Results

<table>
<thead>
<tr>
<th>Description</th>
<th>Power Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>HID</td>
<td>28,080 W</td>
</tr>
<tr>
<td>Flex</td>
<td>6,708 W</td>
</tr>
</tbody>
</table>

74% savings
In volleyball, viewers see the ball and players from multiple positions and viewing angles. Top design considerations are 1) Great vertical illuminance over the entire playing area, and 2) Uniform horizontal illuminance on the playing floor. Flex Lighting Solutions’ fixtures with rotatable modules and frosted lens are designed to throw light wider to cover more area, providing greater uniformity and reduced glare.

### IES Illuminance Recommendations
Minimum requirements in footcandles

<table>
<thead>
<tr>
<th>Class</th>
<th>Horizontal Target ($E_h$)</th>
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</tr>
<tr>
<td>IV</td>
<td>20</td>
<td>5</td>
<td>4:1</td>
</tr>
</tbody>
</table>

Source: IES RP-6-15 Sports and Recreational Area Lighting.
Other Indoor Sport Facilities

Flex Lighting Solutions LED fixtures feature a rugged design with excellent quality of light and high lumen output, making them perfect for most athletic applications in indoor facilities.
Flex Lighting Solutions is a global manufacturer of innovative, reliable and high-performance LED fixtures for industrial and commercial applications. We help businesses and property managers lower their utility bills, meet energy efficiency targets and reduce their total cost of ownership.

### Pre-Sales Support
- Design Consulting
- Field Survey Analysis
- Project Design / Fixture Layout
- Specials / Custom Products
- Business Case / ROI Calculation

### Post-Sales Support
- Helpdesk
- Field Installation Support
- L70 Replacement Warranty
- Fixture Repair Support
- Spare Parts Access

### Why Flex Lighting Solutions?

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Best Thermal Management</strong></td>
<td>Our LED luminaries are designed to perform at higher ambient temperatures than others.</td>
</tr>
<tr>
<td><strong>Superior Lumen Maintenance</strong></td>
<td>Our LED fixtures maintain higher lighting levels over time than other LED products.</td>
</tr>
<tr>
<td><strong>Lowest Total Cost of Ownership</strong></td>
<td>We provide the best combination of cost, efficacy and life for your lowest total cost of ownership.</td>
</tr>
<tr>
<td><strong>Warranty Replacement</strong></td>
<td>We stand behind the quality and performance of our products with an up to 10-year warranty.</td>
</tr>
<tr>
<td><strong>Responsive Customer Support</strong></td>
<td>Our inside sales and technical support teams are experienced to solve all your lighting needs.</td>
</tr>
<tr>
<td><strong>QuickShip Program</strong></td>
<td>Access to our fastest-moving fixtures. We guarantee your order will ship in 2 business days.</td>
</tr>
</tbody>
</table>