TPK®

STADIUM LIGHT
COLLECTION

2025

CORPORATE VALUES

TPK OPTOELECTRONIC TECH CO.,LTD

Toward consumers rigidly

Long-term and resolute fulfillment of the needs and standards Of the niche market's end users.

Perform higher constantly

Continuously hold oneself to higher standards of skill and productivity and strive for improvement.

Keep revolution always

Lifelong learning,continuous innovation, perseverance,

TPK OPTOELECTRONIC TECH CO.,LTD, is located in Dongfeng town, Zhongshan city, Guangdong province, which is in the central position among Guangzhou (Baiyun airport), Shenzhen (Bao'an airport) and Zhuhai (Jinwan airport),close to Guangzhu West Highway (Dongfu Exit) and Guangzhu railway station / Xiaolan station, with very convenient transportation. We have nearly 10,000 square meters of the building area, included office, exhibition hall, workshops and dormitories…etc.

Since the founding of international sales department in 2002 and the establishment of the manufacturing center in 2005, TPK is always devoting to the development, manufacturing and application of LED products, and provides valueadded
services for the customers. Every year we extract 5% of total annual amount to improve and develop products with much higher quality. At present, we already have kinds of related design patents for our products and have applied ETL CCC, CE, RoHS certificates. Besides, we have adopted ERP system, CRM system, ISO quality system to achieve comprehensive information offices and help to improve the management efficiency in our company, which is enable us to respond quickly and accurately to customers, meet customers' individual needs and promote customer satisfactions. In 2018, we also obtained the enterprise qualification certificate and safety production license in the construction industry.We own a team of sincere unity, diligent study and hard-working. Meanwhile, we adhere to the philosophy of "altruism,evalution and inheritance". From research and development to production, from logistics to whole solutions, TPK team is always supporting and helping our customers at any time. In the past twenty years, we have developing steadily and keeping the policy of quality first, provide services to more than 50 countries and regions in the world consistently. Our professional knowledge, prudent attitude and perfection to details earn high praises from our customers. We are proud of the TPK brand and convinced that it will be your trustworthy and reliable partner as well as friend.

CUTTING-EDGE OPTIC TECHNOLOGY

LIGHT WHERE IT MATTERS

ELEVATE THE EXPERIENCE

The relationship between sports venues and lighting is one of mutual dependence and precise alignment. Professional lighting is not only a fundamental prerequisite for hosting events, but also, through well-designed illuminance levels and uniformity, accurate color rendering, and effective glare control, provides athletes with a clear and safe visual environment that supports fair competition and accurate officiating, while creating a comfortable and immersive viewing experience for spectators.

At the same time, it must meet the stringent technical requirements of broadcast production—especially 4K/8K ultra-high-definition coverage—in terms of vertical illuminance, flicker control, and color temperature stability.

CRI 70

Maximise Efficiency

Optimised for large-scale infrastructure, industrial sites and multi-use sports grounds, it ensures reliable illumination while keeping efficiency at its peak.

CRI 80

The Perfect Balance

CRI 80 is the go-to for spaces that demand both function and visual comfort, ideal for ports, logistics hubs and professional sports stadiums.

CRI 90

High Visual Impact

For environments where every detail counts, CRI 90 provides exceptional colour accuracy and clarity. It is perfect for televised arenas, premium sports venues and safety-critical zones.

Definitions of Technical Terms:

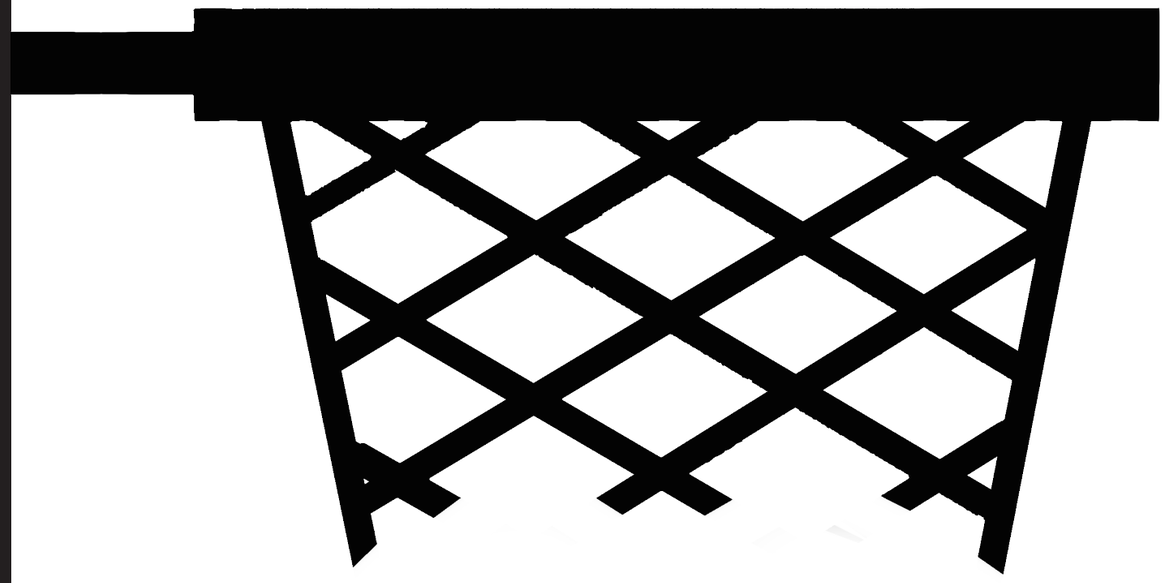
Here's a clean, professional U.S. English version of your table:

Parameter	Description & Function	Typical Reference Values
Vertical illuminance (Ev)	Ensures that cameras can capture bright, clear images of athletes from any direction; it is the most critical metric for broadcast lighting.	Main (primary) camera direction: ≥ 2000 lux; secondary camera directions: ≥ 1400 lux (may be higher depending on the event level).
Color Rendering Index (Ra / R9)	Indicates the light source's ability to render object colors faithfully. A high CRI ensures vivid, natural color reproduction on TV.	Ra ≥ 90; R9 (strong red rendering) > 50. The TLCI (Television Lighting Consistency Index) is often used directly, typically TLCI ≥ 85.
Correlated Color Temperature (CCT)	Affects the overall tone and atmosphere of the image; must be consistent across the entire field and matched to the broadcast camera white balance.	5500 K–6000 K (daylight white), with color temperature variation across the field kept within a tight band (e.g., ±500 K).
Uniformity	Horizontal uniformity (Uh): ensures consistent brightness across the playing surface. Vertical uniformity (U1min/Emax, U2min/Emax): prevents bright/dark patches in the camera image.	Horizontal uniformity Uh ≥ 0.7; vertical uniformity U1 ≥ 0.6, U2 ≥ 0.8 (specific values may vary by sport and camera direction).
Optical distribution & glare control	Through precise optical distribution, use of visors/shields, and strict control of luminaire aiming angles and mounting positions, direct and reflected glare impacting athletes and cameras is minimized as much as possible.	Glare rating GR ≤ 50 for international competitions, ≤ 40 for top-tier broadcast events. Luminaires should be full-cutoff types to prevent spill light and sky glow.
Flicker & stability	Eliminates flicker artifacts caused by current fluctuations in the light source, which is critical for high-speed, super-slow-motion replays.	Flicker percentage ≤ 0.3% for ultra-high-definition high-speed cameras.

Core Performance Indicators for Sports Lighting

Sports lighting standards (U.S.): ANSI/IES RP-28 (indoor sports lighting), ANSI/IES RP-30 (outdoor sports lighting).

Type of Event	Horizontal Average Illuminance	Vertical Illuminance	Horizontal Uniformity	Vertical Uniformity	Color Rendering Index	Flicker Ratio	Illuminance Gradient	Glare Control
Soccer (FIFA A-level)	≥ 2000 lx	≥ 1600 lx	$U_o \geq 0.7$	$U_l \geq 0.6$	Ra ≥ 90 or R9 ≥ 45	≤ 1%	MAUR ≥ 0.6	GR ≤ 50
Basketball (NBA)	2475–2906 lx	≥ 1560 lx	$U_o \geq 0.7$	$U_l \geq 0.6$	CRI ≥ 70–90	≤ 1%	MAUR ≥ 0.6	UGR ≤ 22
Baseball (MLB)	≥ 1076 lx (infield) / ≥ 753 lx (outfield)	≥ 1500 lx (infield)	$U_o \geq 0.7$	$U_l \geq 0.6$	Ra > 80	≤ 1%	MAUR ≥ 0.6	GR ≤ 50
Tennis (WTA / US Open)	≥ 2000 lx	≥ 1600 lx	$U_o \geq 0.7$	$U_l \geq 0.6$	Ra > 90	≤ 1%	MAUR ≥ 0.6	GR ≤ 50
Ice Hockey (NHL)	≥ 2152 lx	≥ 1614 lx	$U_o \geq 0.7$	$U_l \geq 0.6$	CRI ≥ 70–90	≤ 1%	MAUR ≥ 0.6	GR ≤ 50
American Football (NFL)	≥ 2690 lx	≥ 2152 lx	$U_o \geq 0.7$	$U_l \geq 0.6$	CRI ≥ 70–90	< 0.3%	MAUR ≥ 0.6	GR ≤ 50
Cricket (ICC)	≥ 1500 lx	≥ 1000 lx	$U_o \geq 0.7$	$U_l \geq 0.6$	Ra > 80	≤ 1%	MAUR ≥ 0.6	GR ≤ 50



Lighting Control Requirements

For premier sports venues, the lighting control system must be both professional and highly reliable. It should support one-touch, seamless switching between multiple preset scenes—at minimum Game, Broadcast, Warm-up/Training, Halftime Show/Entertainment, Cleaning and Emergency modes. The architecture should be open and interoperable, compatible with DALI, DMX512, KNX, 0–10 V dimming and IP-based protocols such as sACN and Art-Net, so it can integrate with broadcast, scoring and building-management systems. In terms of reliability, the system should use redundant, hot-standby controllers and networks, dual power feeds with automatic transfer, and UPS and/or generator backup, with centralized monitoring of each luminaire's status, temperature and power consumption to support alarms and preventive maintenance.

Scenario Cases

Application Scenario Cases

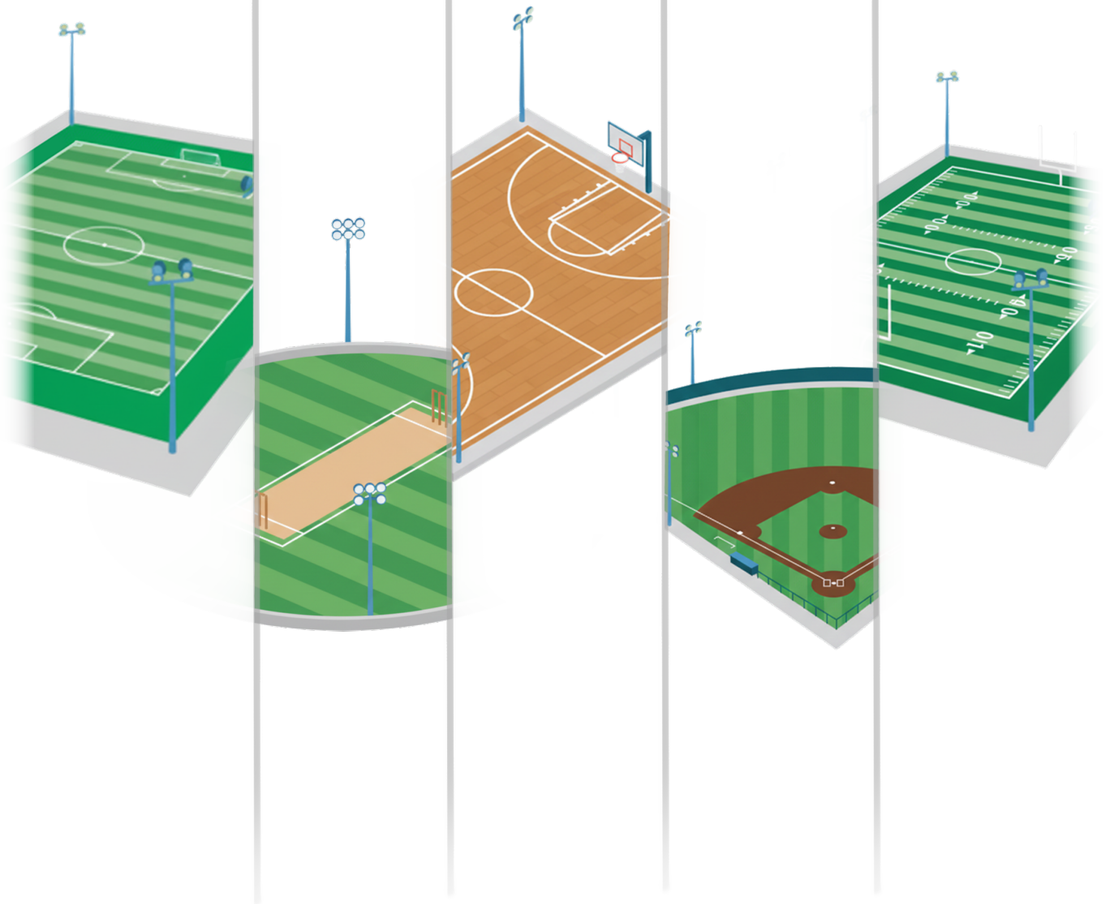
01 Football Stadium

02 Cricket Ground

03 Basketball Court

04 Baseball Stadium

05 Rugby Field



01

Football Stadium

As a venue for high-intensity, fast-paced team sports, football stadiums demand lighting solutions that balance uniform illumination across the large rectangular field, anti-glare performance for players and spectators, and compatibility with high-definition broadcasts. This engineering case focuses on how to optimize light distribution, stabilize color temperature, and integrate intelligent control systems to meet FIFA/UEFA standards while reducing energy consumption and maintenance costs.

Kleanthis Vikelidis Stadium in Thessaloniki, Greece

It is the home ground of Aris Thessaloniki F.C., the Greek professional football club.

Estadio Santiago Bernabéu

02

Cricket Ground

Cricket, a sport with distinct playing zones (pitch, outfield) and varying action speeds, requires targeted lighting design that prioritizes precision for the central pitch and consistent coverage for the expansive outfield. This engineering case explores lighting solutions tailored to cricket's unique needs—minimizing shadows for bowlers and batsmen, ensuring long-distance visibility, and adapting to both day-night matches and training scenarios.

Shahid Nassiri Stadium

03

Basketball Court

With its compact layout and vertical gameplay, basketball courts demand lighting that delivers high uniformity, low glare, and clear vertical illuminance to capture fast jumps, passes, and shots. This engineering case details how to design focused lighting systems for indoor and outdoor courts, align with FIBA standards, and integrate with venue management platforms for flexible scenario switching (competitions, training, events).

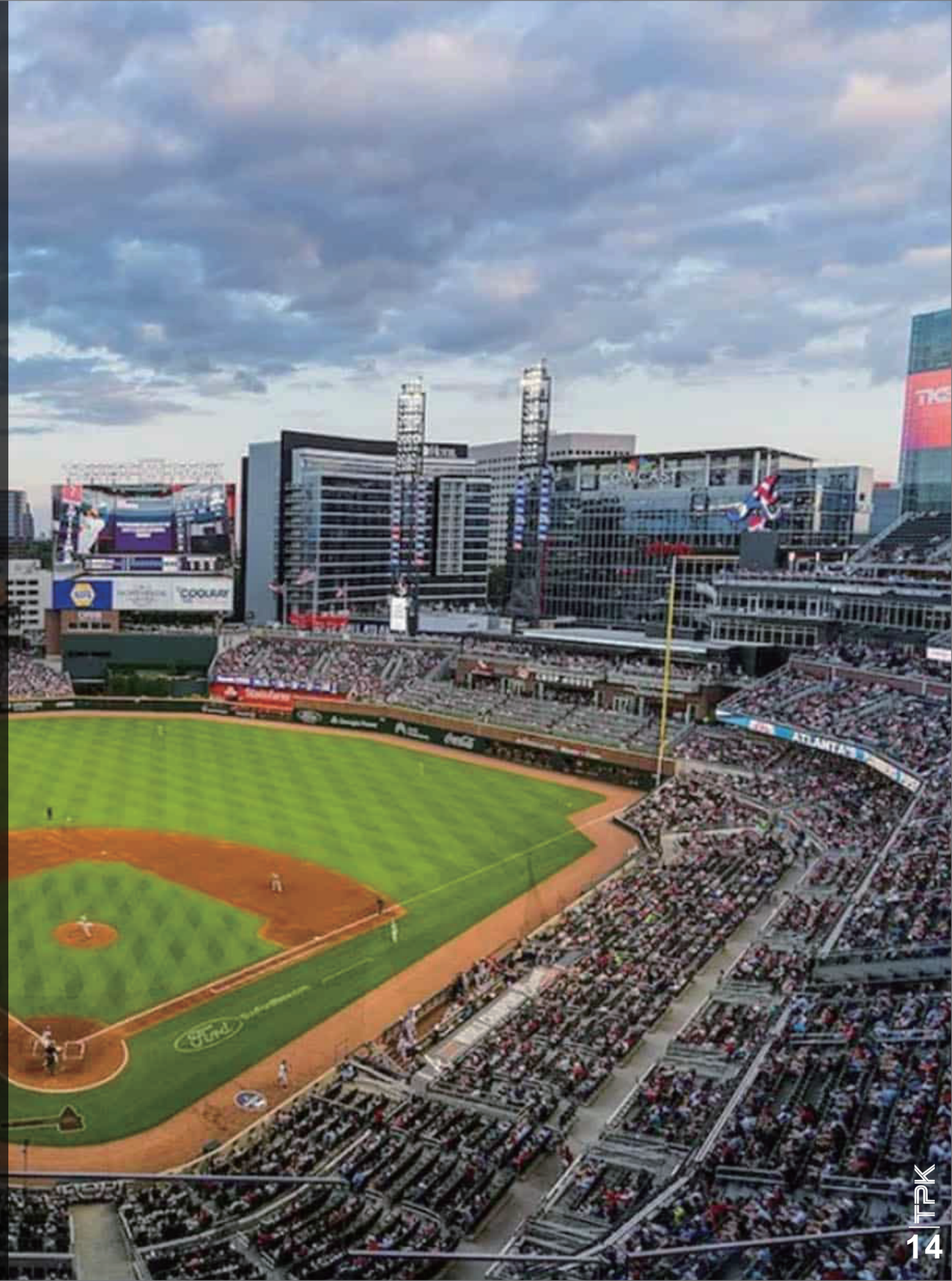
The 15th Guangdong Provincial Games – held in Zhaoqing

Florida Atlantic University

04

Baseball Stadium

Baseball’s dynamic gameplay—from pitcher-batter matchups to outfield catches—requires specialized lighting that highlights key zones (mound, home plate, outfield) while ensuring consistent visibility across the irregularly shaped field. This engineering case addresses the challenges of long-distance light projection, shadow elimination for TV broadcasts, and weather-resistant lighting solutions suitable for outdoor stadiums.



Rangers Ballpark

05

Rugby Field

Rugby fields, similar in size to football pitches but with intense physical contact and wide player movement, need lighting that combines broad coverage with precise intensity control. This engineering case focuses on meeting World Rugby standards, optimizing light uniformity for large playing areas, reducing glare for players in close combat, and implementing energy-efficient systems for extended match durations.

Shahid Nassiri Stadium

CONSULTANT

AND ASSISTANT ON PROJECTS,

EXPERT ON OUTDOOR LIGHTING

A company consists of some happy and quite craftman

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