APEX™ SERIES

ADVANCED STADIUM & SPORTS COMPLEX LIGHTING SYSTEM

DESIGNED IN ACCORDANCE WITH ANSI/IES RP-6

Intended for use as a Basis of Design lighting system for stadium, high-mast, and large-area sports lighting applications requiring long-throw illumination and controlled optical distribution.

PROJECT SUBMITTAL	
PROJECT NAME	
TYPE / DESIGNATION	
CATALOG NUMBER	
SUBMITTED BY	DATE
NOTES / REMARKS	

1400W | 1500W | 1600W

SYSTEM CONFIGURATIONS



ETL LISTED • DLC PREMIUM • IP65 • BAA COMPLIANT

SYSTEM ENGINEERING

Lighting system performance is achieved through high-output forward-throw reflector optics engineered for long-throw illumination, with coordinated pole geometry, fixture aiming, and beam control to deliver high horizontal and vertical illuminance across large-field applications.

KEY SYSTEM ATTRIBUTES

- Forward-throw reflector optics for long-throw illumination
- Narrow-beam distributions for high-mast applications
- Integrated visor with optional enhanced spill-light control
- Integrated or remote driver configurations
- Flicker-free driver operation for broadcast environments

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SYSTEM OVERVIEW & PERFORMANCE SUMMARY

SYSTEM OVERVIEW

The Apex™ Series is a high-output LED stadium lighting system utilizing forward-throw reflector optics to deliver long-throw illumination for large sports venues and high-mast applications.

The optical system directs LED output toward the playing surface using controlled beam distributions to achieve high illuminance levels while managing high-angle glare and off-site light spill.

Lighting systems utilizing Apex luminaires are developed in accordance with ANSI/IES RP-6 recommendations. Illumination levels, uniformity, and aiming geometry shall be verified through project-specific photometric calculations.

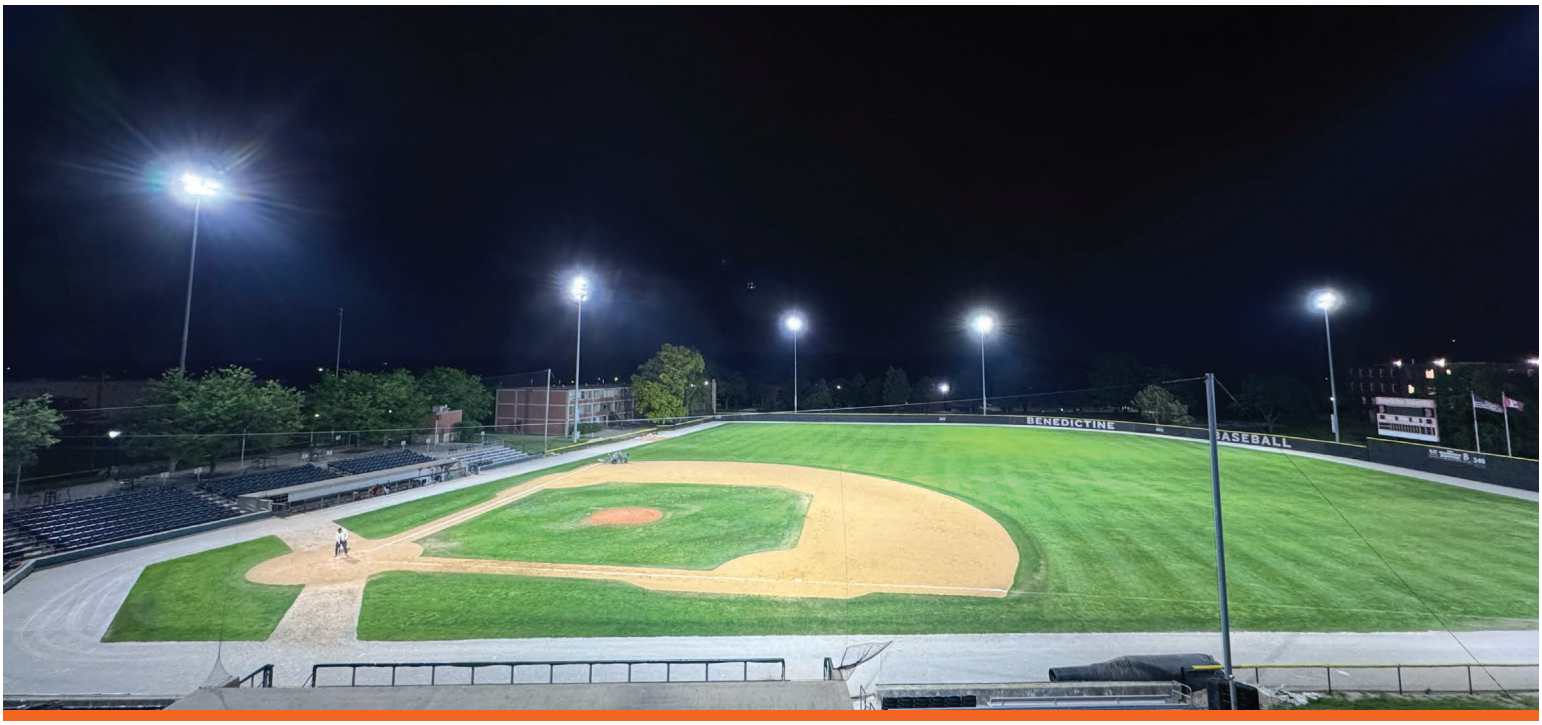
> LIGHTING PERFORMANCE IS ACHIEVED THROUGH SYSTEM-LEVEL COORDINATION—NOT FIXTURE OUTPUT ALONE.

Duvon sports lighting systems are designed as integrated lighting systems rather than individual luminaires.

SYSTEM PERFORMANCE SUMMARY

ATTRIBUTE	PERFORMANCE
Typical System Efficacy	130 lm/W (system-level, dependent on configuration)
Rated Life	L70 ≥ 100,000 hours
Ingress Protection	IP65
Surge Protection	10 kV (std) / 20 kV (opt)
Operating Temperature	-40°F to +122°F

APPLICATIONS & DESIGN SUPPORT



PRIMARY APPLICATIONS

SPORTS FACILITIES
Football stadiums, soccer stadiums, baseball and softball complexes, large multi-field sports complexes, collegiate athletic venues, tournament sports venues.

INFRASTRUCTURE & HIGH MAST
High-mast area lighting, transportation yards, industrial yards, large event venues.

TYPICAL MOUNTING CONDITIONS

Typical pole heights: 60–100 ft. Final mounting height, pole spacing, fixture quantity, optical distribution, and aiming angles shall be determined through project-specific photometric analysis.

ENGINEERING & DESIGN SUPPORT

Duvon provides lighting system design assistance including luminaire selection, optical distribution selection, and photometric verification.

Engineering services include:

- AGi32 photometric simulations
- Pole placement recommendations
- Fixture aiming schedules
- Glare analysis
- Spill-light evaluation
- Structural loading review
- IES photometric files

LIGHTING PERFORMANCE

REFERENCE STANDARD

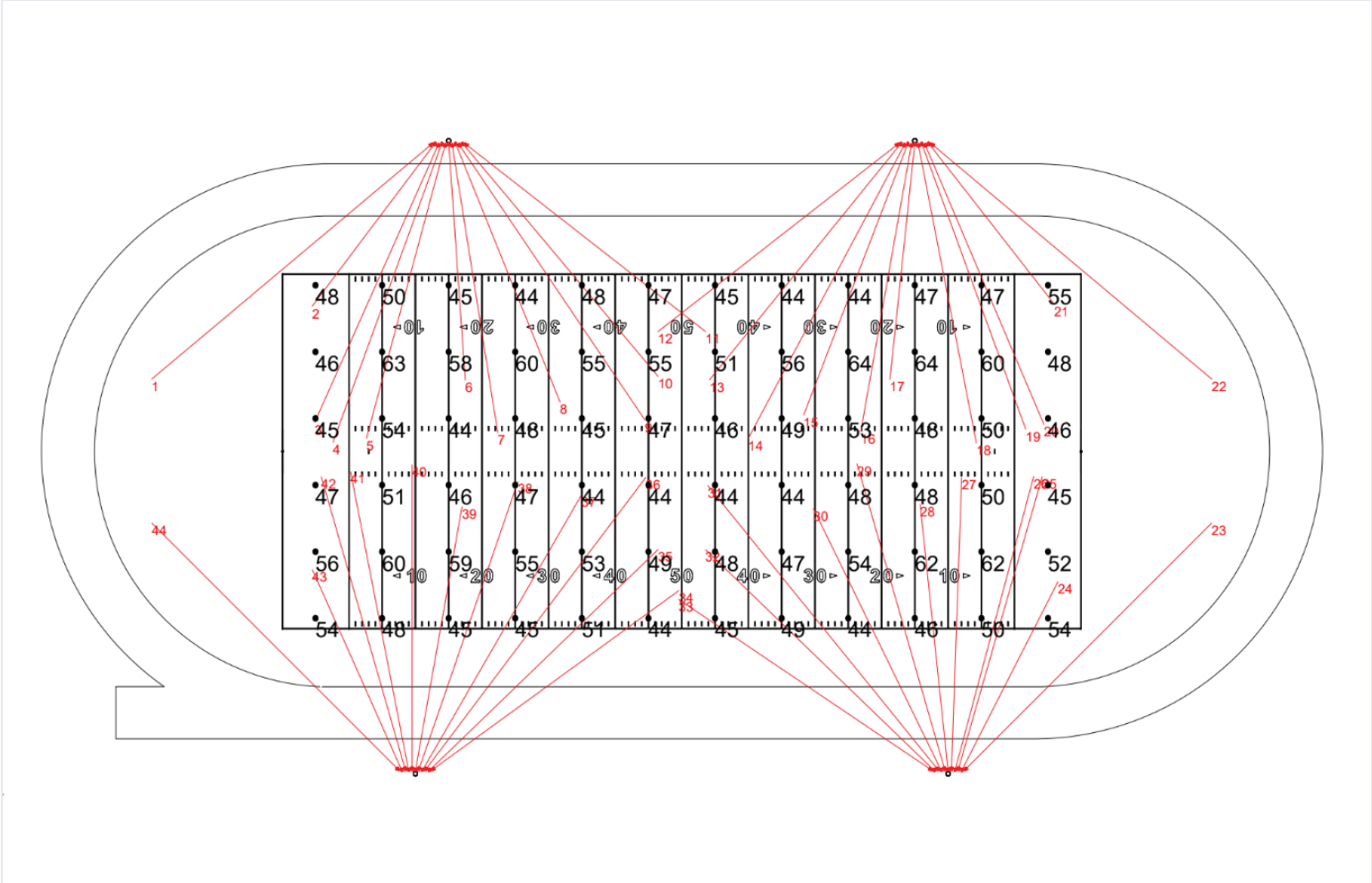
Lighting designs utilizing Apex luminaires are developed in accordance with ANSI/IES RP-6.

SPORT APPLICATION	AVG ILLUMINANCE	AVG:MIN	MAX:MIN	IES CLASS
Recreational Soccer / Football	20–30 fc	≤2.5:1	≤3.0:1	Class III
Competitive High School Soccer / Football	30–50 fc	≤2.0:1	≤2.5:1	Class II
Recreational Baseball / Softball	Infield 50 fc / Outfield 30 fc	≤2.5:1	≤3.0:1	Class III
Competitive Baseball / Softball	Infield 70 fc / Outfield 50 fc	≤2.0:1	≤2.5:1	Class II
Collegiate / Tournament Stadium	75–100 fc	≤1.5:1	≤2.0:1	Class I

Actual lighting performance depends on field size, pole height, fixture placement, and optical selection.
Illumination and uniformity values represent design targets and shall be verified through project-specific photometric calculations.

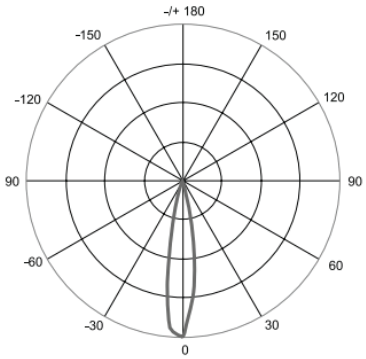
VERTICAL ILLUMINANCE

Vertical illuminance may be evaluated during photometric design to support ball tracking, player visibility, and spectator viewing requirements.



Sample photometric calculation — 40 fc average football field design

OPTICAL DISTRIBUTIONS



TYPE A (15°)

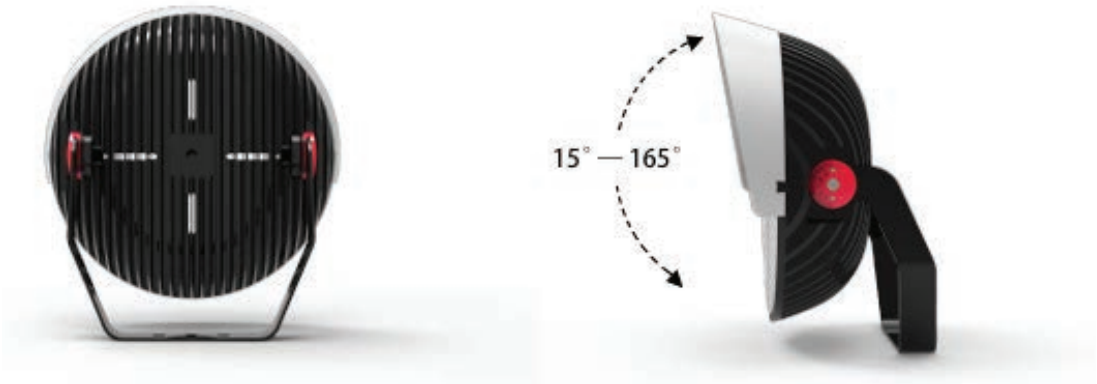
DISTRIBUTION TYPE	BEAM ANGLE	TYPICAL APPLICATION
Type A	15°	Long-throw stadium distribution

OPTICAL DESIGN

Apex luminaires utilize forward-throw reflector optics designed for long-throw stadium lighting applications.

The optical system concentrates illumination onto the playing surface using controlled beam angles to achieve high illuminance levels while limiting high-angle light.

- Integrated visor reduces direct source visibility
- Optional visor configurations provide enhanced spill-light control
- Optical distribution selected based on mounting height and field geometry



ELECTRICAL & MECHANICAL SPECIFICATIONS

LUMEN OUTPUT

MODEL	WATTS	LUMEN OUTPUT
APEX-1400	1400 W	182,000 lm
APEX-1500	1500 W	195,000 lm
APEX-1600	1600 W	208,000 lm

TYPICAL SYSTEM EFFICACY

130 lm/W

Depending on wattage, CCT, and driver configuration.

INPUT CURRENT (AMPERAGE)

VOLTAGE	1400W	1500W	1600W
120V	11.67 A	12.5 A	13.33 A
208V	6.73 A	7.21 A	7.69 A
240V	5.83 A	6.25 A	6.67 A
277V	5.05 A	5.42 A	5.78 A
480V	2.92 A	3.13 A	3.33 A

Input current values are nominal. Final branch circuit sizing shall be verified in accordance with NEC and project requirements.

ELECTRICAL CHARACTERISTICS

ATTRIBUTE	PERFORMANCE
Input Voltage	100–277 V std. (277–480 V opt.)
Driver Type	Constant Current LED Driver
Driver Manufacturer	Inventronics
Surge Protection	10 kV std. (20 kV opt.)
Dimming	0–10 V compatible

MECHANICAL CONSTRUCTION

COMPONENT	SPECIFICATION
Housing	Die-cast aluminum
Finish	Polyester powder coating
Mounting	Adjustable yoke bracket
Visor	Standard visor included Custom visor optional

THERMAL MANAGEMENT

The luminaire incorporates a die-cast aluminum heat sink designed to maintain stable LED junction temperatures under high-power operating conditions.

FIXTURE WEIGHT

Fixture weight varies by wattage and configuration. Final values shall be confirmed in project-specific submittals.

EFFECTIVE PROJECTED AREA (EPA)

0.45—0.94 ft²

STRUCTURAL CONSIDERATIONS

EPA values assist engineers evaluating pole wind loading and structural requirements. Pole design should be verified by a licensed structural engineer according to local wind load requirements.

SYSTEM CONTROLS

Apex luminaires support integrated driver and remote driver configurations.

Remote driver systems reduce pole-top weight and improve maintenance accessibility.

LIGHTING CONTROLS

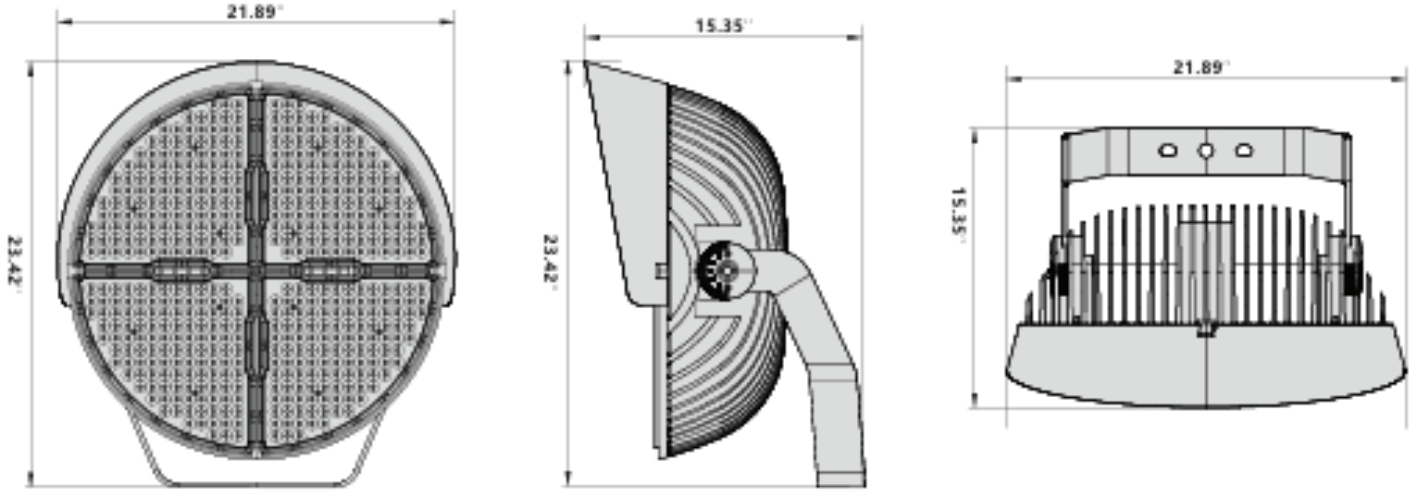
Supports lighting control platforms including:
- Zigbee wireless lighting control
- Wireless DMX stadium control

Control capabilities may include:
- On/off
- Scheduled operation
- Scene-based dimming
- Energy monitoring
- Dynamic lighting effects

SYSTEM PERFORMANCE VERIFICATION

Lighting systems utilizing Apex luminaires include project documentation such as:
- Photometric reports verifying illumination levels & uniformity
- Pole layout drawings
- Fixture aiming diagrams
- IES photometric files
- Electrical load data
- Structural data including fixture weight and EPA values

DIMENSIONAL DATA



REMOTE DRIVER CABINET CONFIGURATIONS

Final cabinet loading, wiring configuration, and thermal performance shall be verified based on driver configuration and environmental conditions.

SMALL DRIVER CABINET



DIMENSIONS

13.75″ x 16.5″ x 14″

LARGE DRIVER CABINET



DIMENSIONS

33.75″ x 16.75″ x 14″

GROUND-LEVEL SERVICE ACCESS

NEMA 4X Stainless Steel cabinets available upon specification. Please consult factory for wiring diagrams and conduit requirement schedules.

ORDERING INFORMATION & SUBMITTAL SCHEDULE

MODEL SELECTION BUILDER

MODEL	WATTS	CCT	CRI	OPTIC	VOLTAGE	MOUNT	OPTIONS
APEX	1400 1500 1600	40K 50K **57K**	**70** 80	**A**	**STD** HV	**YK**	DC CA CV SC

Bold values indicate standard configuration.

CATALOG NUMBER EXAMPLE APEX-1500-50K-70-A-STD-YK-DC

CONFIGURATION CODES

CCT

40K = 4000K
50K = 5000K
57K = 5700K

OPTICS

A = 15°

VOLTAGE

STD = 100-277V
HV = 277-480V

MOUNT

YK = YOKE MOUNT

OPTIONS

DC = DRIVER CABINET
CA = CROSS ARM
CV — CUSTOM VISOR
SC = SMART CONTROL

FIXTURE SCHEDULE

TYPE	CATALOG NUMBER	QTY

Final configuration shall be verified against project-specific electrical and photometric requirements.

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