LIBERTY™ SERIES

HIGH SCHOOL, COLLEGIATE & MUNICIPAL SPORTS FIELD LIGHTING SYSTEM

DESIGNED TO MEET IES RP-6 PERFORMANCE REQUIREMENTS

Intended for use as a Basis of Design lighting system for stadium-grade sports applications.

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

800W | 1000W | 1200W

SYSTEM CONFIGURATIONS



ETL LISTED • DLC PREMIUM • IP65 • BAA COMPLIANT

SYSTEM ENGINEERING

Lighting system performance is achieved through forward-throw optical distribution combined with integrated visor shielding, balancing long-throw coverage and glare control through coordinated pole placement and aiming geometry.

KEY SYSTEM ATTRIBUTES

- High-output stadium optical system
- Forward-throw optical distribution for long-distance coverage
- Integrated glare control visor system (VGS™)
- Integrated or remote driver configurations
- Die-cast aluminum construction for outdoor use

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SYSTEM OVERVIEW & PERFORMANCE SUMMARY

SYSTEM OVERVIEW

The Liberty™ Series is a high-output LED sports field lighting system engineered for high school stadiums, collegiate athletic venues, and municipal sports complexes.

The system combines precision forward-throw optical distributions, durable die-cast aluminum construction, and advanced thermal management to deliver uniform illumination across large athletic fields while helping control glare and off-site light spill.

Lighting systems utilizing Liberty 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.

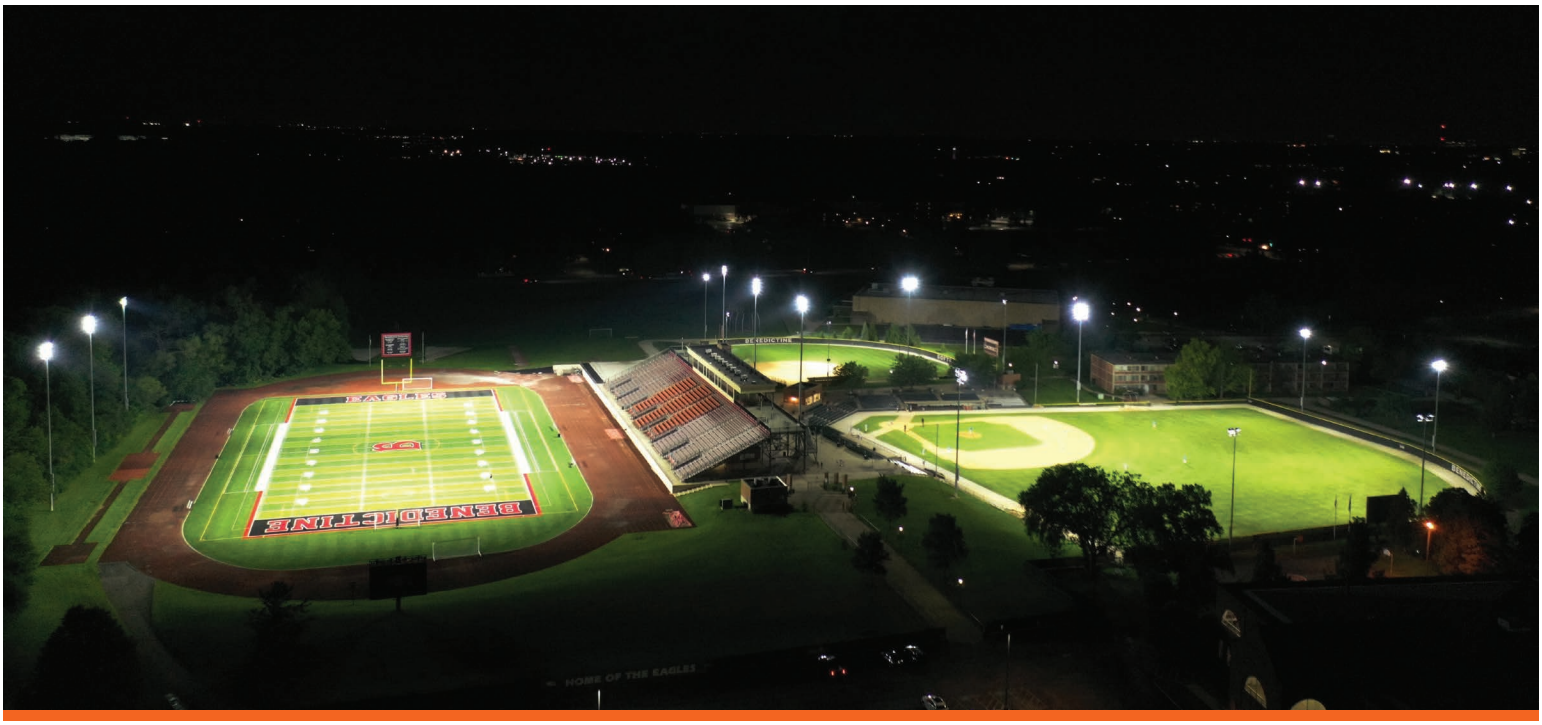
> LIGHTING PERFORMANCE IS ACHIEVED THROUGH SYSTEM-LEVEL COORDINATION—NOT FIXTURE OUTPUT ALONE.

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

SYSTEM PERFORMANCE SUMMARY

ATTRIBUTE	PERFORMANCE
Typical System Efficacy	130-140 lm/W
Rated Life	L70 ≥ 100,000 hours
Ingress Protection	IP65
Surge Protection	10 kV (std) / 20 kV (opt)
Operating Temperature	-40°F to +131°F

APPLICATIONS & DESIGN SUPPORT



PRIMARY APPLICATIONS

COMPETITIVE STADIUMS
High school football stadiums, collegiate athletics, soccer & lacrosse complexes, baseball & softball fields, multi-sport athletic complexes.

MUNICIPAL INFRASTRUCTURE
Public recreation complexes, tournament sports venues, municipal athletic parks, outdoor event venues.

TYPICAL MOUNTING CONDITIONS

Typical pole heights: 60–80 ft. Final mounting height, pole spacing, and aiming angles shall be determined through project-specific photometric analysis.

ENGINEERING & DESIGN SUPPORT

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

Duvon engineering services include:

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

These services assist architects, engineers, and municipalities in lighting design verification.

LIGHTING PERFORMANCE

REFERENCE STANDARD

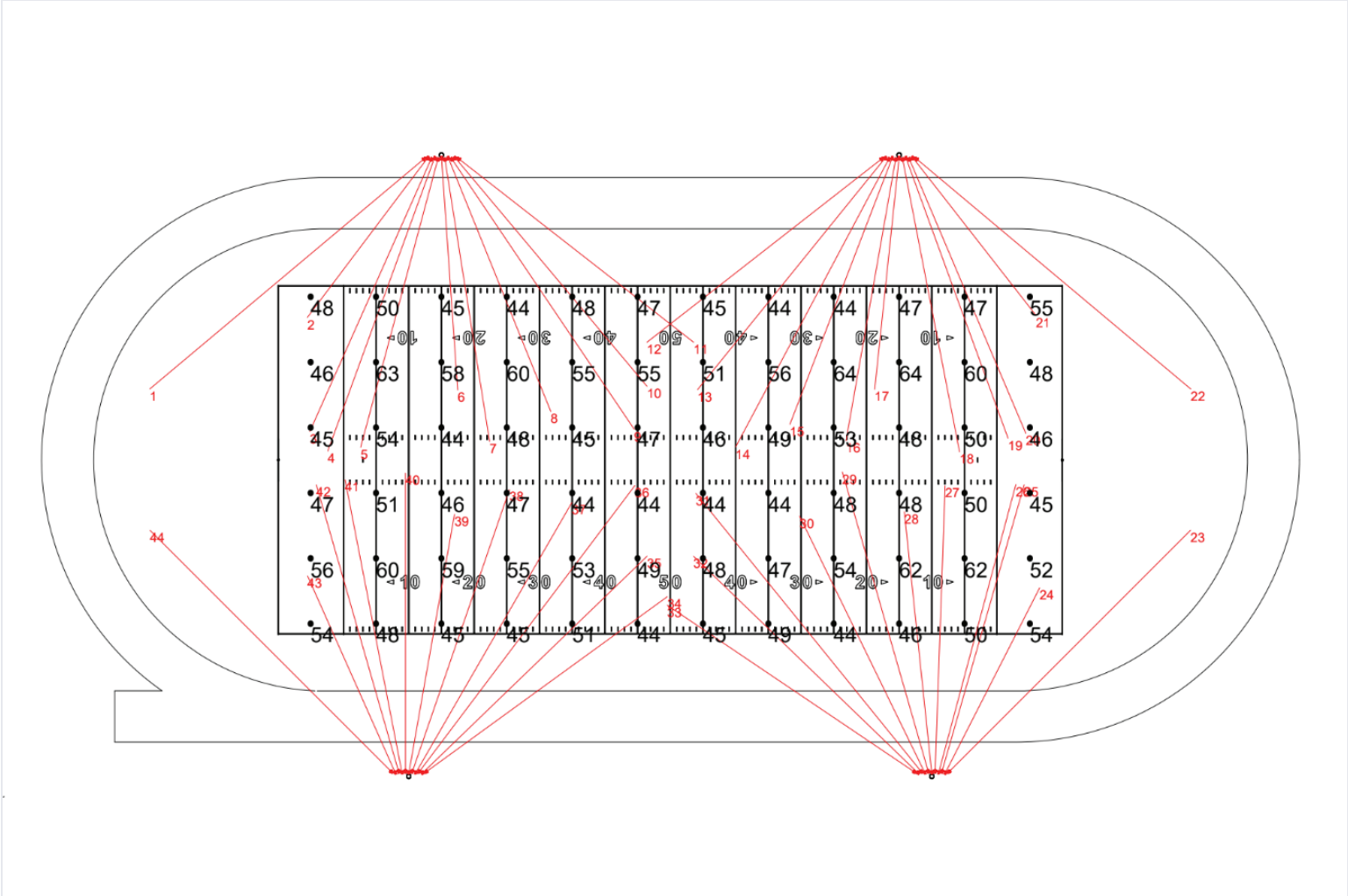
Lighting designs utilizing Liberty luminaires are developed in accordance with ANSI/IES RP-6.

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

Illumination and uniformity values represent design targets and shall be verified through project-specific photometric calculations.

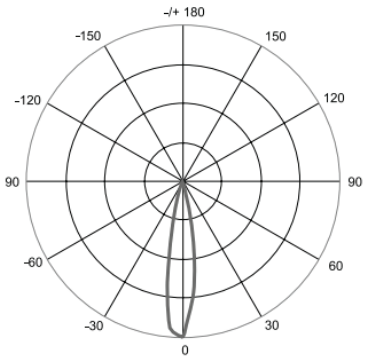
VERTICAL ILLUMINANCE

Lighting calculations may include vertical illuminance evaluation to support ball tracking and athlete visibility. This is particularly critical for baseball, softball, soccer, and lacrosse applications.

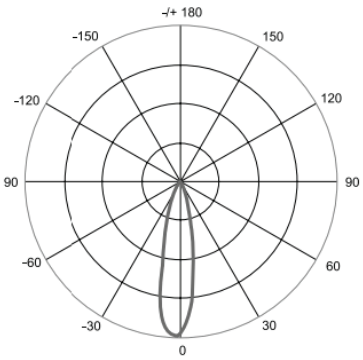


Sample photometric calculation — 40 fc average football field design

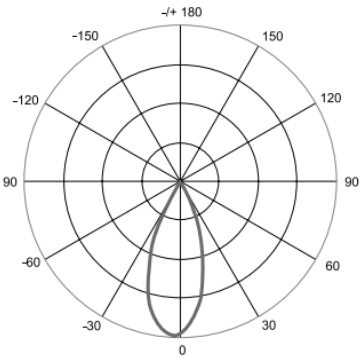
OPTICAL DISTRIBUTIONS



TYPE A (15°)



TYPE B (25°)



TYPE C (45°)

DISTRIBUTION TYPE	BEAM ANGLE	TYPICAL APPLICATION
TYPE A	15°	Ultra-narrow long-throw
TYPE B	25°	Primary stadium coverage
TYPE C	45°	Sideline and in-field fill

Liberty™ luminaires are available with multiple stadium optical distributions.

OPTICAL SYSTEM

The Liberty™ system uses precision forward-throw optics designed to project light from perimeter poles into the field center. Recessed LED arrays and integrated visor shielding reduce direct source visibility and improve player visual comfort.

GLARE CONTROL — VGS™ VISOR SYSTEM

The integrated visor system features a matte-black internal finish designed to eliminate internal light reflection and spill-light bounce. The optical assembly is designed to limit light above the 90° plane when properly aimed, helping control glare and light trespass.



Standard



VGS 1 (Std. included)
4.5 in



VGS 2
8 in



VGS 3
16.5 in

ELECTRICAL & MECHANICAL SPECIFICATIONS

LUMEN OUTPUT

MODEL	WATTS	LUMEN OUTPUT
LIBERTY-800	800 W	104,000 lm
LIBERTY-1000	1000 W	130,000 lm
LIBERTY-1200	1200 W	144,000 lm

TYPICAL SYSTEM EFFICACY

130-140 lm/W

Depending on wattage, CCT, and driver configuration.

INPUT CURRENT (AMPERAGE)

VOLTAGE	800W	1000W	1200W
120V	6.67 A	8.33 A	10.00 A
208V	3.85 A	4.81 A	5.77 A
240V	3.33 A	4.17 A	5.00 A
277V	2.89 A	3.61 A	4.33 A
480V	1.67 A	2.08 A	2.50 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
LED Lifetime	L70 ≥ 100,000 hours
Operating Temperature	-40°F to +131°F
Ingress Protection	IP65

BROADCAST & FLICKER PERFORMANCE

The Liberty™ system supports flicker-free driver operation (<1%), suitable for high-speed video recording. Optional configurations support TLCI ≥ 90 for television-ready sports lighting environments.

ENERGY SAVINGS

The Liberty™ system can reduce energy consumption compared to traditional HID stadium lighting systems, depending on application

MECHANICAL CONSTRUCTION

COMPONENT	SPECIFICATION
Housing	Die-cast aluminum
Finish	Polyester powder coating
Hardware	Stainless steel external fasteners
Mounting	Adjustable yoke bracket
Tilt Adjustment	±75°

THERMAL MANAGEMENT

High-power stadium luminaires must address heat buildup and environmental debris.

The Liberty™ housing incorporates:

- Deep-fin aluminum heat sink
- Passive convection cooling channels
- Debris-resistant airflow paths

This design minimizes heat accumulation and prevents dirt or bird debris from blocking cooling surfaces.

FIXTURE WEIGHT (LUMINAIRE HEAD ONLY)

MODEL	WEIGHT-INT	WEIGHT-BR
LIBERTY-800	65.5 lbs	70.9 lbs
LIBERTY-1000	66.8 lbs	71.4 lbs
LIBERTY-1200	68.3 lbs	72.6 lbs

INT = integrated driver on back of fixture. BR = driver on bracket.

EFFECTIVE PROJECTED AREA (EPA)

0.58—1.38 ft²

STRUCTURAL CONSIDERATIONS

Fixture EPA values are provided to support structural analysis per ASCE 7-22. Final pole design and wind resistance must be verified by a licensed structural engineer.

SYSTEM CONTROLS

Liberty™ luminaires support remote driver architecture.

Drivers may be installed in a NEMA 4X stainless steel cabinet located at ground level or mid-pole.

Advantages include:
- Ground-level maintenance
- Reduced pole-top weight
- Improved thermal stability

VOLTAGE DROP COMPENSATION

Remote driver systems incorporate voltage-drop compensation technology to maintain consistent lumen output across cable runs exceeding 100 ft vertical height.

LIGHTING CONTROLS

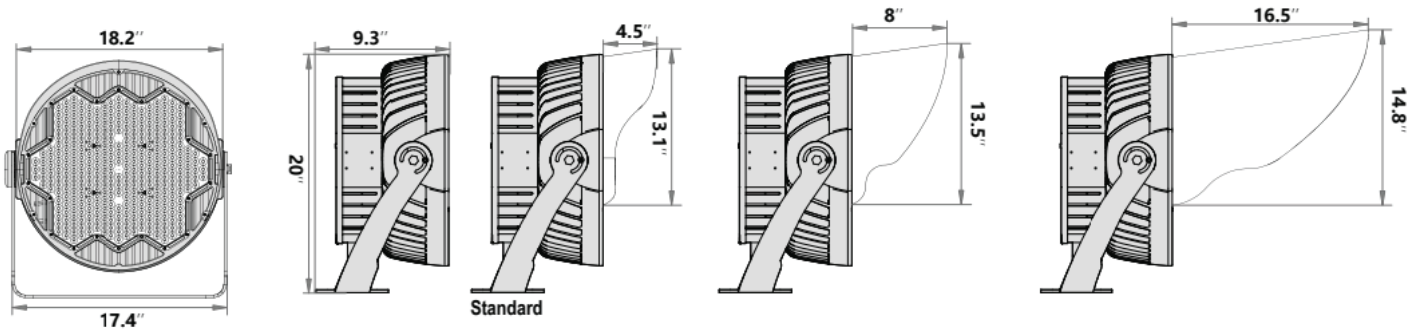
Optional lighting control platforms include:
- Zigbee wireless control
- Wireless DMX stadium control

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

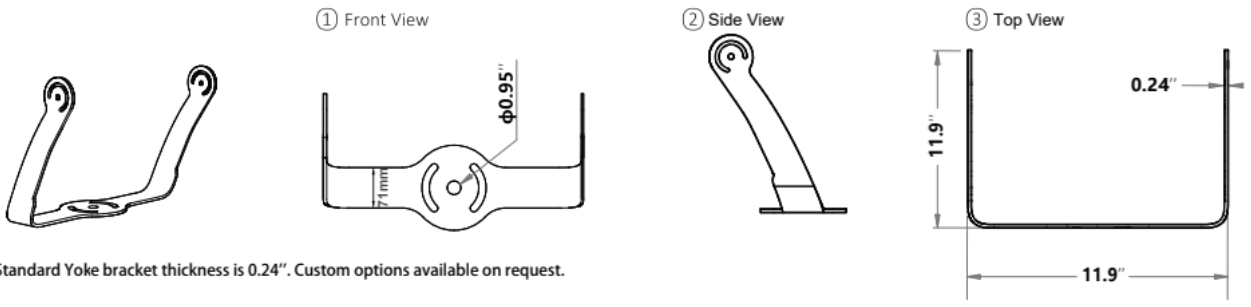
SYSTEM PERFORMANCE VERIFICATION

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

DIMENSIONAL DATA



YOKE BRACKET



Standard Yoke bracket thickness is 0.24″. Custom options available on request.

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	DRIVER	OPTIONS
LIBERTY	800 1000 1200	40K 50K **57K** RGB	**70** 80	A B C	**STD** HV	INT REM	**VGS 1** VGS 2 VGS 3 DC SC DMX

Bold values indicate standard configuration.

CATALOG NUMBER EXAMPLE LIBERTY-1000-50K-80-B-HV-REM-VGS2-DC

CONFIGURATION CODES

CCT

40K = 4000K
50K = 5000K
57K = 5700K
RGB = RED, GREEN, BLUE

OPTICS

A = 15°
B = 25°
C = 45°

VOLTAGE

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

DRIVER

INT = INTEGRATED
REM = REMOTE

OPTIONS

VGS = VISOR GLARE SHIELD
DC = DRIVER CABINET
SC = SMART CONTROL
DMX = STADIUM CONTROL

FIXTURE SCHEDULE

TYPE	CATALOG NUMBER	QTY

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

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