TENNIS LIGHTING

VUE TENNIS

TENNIS LIGHTING
VUE Tennis is Best for...

PROFESSIONAL, COMPETITIVE + RECREATIONAL TENNIS

• Produces the highest and most uniform light levels in the industry for the most common mounting heights ranging from 18’ to 22’ foot without tilt.

• Is the only LED fixture to accomplish a true American Sports Builder Association Class I Primary Playing Area Lighting uniformity requirement with only 8 fixtures.

• Is the best LED fixture at controlling glare while requiring no tilt, using a reflector that is made from 95 percent diffused aluminum substrate. LEDs are positioned deep within the housing and are not seen during play.

• Is engineered and manufactured to the highest reliability level with respect to lifetime and performance utilizing the best possible electronics protected with an impact resistant safety glass.

• Low profile, traditionally and beautifully designed fixture which blends with any club or residential setting.

• In terms of the number of prestigious installations designed or sold over the past 20 years, the team behind the Vue brings some of the most tennis court lighting experience to the table—on and off the court.
How is VUE Tennis over its competitors?

LESS GLARE + GREATER RELIABILITY
Before the Vue there were few, if any, LED fixtures which were practical, efficient and effective for tennis. Most of the existing fixtures have plastic lensed optics which stick out below the bottom of the fixture. The result of such design causes hundreds of points of light and glare to be seen during the point. Plastic lenses have been known to fail and also face the possibility of oxidizing. Oxidation disrupts the light pattern and prevents heat from escaping while decreasing life and increasing rates of depreciation. This is why the Vue does not utilize plastic lenses. The Vue recesses its LEDs two to three inches deep into the housing so they cannot be seen. Its design eliminates extraneous glare and provides protection with a single proven glass lens like tens of thousands of fixtures before it.

THE OPTICAL ADVANTAGE
No other LED companies have designed an optic or reflector specific for tennis. They might use a car dealership front row optic that has a very powerful but narrow strip of light, yet must be tilted in most cases in order to reach the center of the court. The Star Power™ optical system has a very thick and powerful light pattern, enabling it to function beautifully, designed for tennis.
THE VUE TENNIS uses the Star Power™ patent-pending LED optical system, which is designed to the unique 120x60 dimensions of a Tennis Court. We combine our Star Power™ optical system with our unsurpassed knowledge and experience of tennis court lighting. Give us a call and we will design and manufacture the best system at the lowest cost with the least amount of energy and maintenance. We manufacture the entire fixture in the United States with our poles and mounting arms to complete your tennis court lighting system.

In this brochure you will learn why it is now time to convert your existing light system or construct your new tennis lighting system with Vue luminaires. The Vue is the only LED tennis court luminaire that complies with the American Sports Builder Association “PPA” light level and uniformity requirements at standard pole heights without the need to tilt.

STAR POWER™, SPECIFICALLY DESIGNED FOR TENNIS SPORTS
Other LED companies talk about their high lumen packages. The total number of lumens coming out of a fixture are meaningless when it comes to tennis. It's where the lumens go that counts. The Star Power™ optical system takes into account the dimensions of a 120 x 60 typical court and makes sure that the lumens go in the right places and are responsible for their own zone while providing beautiful light levels across at 3 feet, 6 feet, 10 feet and higher.
PLAY VERTICAL
COMPLIES WITH ASBA UNIFORMITY REQUIREMENTS BEYOND THE BASELINE AND BEYOND THE SERVICE LINES. GREAT FOOT CANDLES—10 FEET AND HIGHER.

ELIMINATE THE NEED TO TILT
Other companies tilt their fixtures in order to get the proper light levels in the right places. The patent pending Star Power™ optical system requires no tilting and as such is glare-free, Dark-Sky, and neighborhood friendly. We are committed to the International Dark Sky Association and have even named our optical system the Star Power™ system because we believe that artificial lighting should not impede a beautiful dark sky in which thousands of stars should be able to be seen and enjoyed by all.

INSTANT ON/OFF + DIMMABLE
The Vue is instant on and instant off. No more waiting for the lights to warm up. There needs to be no more fear of turning the lights off and then on again a few minutes later. The Vue can be ordered with timed motion sensors which automatically shut off the lights when no one is present. All Vue fixtures are dimmable. One can dial in how much light and energy is being used on the court at any time. And the lights can be dimmed down low for parties where only low levels of light may be desired. See dimming options for dimming events and schedules.
Testimonial Vue Tennis Court Lighting

My name is Desi McBride of the Paseo Tennis Club in Valencia California. We have a very active tennis program with many intermediate and advanced competitive tennis players and coaches.

We were exploring a solution to replace our outdated lights to save energy and improve the lighting. Our GM called our original lighting manufacturer who advertised a new LED fixture. We installed a court and saw a noticeable light increase on the court surface. Some members played on the court and were satisfied. The next day I looked at the lights from the parking lot and noticed they had been tilted. As a former number one ranked Men’s Open Southern California tennis player and coach I have competed at dozens of facilities and never seen lights tilted more than the arm holding them unless it was a stadium court. I inquired and was informed that it was the manufacturer’s recommendation.

I made some calls as I did not want to get complaints from neighbors. I found a local lighting manufacturer, NLS Lighting. I was put in contact with Bill Hein who coincidentally I competed against in the Men’s Open Division. Bill invited me to play at a ten court facility which had recently installed their Vue Tennis fixture in Hermosa Beach.

I went to the courts and immediately saw the difference. These fixtures had no tilt. The fixtures provided even light over the entire court surface all the way to the backdrops. The top of the twelve foot back drops were also lit. I played on the court and was able to hit well. Bill explained the differences between the two systems and why his lights were so easy to play under from a lighting and players perspective. The Vue has its LED light source recessed deep into the fixture and could not be seen during play. The Vue casts light all the way across the court thus lighting the ball when it is up high down the middle of the court. I was also easily able to return serve because the vertical backdrop behind the server was lit all the way to the top providing me the depth perception I needed to get an early read on the ball.

The next night I hit on our court for the first time. The Glare was intense from all the fixtures on the court and when the ball was hit up the middle of the court during a normal rally the ball lost intensity at around ten feet. Balls hit higher than that were really dark. It was obvious why the fixtures needed tilt.

We ordered the Vue’s and replaced the other LED fixtures. I have received dozens of positive comments from players and coaches. These are some of the first lights I have ever played on in which everybody can play their best.

Sincerely,

Desi McBride
General Manager

The Paseo Club | 27650 Dickason Drive, Valencia, CA 91355
### RECOMMENDED HORIZONTAL ILLUMINATION

<table>
<thead>
<tr>
<th>Performance Criteria</th>
<th>Class I</th>
<th>Class II</th>
<th>Class III</th>
<th>Class IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Maintained Horizontal Footcandles within PPA (1,2,4)</td>
<td>125+ (1250 lux)</td>
<td>75+ (750 lux)</td>
<td>50+ (500 lux)</td>
<td>30+ (300 lux)</td>
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<tr>
<td>Minimum Maintained Horizontal Footcandles within PPA (2,4)</td>
<td>100+ (1000 lux)</td>
<td>60+ (600 lux)</td>
<td>40+ (400 lux)</td>
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<tr>
<td>Maximum Uniformity Ratio (3)</td>
<td>1.5</td>
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### RECOMMENDED VERTICAL ILLUMINATION

<table>
<thead>
<tr>
<th>Performance Criteria</th>
<th>Class I</th>
<th>Class II</th>
<th>Class III</th>
<th>Class IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Maintained Vertical Footcandles within PPA (1,2,4)</td>
<td>50+ (500 lux)</td>
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<td>20+ (200 lux)</td>
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<tr>
<td>Maximum Uniformity Ratio (3)</td>
<td>2.0</td>
<td>3.0</td>
<td>3.0</td>
<td>NA</td>
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</tbody>
</table>

Notes:
1. Maintained footcandles is determined by applying a light loss factor (LLF) to the initial or measured footcandles. LLF is dependent upon lamp characteristics, fixture maintenance, voltage variations and atmospheric conditions. It normally varies between .6 and .85. Consult the Illuminating Engineering Society handbook and fixture manufacturer’s publications for proper LLF values.
2. Average maintained and minimum maintained footcandles should be calculated within the Primary Playing Area (PPA) with the footcandle values multiplied by the appropriate LLF.
3. Uniformity ratio is defined as the ratio of the maximum footcandles divided by the minimum footcandles.
Primary Playing Area (PPA) is defined as the area that includes 6’ beyond the sidelines and 10’ behind the baseline.

### TYPICAL FACILITY CLASSIFICATIONS

<table>
<thead>
<tr>
<th>Class I (1)</th>
<th>Class II</th>
<th>Class III</th>
<th>Class IV</th>
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<tbody>
<tr>
<td>PROFESSIONAL</td>
<td>College (2)</td>
<td>College (4)</td>
<td>High School (6)</td>
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<tr>
<td>INTERNATIONAL</td>
<td>Tennis Clubs (6)</td>
<td>High School (6)</td>
<td>Tennis Clubs (6)</td>
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<td>SATELLITE</td>
<td>Residential (6)</td>
<td>Tennis Clubs (6)</td>
<td>Parks &amp; Recreation (6)</td>
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<td>CHALLENGER</td>
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<td>Residential (6)</td>
<td>College (5)</td>
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<td>COLLEGE</td>
<td>-</td>
<td>Parks &amp; Recreation (6)</td>
<td>-</td>
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</tbody>
</table>

Notes:
1. Class I facilities generally involve broadcast quality television production. These facilities will include permanent spectator accommodations.
2. Facilities that host intercollegiate play, but without broadcast television requirements. These facilities may have permanent or temporary seating.
3. Professional tennis events without broadcast television requirements.
4. Collegiate facilities primarily used for practice or for intramural or recreational play.
5. Collegiate facilities used strictly for recreational play.
Please note that some facility types appear in multiple categories. Illumination levels for a specific facility should be chosen based on the highest skill level, or spectator and television requirements that will take place at the facility. It is recognized that older players require higher light levels. Facilities with older average player ages should be designed for higher levels of light.
DON’T LOSE SIGHT OF YOUR GAME!

NLS LIGHTING LEVELS
Lighting is distributed at high vertical levels, providing a well lit service area and playing zone!

COMPETITOR LEVELS
Vertical light levels are not achieved in a consistent pattern. Dark shadows in between poles create a poor service area and playing zone.

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20 FOOT TALL POLES
PLAYING AREA

10-18 FT
AVERAGE HEIGHT SERVICE AREA + PLAYING ZONE

3 FT

TENNIS BALL—BRIGHT + VISIBLE!

10-18 FT
AVERAGE HEIGHT SERVICE AREA + PLAYING ZONE

3 FT

TENNIS BALL GETS LOST IN SHADOW

PG. 10
The Vœe Tennis is a collaboration of form, optics and thermal management. These combined high-quality features reduce energy costs, utilize the least amount of poles and fixtures per project while meeting IES minimum foot candle levels and extend maintenance cycles at a competitive price.

With specific optical systems designed for Parking Lots, Roadways, Auto Dealerships, Tennis Courts and Sports Field Lighting, the Vœe can achieve powerful performance. Featuring the patent pending Star Power optical system, the flexibility and power of optics enable the Vœe to gain a distinct advantage over its competitors for almost any distribution pattern. The system features 95% optical material, which goes through a linear diffusion process to stretch the virtual image of the diode—both magnifying it and creating a large range of angular flux both horizontally and vertically. This added range increases the width of the light pattern at a greater distance compared to optical systems, which rely on refraction principles using plastics. Star Power optics are also the most reliable; other plastic optics will oxidize over time as well as tend to lose its seal while exposed long term to the elements.

Product Features

The Vœe Tennis is the Best Value Outdoor Lighting Solution

- Produces 100 lumens per System Watt of controlled illumination.
- Has an End of Life modular efficient chip upgrade solution.
- Has a beautiful, sleek and stealth shape made out of extruded aluminum.
- Can be mounted directly on to a Wall, Pole, Tennis Arm, or Davit Arm.
- 20 Degree maximum tilt available
- Light Distribution is Type Tennis Optic (TT).
- Is the Perfect Long Life Solution for any municipality, school, or infrastructure.
- The Vœe Tennis conforms to the strictest Made in the USA standards.
- Designed, Tooled, Fabricated and Assembled in the USA.

### LED WATTAGE CHART

<table>
<thead>
<tr>
<th>Cat #</th>
<th>Light Dist.</th>
<th>No. of LEDs</th>
<th>Milliamps</th>
<th>Kelvin</th>
<th>Volts</th>
<th>Mounting</th>
<th>Color</th>
<th>Shields</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>VUE-2 (316W Max) (VUE-2)</td>
<td>Tennis Optic (TT)</td>
<td>80 (80L)</td>
<td>700 (7)</td>
<td>4000K (40K)</td>
<td>120-277 (UNV)</td>
<td>Direct Pole Square (DPS)</td>
<td>Black (BLK)</td>
<td>House Side Shield (HSS)</td>
<td>Bird Spikes (BS)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>96 (96L)</td>
<td>1050 (1)</td>
<td>5500K (55K)</td>
<td>347-480 (HV)</td>
<td>Direct Pole Round (DPR)</td>
<td>Green (GRN)</td>
<td>Front Side Shield (FSS)</td>
<td>Marine Grade Finish (MGF)</td>
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<tr>
<td>VUE-3 (594W Max) (VUE-3)</td>
<td></td>
<td>112 (112L)</td>
<td>243w</td>
<td>128 (128L)</td>
<td>265w</td>
<td>Tennis Arm (TA)</td>
<td>Custom (CS)</td>
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<td>Photocell (PC)</td>
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<tr>
<td></td>
<td></td>
<td>128 (128L)</td>
<td>316w</td>
<td>144 (144L)</td>
<td>300w</td>
<td>Davit Arm (DA)</td>
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<td></td>
<td>Photocell + Receptacle (PCR)</td>
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<tr>
<td></td>
<td></td>
<td>144 (144L)</td>
<td>366w</td>
<td>160 (160L)</td>
<td>409w</td>
<td>Knuckle Mount (KM)</td>
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<td>Receptacle + Shorting Cap (PCR)</td>
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<td>160 (160L)</td>
<td>409w</td>
<td>176 (176L)</td>
<td>458w</td>
<td></td>
<td></td>
<td></td>
<td>Motion Sensor (MS)</td>
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<td></td>
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<td>176 (176L)</td>
<td>458w</td>
<td>192 (192L)</td>
<td>505w</td>
<td></td>
<td></td>
<td></td>
<td>Surge Protector (10K)</td>
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<tr>
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<td>192 (192L)</td>
<td>505w</td>
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</tr>
</tbody>
</table>

The Star Power™ reflector is an excellent system which provides great value and performance.
PRODUCT SPECIFICATIONS

- Housing: Aluminum
- LED: Luxeon M Series by Lumileds
- Optics: Star Power, Type Tennis Optic (TT) distribution
- Watts: 168-594 Watts
- L70: 96,000 to 161,000
- UL: UL 1598 Listed

Driver: Dimming driver as standard by Advance or UL

Kelvin: 4000, or 5500
Finish: 5 Millimeters Powder Coat
Hardware: None
Warranty: Standard Warranty is 5 years for Driver and LEDs

PRODUCT DIMENSIONS

### VUE - LUMEN DATA CHART

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>TT Optic</th>
<th>Lm/W</th>
<th>Calculated L70 Hours</th>
<th>SYSTEM WATTS</th>
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</tr>
</tbody>
</table>

* DLC approval may not apply to all configurations

**DesignLights Consortium (DLC) qualified Product. Some configurations of this product family may not be DesignLights Consortium (DLC) listed, please refer to the DLC qualified products list to confirm listed configurations. [http://www.designlights.org](http://www.designlights.org)**
Tennis Arms are easy to install by slipping a 12-inch tall fitter over pole or tenon, then fastened with 3/16" diameter steel bolts. Arms are designed with a standard 3° tilt and have a very low EPA at a maximum arm length of 5' from pole (including arm extensions for U-Arm and H-Arm). All arms are finished with a 5 millimeter powder coat to match luminaires. Tennis fixtures come with standard length wire of 6 feet for fast connection. Wires are protected from outside elements with tight-fitting black plastic snap-in end caps.

### Project Name:

<table>
<thead>
<tr>
<th>Cat #</th>
<th>Arm Length</th>
<th>Mounting</th>
<th>Pole Diameter To Fit Over</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Arm Tennis (SAT)</td>
<td>2' (2)</td>
<td>Single (0)</td>
<td>2 3/8&quot; OD (238R)</td>
<td>Bronze (BRZ)</td>
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<tr>
<td>Double Arms Tennis (DAT)</td>
<td>3' (3)</td>
<td>Double 90° (D90)</td>
<td>3&quot; OD (3R)</td>
<td>3 1/2&quot; OD (312R)</td>
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<tr>
<td>Double 70° (D70)</td>
<td>4&quot; (4)</td>
<td>Double 180° (D180)</td>
<td>4&quot; OD (4R)</td>
<td>4 1/2&quot; OD (412R)</td>
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<tr>
<td>U-Arm Tennis (UAT) *For Doubles Only</td>
<td>5' (5)</td>
<td>U-Form (U) *For Double U-Arms Only</td>
<td>5&quot; OD (5R)</td>
<td>5 1/2&quot; OD (512R)</td>
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<tr>
<td>Triple 90° (T90)</td>
<td>Triple 120° (T120) *Round Only</td>
<td>3&quot; SQ (3S)</td>
<td>3 1/2&quot; SQ (312S)</td>
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<td>Quad 70° (Q70)</td>
<td>Quad 90° (Q90)</td>
<td>4&quot; SQ (4S)</td>
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<td>H-Form (H) *For Quad H-Arms Only</td>
<td>5&quot; SQ (5S)</td>
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</tbody>
</table>
SINGLE, DOUBLE, TRIPLE or QUAD TENNIS ARMS

U-ARM TENNIS (UAT)

H-ARM TENNIS (HAT)

*Vue Tennis fixtures shown above

UAT is designed for double fixture heads. Arm lengths start from 2' to 5' max.

HAT is designed for quad fixture heads. Arm lengths start from 2' to 5' max.