

Keith Swindoll
Indian Hills Country Club

Feb 15, 2021

Dear Keith,

We have studied your existing tennis court lights and locations with diligence and have two options to present. Although I have been a true tennis court lighting manufacturer for over 35 years, we approach your project as accomplished tennis players and not lighting salespeople. NLS has now also lit over 230 multi-court tennis facilities and clubs with our VUE Tennis Fixture.

We don't need to replace every existing fixture to achieve USTA Level II Tournament 75-foot candles or USTA Level III Intermediate to Advanced 50 foot candle lighting levels.

Our plan is to use your existing poles and arms.

- Remove all 88- Existing 1080 watt Metal Halide fixtures
 - Replace with 52- 809 Watt fixtures for Level II or Replace with 52- 594 Watt fixtures for USTA Level III.

Our attached "Executive Analysis" shows that both Options present similar 2 ½ year payback based on their cost and energy savings calculations at 11 cents per KWH. However, over a ten-year period we calculate a \$86,000 greater payback with the 809 watt USTA Tournament Level II fixtures at 809 Watts.

We provide Indian Hills with a Ten-Year Lift, Labor, and Parts Warranty, assuming that the old wire is changed in the pole and arms in case of any frayed wires. Our competitors have zero labor and lift.

The Vue Tennis fixtures proposed have a limited tilt that is offset by a front side visor to reduce glare for neighbors, players, and the environment, making them full cutoff and dark sky approved.

Our fixture's LED light source is concealed and recessed 2-4 inches above the bottom plane of the fixture to eliminate glare. We have a testimonial from Dave Crawford, Founder of the International Dark Sky Association endorsing our system for its low glare.

Our "Luxeon MX LED's depreciate only ½ percent per year compared to cheaper import fixtures and our other competitors at 3-5 % per year. Our "VUE" is a 20-30 year solution for the Club.

Indian Hill Country Club Project Costs with Labor

- The 75 foot candle USTA Level II bid with labor is \$93,080
- The 50 foot candle USTA Level III bid with labor is \$72,540

Everything you would ever need to know about tennis court lighting is contained in our Indian Hills Country Club Lighting Power Point that is attached and catered to your facility.

I would like to do a presentation for your board for thirty minutes at your next meeting if that is OK.

Thanks,

Bill

NLS
LIGHTING

Bill Hein

President

LC (Lighting Certified NCQLP)

IES Security and Crime Committee



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LIGHTING

INDIAN HILLS COUNTRY CLUB

February 15, 2021

TABLE OF CONTENTS

SECTION 1 – Executive Summary

SECTION 2 – USTA Lighting Criteria

SECTION 3 – VUE Technological Advantages

SECTION 4 – Glare Control

SECTION 5 – References and Testimonials

SECTION 6 – Marketing

SECTION 7 – 10 Year Warranty

- **SECTION 1 - EXECUTIVE SUMMARY**
 - VUE TENNIS - CLASS LEVEL 2, CLASS 3
 - PURCHASE
 - FINANCE
 - EXCEL LIST OF ENERGY SAVINGS & MAINTENANCE ASSUMPTIONS
 - QUOTATIONS

Executive Analysis Summary

Purchase



Executive Analysis Tennis & Sports Indian Hills Country Club

Purchase

	Class Level 2	Class Level 3
Payback	2.6 years	2.7 years
Return of Investment (ROI)	38.41%	37.49%
Estimated One Year Savings	\$35,754	\$27,199
Estimated Three Year Savings	\$107,262	\$81,596
Estimated Ten Year Savings	\$357,541	\$271,985
Project Cost (Material + Labor)	\$93,080	\$72,540
Date: 2/15/2021		

Executive Analysis Summary

Finance



Executive Analysis Tennis & Sports Indian Hills Country Club

Finance

	CLASS LEVEL 2		CLASS LEVEL 3	
Project Cost (Material + Labor)	\$93,080		\$72,540	
	Monthly	Annually	Monthly	Annually
Estimated Additional Revenue	\$1,800	\$21,600	\$900	\$10,800
Estimated Energy Savings + Maintenance	\$1,180	\$14,154	\$1,367	\$16,399
Estimated Add'l Revenue + Energy + Maintenance Savings	\$2,980	\$35,754	\$2,267	\$27,199
Estimated Payment	\$1,862	\$22,339	\$1,451	\$17,410
Positive Cash Flow Years 1-5	\$67,075		\$48,945	
Positive Cash Flow Years 6-10	\$178,771		\$135,993	
Positive Cash Flow Over 10 Years	\$245,845		\$184,937	

2/15/2021

Excel List of Energy Savings & Maintenance Assumptions

Indian Hills Country Club

Reference	Qty Existing Fixtures	Existing Fixture Wattage	Hours per Day	Days per year	Existing KWH / Year	KWH Rate	Existing Annual Energy Expense	Annual Energy Savings	Annual Maintenance Savings	Additional Annual Revenue	Year One Estimated Savings	Year three Estimated Savings	Year Ten Estimated Savings
Existing	88	1080	5	365	173,448	\$0.1100	\$19,079	\$10,634	\$3,520	\$21,600	\$35,754	\$107,262	\$357,541
Existing	88	1080	5	365	173,448	\$0.1100	\$19,079	\$12,879	\$3,520	\$10,800	\$27,199	\$81,596	\$271,985

Reference	Qty Proposed Fixtures	Wattage of Proposed fixtures	Hours per Day	Days per year	Proposed KWH / Year	KWH	Proposed Annual Energy Expense
Class 2	52	809	5	365	76,774	\$0.1100	\$8,445
Class 3	52	594	5	365	56,371	\$0.1100	\$6,201

Annual Maintenance per Fixture		
88	\$40	\$3,520

Reference	Qty Proposed Fixtures	Price per Fixture	Total Quoted	Total Labor	Project Cost	Payback Years	Return of Investment (ROI)
Class 2	52	\$1,485	\$77,220	\$15,860	\$93,080	2.6	38.4%
Class 3	52	\$1,090	\$56,680	\$15,860	\$72,540	2.7	37.5%

ASSUMPTIONS
Maintenance Savings = \$40/year/existing fixture Existing Fixture Wattage = 1080 watts

Financing Option					
Class 2	Project Cost	Loan Rate	Monthly payment	Monthly Savings	
	\$93,080	\$0.020	\$1,862	\$2,980	
Cash Flow	Monthly (Years 1-5)	60 months (Years 1-5)	Monthly (Years 6-10)	61 months (Years 6-10)	Over 10 years
	\$1,118	\$67,075	\$2,980	\$178,771	\$245,845
Class 3	Project Cost	Loan Rate	Monthly payment	Monthly Savings	
	\$72,540	\$0.020	\$1,451	\$2,267	
Cash Flow	Monthly (Years 1-5)	60 months (Years 1-5)	Monthly (Years 6-10)	61 months (Years 6-10)	Over 10 years
	\$816	\$48,945	\$2,267	\$135,993	\$184,937

Estimated Additional Generated Revenue**						
	80 % of Courts	Hours per Day	Days per year	Revenue Increase per hour per Court	Additional Monthly Revenue	Additional Annual Revenue
Class 2	7.2	5	300	\$2.00	\$1,800	\$21,600
Class 3	7.2	5	300	\$1.00	\$900	\$10,800
**Estimated Additional Generated Revenue based on: Membership Retention New Membership Increase in Booked Court Time Increase in Lessons and Clinics Increase in Food and Beverage Sales						

SECTION 2 – Lighting Design

- Photometric Class Level 2
- Photometric Class Level 3
- Heather Blythe – Letter regarding Primary Playing Area (PPA), 35 USTA designated locations
- USTA Primary Playing Area Lighting Level Requirements for Professionals, College Play, Clubs, and Parks & Recreation
- USTA Recommended Illumination – 35 Points PPA

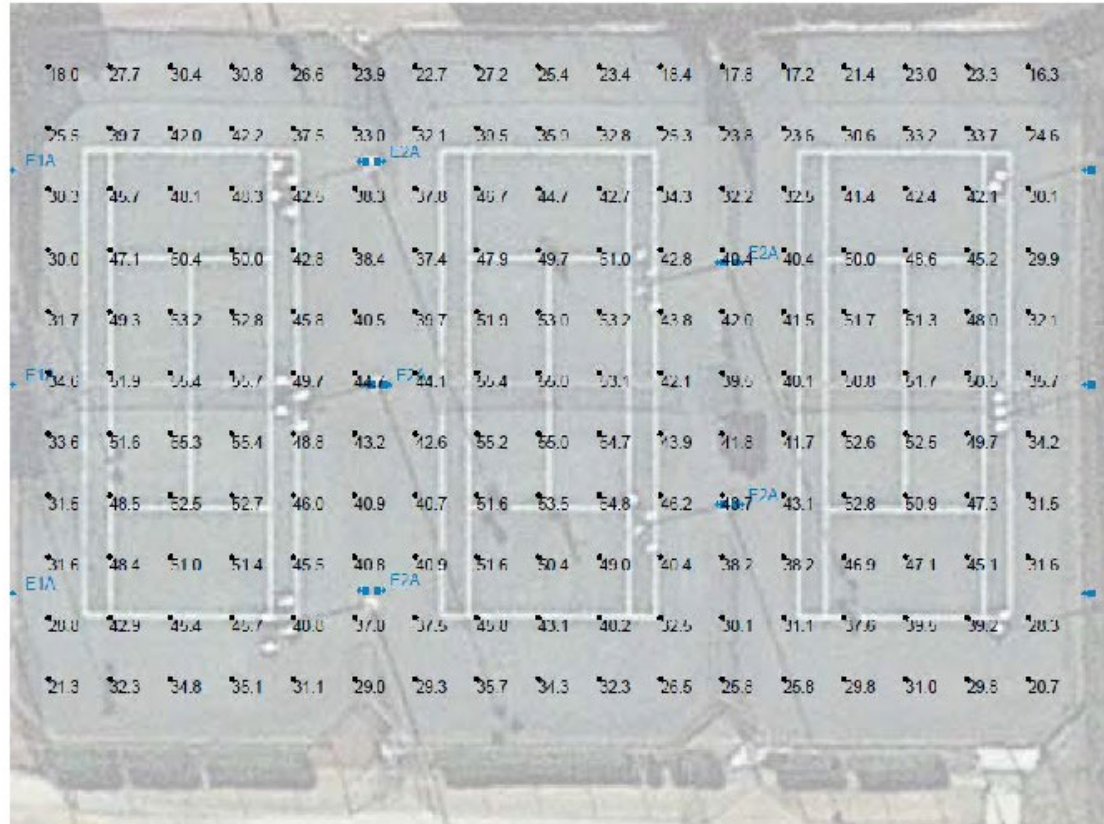
Photometric - Class Level 2

Set of Three Courts



Photometric - Class Level 3

Set of Three Courts



United States Tennis Association Primary Playing Area Lighting Requirements
35 Specific USTA Designated Locations on the Court to take foot-candle measurements

Heather Blythe Letter from the USTA

Photometric analysis should extend to the Primary Playing Area (PPA) of each court, which extends 6 feet outside the doubles sidelines and 10 feet behind the baselines.

What you need to know before you read on further is that the photometric analysis is a computer modeling of your facility and how the proposed lighting system will light the space. It shows the amount of light at 3' above the court allowing for light loss and light crossover. It provides minimum and maximum lighting as well as a grid of lighting amounts all along the court.

It also provides a uniformity ratio that tells how uniform the light is across the court. A 1:1 ratio is the ideal (but not necessary for recreational tennis). Anything over 2:1 does not meet ASBA tennis industry standards and is considered substandard for recreational tennis facilities.

ASBA lighting standards have been established taking the PPA into account. The PPA is included because tennis is sport that is played not only within the court itself but around the court, so it is important to ascertain the adequacy of the lighting in all of this space. If the lighting is not right, then the player's eyes will have difficulty tracking the ball as it moves through the court. I am supplying you with the ASBA chapter on lighting as well as a cut of that chapter that shows the lighting requirements for facilities (broken down by what level of tennis played).

Please have your lighting contractor provide updated photometrics that take the 35 PPA points into consideration. Then evaluate if these new calculations meet the below noted Class III lighting standards below. If they do not then it is recommended that you have a discussion with your lighting contractor to see what layout changes can be made to satisfy these recommendations.

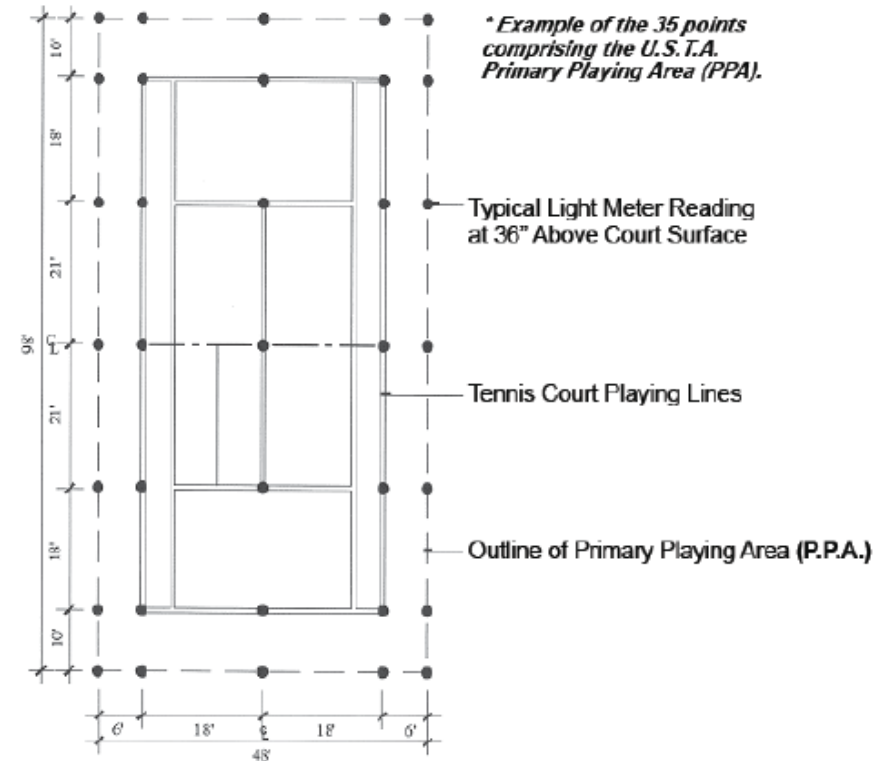
Class III lighting standards recommend an average of 50 fc with a max/min of 2.0 within the PPA.

Heather Blythe
United States Tennis Association
National Facilities Assistance Consultant
919-244-5586

USTA, Heather Blythe Primary Playing Area (PPA) Requirement

USTA Recommended Primary Playing Area (PPA)

U.S.T.A. RECOMMENDED ILLUMINATION



RECOMMENDED ILLUMINATION FOR OUTDOOR TENNIS FACILITIES

RECOMMENDED HORIZONTAL ILLUMINATION				
Performance Criteria	Class I	Class II	Class III	Class IV
Average Maintained Horizontal Footcandles within PPA (1,2,4)	125+ (1250 lux)	75+ (750 lux)	50+ (500 lux)	30+ (300 lux)
Minimum Maintained Horizontal Footcandles within PPA (2,4)	100+ (1000 lux)	60+ (600 lux)	40+ (400 lux)	20+ (200 lux)
Maximum Uniformity Ratio (3)	1.5	1.7	2.0	2.0

RECOMMENDED VERTICAL ILLUMINATION				
Performance Criteria	Class I	Class II	Class III	Class IV
Average Maintained Vertical Footcandles within PPA (1,2,4)	50+ (500 lux)	30+ (300 lux)	20+ (200 lux)	NA
Maximum Uniformity Ratio (3)	2.0	3.0	3.0	NA

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			
Class I (1)	Class II	Class III	Class IV
PROFESSIONAL	College (2)	College (4)	High School (6)
INTERNATIONAL	Tennis Clubs (6)	High School (6)	Tennis Clubs (6)

USTA Recommended Illumination

SECTION 3 – VUE Technological Advantages

- Independent Depreciation Rate Report by Future Lighting Solutions stating the VUE depreciates 5-9times slower than competitor import and domestic fixtures
- Independent Competitor's Acrylic & Polycarbonate Lens Yellowing Chart by Dow Corning, state that fixtures utilizing Acrylic or Polycarbonate Plastic optics begin to yellow after 1 ½ years
- Don't Lose Sight of Your Game flyer showing how the VUE fixture illuminates lobbs and the top of the windscreen behind the baseline
- VUE Recessed and Hidden Light Source Versus competitors that have their light sources located or hanging at the bottom plane of their fixture
- Import Fixture Diagrammatic Quality Report and it's accelerated effect on depreciation and imminent failures

Independent Depreciation Rate Report by Future Lighting Solutions stating the VUE depreciates 5-9 times slower than competitor import and domestic fixtures.

LED DEPRECIATION RATE COMPARISON

The life hours published by LED fixture manufacturers equate to how long it takes their fixture to depreciate 30%. LED fixtures will never extinguish.



MANUFACTURER	LED	CURRENT	TEMP	L70
NICHIA	E21	700	105	93,800
			120	111,000
			85	189,000
	219C	700	105	75,000
			105	78,700
			120	107,000
		1200	85	134,000
			105	54,100
			120	98,500
			105	48,500
		1500	120	49,100
			120	118,000
SEOUL SEMI	Y19	700	105	101,000
			85	138,000
		1000	85	115,000
			105	85,000
	Y22	1050	105	178,000
			85	119,000
		1500	105	78,000

NLS LED DEPRECIATION

MANUFACTURER	LED	CURRENT	TEMP	L70
LUMILEDS	MX	1050	105	483,000
	5050	200	85	145,000
				120,000

This LED Depreciation Chart is put together by Future Electronics, who sells each of the different LEDs listed, and has no vested interest in the published results. Hours published are how long it takes a fixture to depreciate 30% (L70) until the fixture is considered a failure needing replacement.

- Please note that NLS uses Lumileds "MX" LED's, located at the bottom of the chart, which are calculated to have 30 percent depreciation after 483,000 hours at 1050mA at 105°C or below.
- When an Imported LED fixture manufacturer commonly advertises 50,000 or 60,000 hours life, their fixture will depreciate eight to nine times faster than our NLS fixture.
- When an LED manufacturer advertises 100,000 hours life, which is also common, their fixture will depreciate 4-5 times faster than our fixture.
- Future Lighting Solution calculations represent best case laboratory scenarios. Dirt, moisture, humidity, power surges, yellowing of acrylic or polycarbonate lenses and poor process control significantly increase published rates of depreciation.
- A fixture's 50,000 hours of advertised life at 30 percent depreciation is more like 25,000 hours in the field.
- Lights operating 365 days per year at 12 hours per night total 4,380 hours per year. This equates to imported 50,000 or 60,000 hour fixtures lasting a maximum of five years before they lose 30 percent of their output and require replacement.
- In other words, imported 50,000 – 60,000 hour fixtures are "Disposable Fixtures".
- NLS fixtures are easily a 20-30 year solution before they depreciate 30 percent.

Acrylic & Polycarbonate Lens Yellowing Chart by Dow Corning



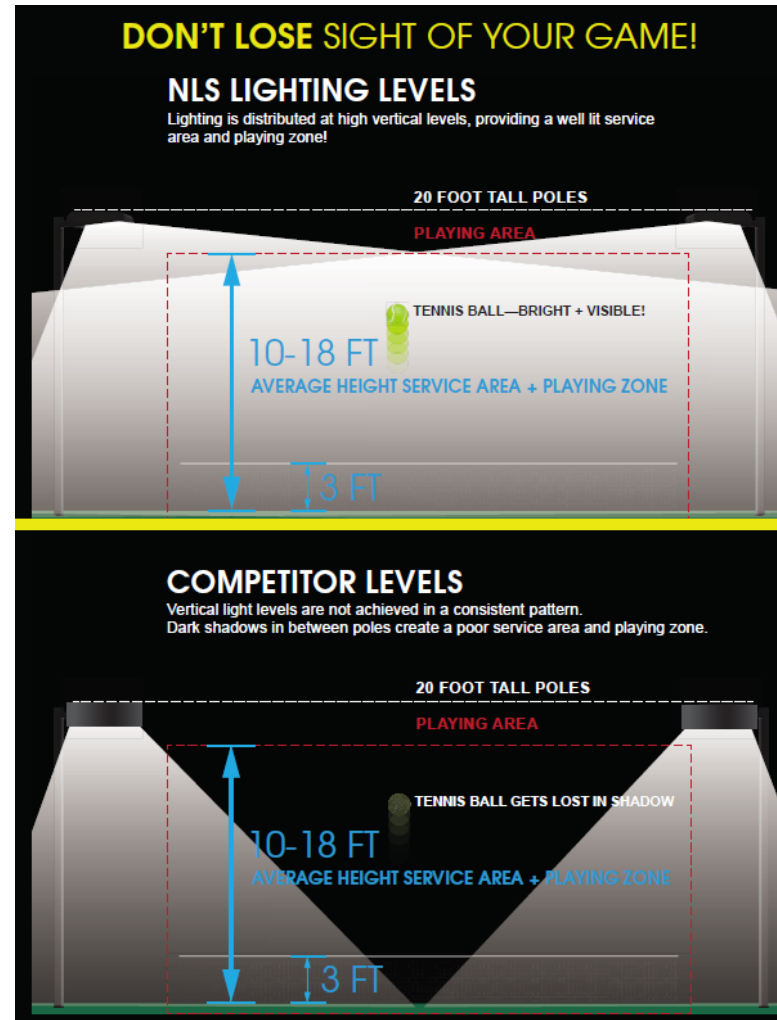
Independent Competitors Acrylic & Polycarbonate Lens Yellowing Chart by Dow Corning

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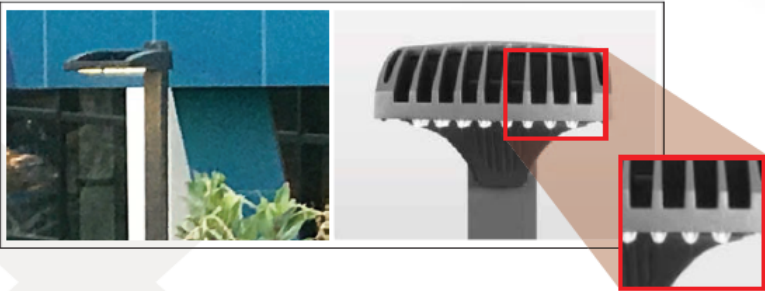
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Don't Lose Sight of Your Game
shows how the VUE fixture
illuminates lobs and the top of
the windscreen behind the
baseline where competitors light
down only



OPTICS | COMPETITOR vs NLS

VUE recessed and hidden light source vs competitors that have their light sources located or hanging at the bottom plane of their fixture



COMPETITOR OPTICS

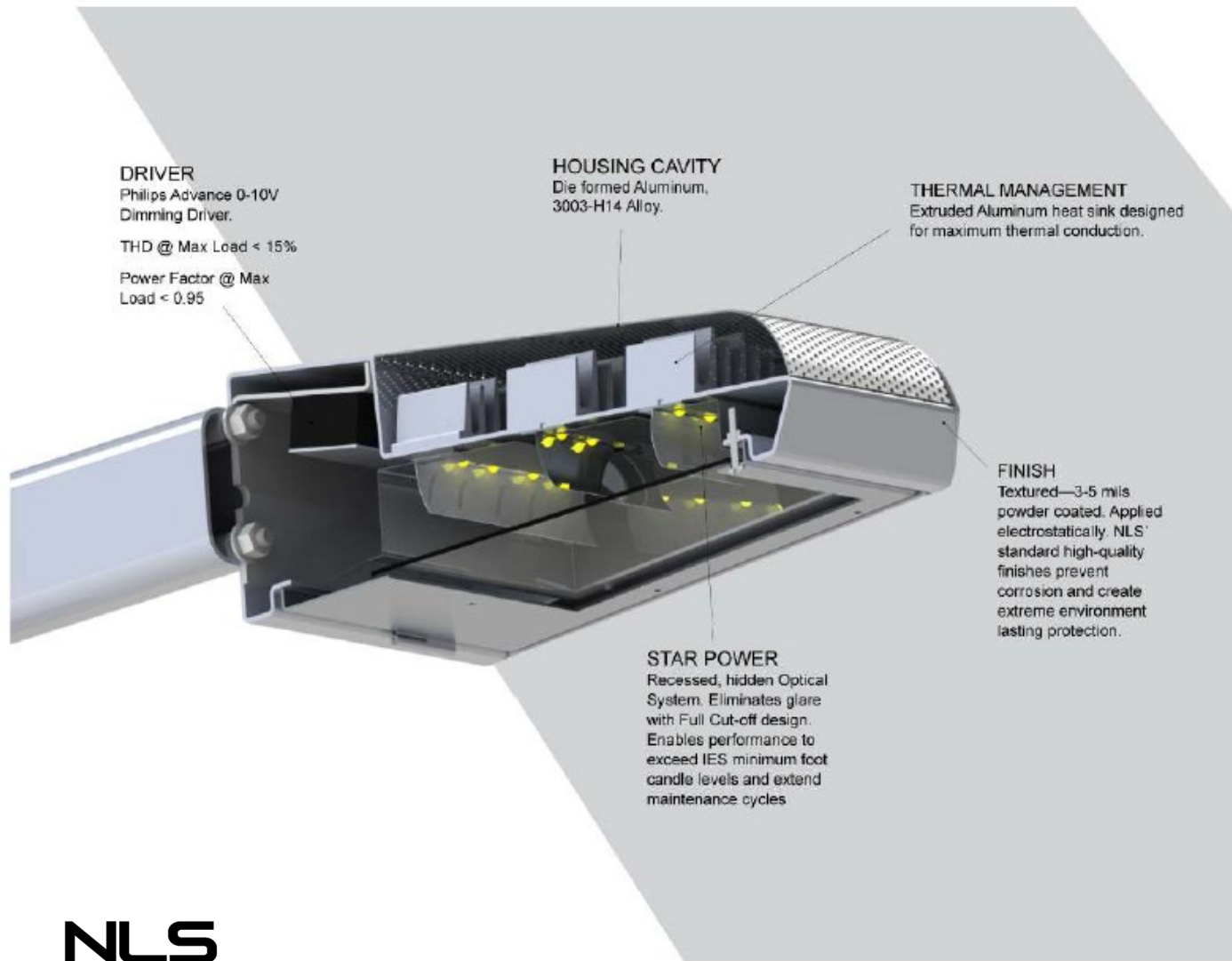
- Other optics hang down like giant illuminated teeth
- Visible for hundreds of yards away
- Cause distraction by glare
- Neighbors request shields
- City councils don't approve
- Through time the lenses oxidize and get sand blasted, then become white instead of clear which creates even more glare



NLS HIDDEN OPTICS

- LEDs are hidden 2 to 3 inches deep into the fixture, protected by a flat clear lens
- Full Cut off design; no glare, no light pollution
- Complies to Dark Sky and is neighborhood friendly
- Precise uniformity with high vertical and horizontal lumens
- Outstanding light distribution types and footcandles





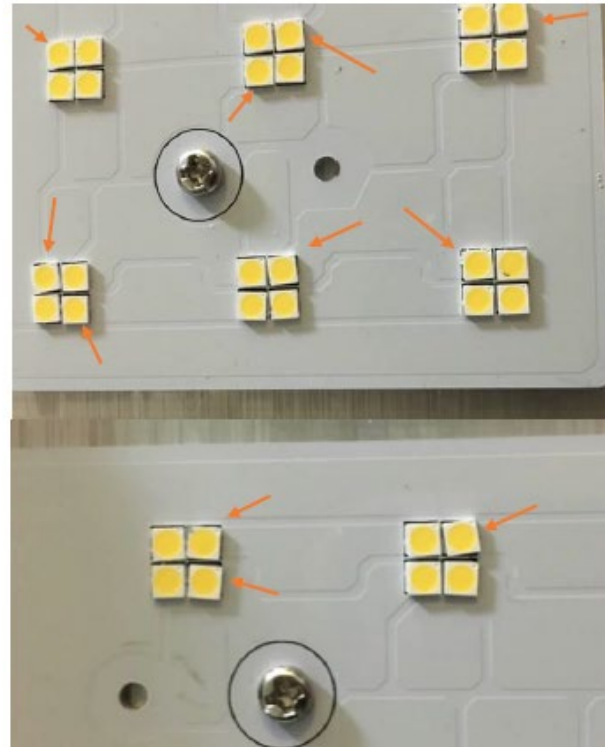
VUE recessed
and hidden light
source

Import Fixture
diagrammatic quality report and
its accelerated effect on
depreciation and imminent
failures

Imported Fixture



Cattywampus – Fixtures not aligned properly after the reflow process.



Poor Thermal Paste Process

The thermal heat transfer paste between the circuit board and the aluminum fixture heat sink cannot have any gaps.

All LEDs overheat over time because the heat is not being transferred properly from circuit board to fixture heat sink, causing additional severe light output depreciation significantly below what is published, that is compounded with poor pick and place processing.



Import Fixture
Thermal Paste Process

SECTION 4 – Glare Control

- VUE Testimonial & Curriculum Vitae from Dave Crawford, world's leading expert on glare and light trespass as it affects neighbors, dark sky, and the tennis application itself
- Non-Glare 809-Watt VUE Photo of El Dorado Tennis Center, Long Beach California

David Crawford Testimonial

David L. Crawford

To Whom it may concern,

2/25/15

I am the Founder and retired CEO of the International Dark Sky Association. The IDA was created to protect the night time environment against light pollution. Tonight's battle is different in that lighting has converted to LED, and we are combatting color temperature, meaningless lumen outputs, and poorly designed outdoor lighting products.

This letter is intended to be a review of the VUE Series LED fixture by NLS Lighting. From a dark sky and light trespass standpoint, the "VUE" is an excellent choice for most any outdoor application. To begin with, the "VUE" is one of the only if not the only LED fixture I have seen which has the light source recessed two to three inches above the bottom plane of the housing. Additionally NLS has designed multiple optical choices to fit the application of almost any lighting design. The "VUE" hides its light source and reflects light where it is required without waste. The "VUE" is an excellent choice particularly considering that many fixtures are evaluated by total lumens regardless of whether or not they are targeted correctly. Also most other companies I have observed either use lensed optics located at or just below the bottom plane of the fixture and so are impossible to shield from long distances from any vantage point below the bottom plane of the fixture.

The President of NLS Lighting, Bill Hein, has been a devoted advocate to dark sky and full cutoff lighting fixtures. Mr. Hein was instrumental in the development of outdoor luminaires with flat lenses that outperformed convex lensed luminaires that were being used throughout the country. I am happy to see that Mr. Hein has designed a new patent pending optical system once again (The "Star Power Optical System") that has high application efficiency performance while hiding the light source deep within the fixture housing.

If you have any questions whatsoever regarding this letter please do not hesitate to write or to call myself.

Sincerely,

Dave Crawford

Dave Crawford

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David L. Crawford

520-906-0445 idasony@aol.com

Villas de Carlsbad, Carlsbad CA 92008, A-310

Wife, Mary, for 50 years, died in Nov 2012. Was very active in most activities below. A soulmate.

Ph.D. (Astronomy): University of Chicago, 1958.

Honorary Doctor of Humane Letters, New England College of Optometry, 2004.

Based on research and education about night vision and related issues.

Positions Held:

Assistant Professor, Physics and Astronomy, Vanderbilt University, 1958-1959.

Staff Astronomer at Kitt Peak National Observatory (NOAO), 1960-1995. Tenured in 1966.

Led staff in citations to research papers most of those years. Published extensively.

Active also in widespread lighting pollution control efforts in the years from 1970 to retirement.

Project Manager for NOAO's two-4-m telescopes (KPNO & CTIO), 1963-1973.

Build on time and in budget; supervised over 150 engineering staff on this \$20 M (in 1960 \$'s) project.

Illuminating Engineering Society of North America (IESNA):

Fellow, 1997. Special Presidential Award, 2001.

Member of the Roadway Lighting Committee, chaired its Light Trespass Subcommittee.

Past Chairman of the Outdoor Environmental Lighting Committee.

Member of the Sports Lighting Committee, the Security Lighting Committee, Aging Eye, and others.

CIE, Commission International de l'Eclairage (International Commission on Illumination).

Member of the many committees, especially in Div 4 & Div 5 dealing with outdoor lighting.

In both IESNA and CIE (etc), wife Mary was very active and a team member until she dies in 2012.

Institute for Lighting Engineers (UK), member and received their (first ever) Companion Award, 1996.

American Astronomical Society:

Member of the Council of the AAS, 1972-1975. Received the AAS's Van Biesbroeck Award, 1996.

Past Chairman of the AAS's Committee on the Light Pollution, Radio Interference, and Space Debris.

Astronomical Society of the Pacific: Member of the Board of Directors, 1970-1976 and 2005-2007.

Royal Astronomical Society of Canada, Honorary Member, 1997.

Astronomical Society of Malta, Honorary Member, 2001.

International Astronomical Union: Member of and active in many IAU Commissions:

Astronomical League: Outstanding Service Award, 1992. Honorary Member, 2001.

Western Amateur Astronomers' Blair Gold Medal Award, 2005

American Association for the Advancement of Science:

Fellow. Member of the Council, 1986-1989. Member of the Committee on Council Affairs, 1986-1988.

Other Honors:

Asteroid named for David Crawford: #7327 Crawford.

Other: Past member of the committees, local and national, in astronomy and lighting communities.

Presented many scientific papers and talks and public talks to above and below organizations.

Attended many educational seminars and workshops on management, technology, and lighting.

Member and Past Chairman of the Tucson/Pima County Outdoor Lighting Code Committee.

Advisor for numerous outdoor lighting code enactments, local national and international.

Extensive national and international travel, including two sabbatical leaves in Europe.

International Dark-Sky Association (IDA):

Co-Founder and Executive Director (1988-2008) of this tax-exempt non-profit organization whose goals are to build awareness of the problems of light pollution as it affects astronomy and the public.

Research and other professional interests, past and present:

Leadership in support of preserving dark nighttime skies for astronomy and the public and in prompting the use of quality outdoor nighttime lighting, for enhancing the value of the night and of energy savings.

Astronomical Photometry. Open Clusters. Galactic Structure, Observational techniques.

Public relations in support of astronomy, science education, and quality outdoor lighting. Shapley

Lecture tours, Elderhostels, Open University and University of Arizona Continuing Ed programs, and

classes on financial math and analysis, business law, investment concepts, commercial and residential real estate.

Many talks and seminars, local national, and international to the public, businesses, governments,

and others about the advantages of quality outdoor lighting. Published many articles on these topics.

Personal Interests. Many, including travel, good food and wine, reading, writing, photography. In all

these with wife Mary until she unfortunately died in 2012 after a long illness. Three daughters, Christine, Deborah, and Lisa, and seven grandchildren, are a strong personal interest as well.

El Dorado Tennis Center,
Long Beach, California
Non-Glare
809 Watt VUE

NLS
LIGHTING



El Dorado Tennis Center—15 Courts | Long Beach, CA

SECTION 4 – Recent References and Testimonials

- Approximately 200 Facility National Tennis reference List
- Testimonial – Steve Spearman, Spearman Clubs for Laguna Niguel Racquet Club and Racquet Club of Irvine

Tennis References Over 230 Facilities

TENNIS RECENT FACILITIES

109TH STREET PARK
LOS ANGELES, CA

ACADEMIA SANCHEZ-CASAL
FLORIDA
NAPLES, FL

ALGIN SUTTON PARK
LOS ANGELES, CA

ALICIA PARK
ROHNERT PARK, CA

ALMADEN SWIM & RACQUET CLUB
SAN JOSE, CA

ALTA VISTA TENNIS CENTER
REDONDO BEACH, CA

ALTADENA COUNTRY CLUB
SAN JOSE, CA

AMADOR PARK
PLEASANTON, CA

AMERIGE HEIGHTS TENNIS COURTS
FULLERTON, CA

ARCADIA TENNIS CENTER
ARCADIA, CA

ARGONAUT PARK
ALISO VIEJO, CA

ATASCADERO HIGH SCHOOL
ATASCADERO, CA

AUDUBON TENNIS CLUB
NAPLES, FL

AVALON BAY APARTMENTS COURTS
LOS ANGELES, CA

AZUSA PACIFIC COLLEGE TENNIS
COURTS
AZUSA, CA

BALBOA PARK TENNIS
SAN DIEGO, CA

BALBOA TENNIS CLUB
SAN DIEGO, CA

BAY CLUB CARMEL VALLEY
DEL MAR, CA

BAY CLUB COURTSIDE
LOS GATOS, CA

BAYOU BLUFF TENNIS CLUB
GULFPORT, MS

BEAUMONT CHERRY VALLEY REC
AND PARK
BEAUMONT, CA

BEVERLY HILLS TENNIS CLUB
BEVERLY HILLS, CA

BILLIE JEAN KING TENNIS CENTER
LONG BEACH, CA

BIRMINGHAM COUNTRY CLUB
BIRMINGHAM, AL

BLACK ROCK YACHT CLUB
BRIDGEPORT, CT

BOBBY BIGGS TENNIS CLUB
ENCINITAS, CA

BOYS & GIRLS CLUB
SAN CLEMENTE, CA

BROOKHURST PARK
ANAHEIM, CA

BUTTONWOOD TENNIS CLUB
STUART, FL

CANE LAKES PICKLEBALL
DAYTONA BEACH, FL

CANYON HIGH SCHOOL
VALLEJO, CA

CAPE FEAR TENNIS CLUB
CAPE FEAR, NC

CAPRIOLA PARK
HENDERSON, NV

CARMEL VALLEY TENNIS CLUB
SAN DIEGO, CA

CAROLINA FOREST HIGH
SCHOOL
MYRTLE BEACH, SC

CINNAMON RIDGE PARK
HENDERSON, NV

CLARK PARK TENNIS
HERMOSA BEACH, CA

COLUMBIA COLLEGE TENNIS
COURTS
SONORA, CA

CONWAY HIGH SCHOOL
CONWAY, SC

COPELAND-COX MOBILE TENNIS
CENTER
MOBILE, AL

CORDEVALLE TENNIS AND GOLF
CLUB
SAN MARTIN, CA

CORONADO SHORES
RESIDENTIAL COMPLEX
CORONADO, CA

COUNTRY CLUB OF CHARLESTON
CHARLESTON, SC

COURTSIDE CLUB
LOS GATOS, CA

CREAN LUTHERAN TENNIS
STADIUM
ANAHEIM, CA

CROWN COLONY GOLF AND
COUNTRY CLUB
FORT MYERS, FL

CUPERTINO SPORTS CENTER
CUPERTINO, CA

DANIEL ISLAND CLUB
CHARLESTON, SC

DAVID OVITS RETREAT
HEMET, CA

DEL MAR COUNTRY CLUB
RANCHO SANTA FE, CA

DISCOVERY PARK
HENDERSON, NV

DOROTEA PARK
ROHNERT PARK, CA

DOS ISLOS LAS PARK
HENDERSON, NV

DUPONT COUNTRY CLUB
WILMINGTON, DE

DWIGHT DAVIS RACQUET CLUB
ST. LOUIS, MO

EAGLE PARK
ROHNERT PARK, CA

ECHO PARK RECREATION CENTER
LOS ANGELES, CA

ECHO PARK TENNIS CENTER
LOS ANGELES, CA

EL DORADO COUNTRY CLUB
MCKINNEY, TX

EL DORADO COUNTRY CLUB
INDIAN WELLS, CA

EL DORADO TENNIS CENTER
LONG BEACH, CA

EL SERENO PARK BOYLE HEIGHTS
LOS ANGELES, CA

EMERALD BAY COMMUNITY TENNIS
LAGUNA BEACH, CA

EVANSTON HIGH SCHOOL
EVANSTON, ILLINOIS

FAIRBANKS RANCH COUNTRY CLUB
RANCHO SANTA FE, CA

FOUR SEASONS CANE BAY
SUMMERVILLE, SC

FRANK FISHER PARK
FREMONT, CA

FREEDOM PARK TENNIS
PALM DESERT, CA

GELLERY PARK
DAILY CITY, CA

GOLF PARK
ROHNERT PARK, CA

GRANADA HILLS RECREATION
CENTER
GRANADA HILLS, CA

GREEN SEA FLOYDS HIGH SCHOOL
GREEN SEA, SC

GRIFFIN CLUB OF LOS ANGELES
LOS ANGELES, CA

HERMOSA BEACH TENNIS CENTER
HERMOSA BEACH, CA

HOLLY HILL OF DAYTONA
PICKLEBALL
HOLLY HILL, FL

INN AT PERRY CABIN
ST. MICHAELS, MD

INTER LACON COUNTRY CLUB
WINTER PARK, FL

TON CLUB
MT PLEASANT, SC

ITENNIS
ARCADIA, CA

JACK KRAMER CLUB
ROLLING HILLS ESTATES, CA

JASPER HIGH SCHOOL
JASPER, AL

JIM GILLIAM TENNIS CENTER
LOS ANGELES, CA

KEOWEE KEY FITNESS & RACQUET
CLUB
SALEM, SC

KESWICK HALL CLUB
KESWICK, VA

KINGSTON RACQUET CLUB
KINGSTON, ON

KIAWAH ISLAND GOLF CLUB
KIAWAH ISLAND, SC

L.A. TENNIS CLUB
LOS ANGELES, CA

LA CAÑADA FLINTRIDGE COUNTRY
CLUB
LA CAÑADA FLINTRIDGE, CA

LA CIENEGA TENNIS CENTER
BEVERLY HILLS, CA

LA JOLLA BEACH & TENNIS CLUB
LA JOLLA, CA

LADYBUG PARK
ROHNERT PARK, CA

LAGUNA NIGUEL RACQUET CLUB
LAGUNA NIGUEL, CA

LAKE STREET PARK
LOS ANGELES, CA

LANARK PARK
LOS ANGELES, CA

LANARK RECREATION CENTER
CANOGA PARK, CA



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TENNIS RECENT FACILITIES

LAWRENCE WELK RESORT
ESCONDIDO, CA

LEE LECLEAR TENNIS CENTER
HOUSTON, TX

LEMON GROVE RECREATION CENTER
LOS ANGELES, CA

LIDO ISLE COMMUNITY ASSOC.
NEWPORT BEACH, CA

LIFETIME FITNESS
DYPRESS, TX

LIVE OAK PARK
MANHATTAN BEACH, CA

LOREN MILLER PARK
LOS ANGELES, CA

LUCIDO PRIVATE PARK
SAN DIEGO, CA

MAGNOLIA PARK
ROHNERT PARK, CA

MAGNOLIA PARK MUNICIPAL COURTS
ROHNERT PARK, CA

MAJIBU RACQUET CLUB
MAJIBU, CA

MANDARINAS TENNIS CLUB
NAYARIT, MEXICO

MANHATTAN COUNTRY CLUB
MANHATTAN BEACH, CA

MANHATTAN HEIGHTS PARK
MANHATTAN BEACH, CA

MARBLE HEAD PARK
SAN CLEMENTE, CA

MARIN COUNTRY CLUB
NOVATO, CA

MARRIOTT HOTEL SOUTH RIDGE
PALM DESERT, CA

MAXWELL PARK
ANAHEIM, CA

MEMORIAL PARK TENNIS COURTS
CUPERTINO, CA

MIRA COSTA HIGH SCHOOL
MANHATTAN BEACH, CA

MISSION HILLS PARK
HENDERSON, NV

MISSION SAN JOSE COMMUNITY PARK
FREMONT, CA

MODESTO JUNIOR COLLEGE CAMPUS
MODESTO, CA

MORANDA PARK
PORT HUENEME, CA

MORGAN HILL
MORGAN HILL, CA

MORLEY FIELD TENNIS
SAN DIEGO, CA

MORRO BAY HIGH SCHOOL
MORRO BAY, CA

NEXTON RACQUET CLUB
SUMMERVILLE, SC

NILES COMMUNITY PARK
FREMONT, CA

NORTH POINT APARTMENTS
LONG BEACH, CA

NORTHBRIDGE RECREATION CENTER
NORTHBRIDGE, CA

NOVATO HIGH SCHOOL
NOVATO, CA

OAK PARK HIGH SCHOOL TENNIS
COURTS
OAK PARK, CA

OAKS COMMUNITY CENTER
SAN DIEGO, CA

O'CALLAGHAN PARK
HENDERSON, NV

PALISADES CLUB TENNIS
NEWPORT BEACH, CA

PARK WELLINGTON APARTMENTS
HOLLYWOOD, CA

PELICAN SOUND GOLF AND RIVER
CLUB
ESTERO, FL

PENN STATE UNIVERSITY
STATE COLLEGE, PA

PENNSACOLA ATHLETIC CLUB
PENSACOLA, FL

PRESTON COUNTRY CLUB
CARY, NC

RACQUET CLUB OF IRVINE
IRVINE, CA

RALEIGH RACQUET CLUB INC.
RALEIGH, NC

REED PARK
SANTA MONICA, CA

RESEDA PARK
RESEDA, CA

ROBSON RANCH-ARIZONA
ELY, AZ

ROBSON RANCH-TEXAS
DENTON, TX

ROHNERT PARK MUNICIPAL COURTS
ROHNERT PARK, CA

ROSS SNYDER TENNIS CENTER
LOS ANGELES, CA

ROTH JEWISH COMMUNITY CENTER
TENNIS
MILLAND, FL

ROXBURY PARK TENNIS COURTS
BEVERLY HILLS, CA

RUNNING SPRINGS TENNIS RESORT
PALM SPRINGS, CA

SADDLEBROOKE RANCH
ORACLE, AZ

SALINAS CENTRAL PARK
SALINAS, CA

SAN CLEMENTE RACQUET CLUB
SAN CLEMENTE, CA

SAN DIEGO RACQUET CLUB
SAN DIEGO, CA

SAN DIEGUITO ACADEMY
ENCINITAS, CA

SAN DIEGUITO RACQUET CLUB
SAN DIEGO, CA

SAN GORGONIO PARK
SAN CLEMENTE, CA

SAN JOSE STATE UNIVERSITY
SAN JOSE, CA

SAN LUIS OBISPO HIGH SCHOOL
SAN LUIS OBISPO, CA

SAN LUIS REY PARK
SAN CLEMENTE, CA

SANTA CLARA BAY CLUB
SANTA ANA, CA

SANTALUZ CLUB
SAN DIEGO, CA

SCIOTO COUNTRY CLUB
COLUMBUS, OH

SCRIPPS RANCH COUNTRY CLUB
SAN DIEGO, CA

SHERWOOD TENNIS CENTER
SALINAS, CA

SIERRA TENNIS COURTS
FRESNO, CA

SMYRNA MUNICIPAL PARK
SMYRNA, PA

SOUTH END RACQUET & HEALTH CLUB
TORRANCE, CA

ST. ANDREWS RECREATION CENTER
LOS ANGELES, CA

ST. HELENA TENNIS
ST. HELENA, CA

ST. JAMES PICKLEBALL
ST. JAMES, SC

STRAWBERRY RECREATION CENTER
MILL VALLEY, CA

SUN CITY PEACHTREE BY DEL WEBB
GRIFFIN, GA

SUNSET HILLS RACQUET CLUB
THOUSAND OAKS, CA

THE CLIFFS AT KEOWEE FALLS
SALEM, SC

THE CLUBS AT ST. JAMES
SOUTHPORT, NC

THE COUNTRY CLUB OF
BIRMINGHAM
BIRMINGHAM, AL

TERRA GRANDE PARK
SAN CLEMENTE, CA

TOWN OF MILLVILLE PICKLEBALL
FACILITY
MILLVILLE, DE

TREASURE OAK COUNTRY CLUB
OCEAN SPRINGS, MS

TRILOGY TENNIS CENTER
LA QUINTA, CA

TULSA TENNIS CLUB
TULSA, OK

TWILA REED PARK
ANAHEIM, CA

UC IRVINE TENNIS COURTS
IRVINE, CA

UC SAN DIEGO
SAN DIEGO, CA

UCSD TENNIS FACILITY
SAN DIEGO, CA

WALNUT HIGH SCHOOL
WALNUT, CA

WARM SPRINGS PARK
FREMONT, CA

WEST END RACQUET & HEALTH
CLUB
TORRANCE, CA

WEST VALLEY JUNIOR COLLEGE
SARATOGA, CA

WESTCHESTER TENNIS CENTER
LOS ANGELES, CA

WESTLAKE TENNIS
DAILY CITY, CA

WESTWOOD CLUB
RANCHO BERNARDO, CA

WESTWOOD RECREATION CENTER
LOS ANGELES, CA

WILLOW BROOK COUNTRY CLUB
TYLER, TX

WOODFIELD HUNT CLUB
BOCA RATON, FL

WOODMONT BAY CLUB
BAYONNE, NJ

YUBA CITY TENNIS COURTS
YUBA CITY, CA



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Testimonial - Steve Spearman, Spearman Clubs for Laguna Niguel Racquet Club and Racquet Club of Irvine



LAGUNA NIGUEL RACQUET CLUB TENNIS TESTIMONIAL

Hi Rick,

Remember that a few years ago I told the Faust Group that we were testing LED court lights from five different manufacturers? None of them were good enough, so we stayed with the traditional metal halide 1000W bulbs. Well, last month we found the LED tennis court company for us. It's called NLS Lighting, and their bulbs are AMAZING! Truly. We did a test court right next to a metal halide court, and the increased lighting was obvious to the naked eye. Our members love the test court, fight over it, and are very, very excited that we are doing the rest of LNRC this month. My frugal father came to see the test court and literally approved all LNRC courts be converted to NLS LED on the spot.

I know you know every tennis club owner on the planet. I thought you might want to share this great find with them, especially the Bay Club because you are mentor to their CEO. Once all our courts are done, I am going to create a video for our website as we see this not only saving us money in the long term but selling more memberships. When the video is done, I will send you the link.

Best,

Steve Spearman
Chief Financial Officer
Spearman Clubs, Inc.
www.spearmanclubs.com

SECTION 5 – Marketing

- A-Z The Perfect Tennis Fixture
- Job Site Photographs
 - West Side Racquet Club, Forest Hills, NY, Lifetime Fitness Rancho San Clemente, La Jolla Beach & Tennis Club, Billie Jean King Tennis Center, Sciotto Club, OH, Malibu Racquet Club, San Jose State, LA Tennis Club, Birmingham Tennis Club, MI

A-Z – The Perfect Tennis Fixture



VUE TENNIS

THE PERFECT TENNIS COURT LIGHT (A-Z)

- Would make you want to play every night.
- Allow one to play their best without excuse.
- Increases membership retention rates.
- Adds to the bottom line because of increased lesson, clinic, match, and restaurant revenue.
- Would make a player say that they do not want one more foot candle of light added or reduced from any location on the court or the backdrop.
- Would Eliminate the need to replace an existing ballast or lamp.
- Would come with a Ten Year Lift, Labor and Parts Warranty.
- Would be Designed for a 30 Year Life.
- Would Depreciate only 1/2 percent a year (5X-9X slower than its competitors).
- Provides a Tennis Facility Reference list of over 200 Tennis Facilities across the nation.
- Would ship quickly.
- Is approved by the USTA.
- Complemented by an experienced Tennis Lighting Design Team who will lay your lighting system at no cost per the different USTA Requirements.
- Can mount to any existing tennis arm.
- Would be completely designed, tooled, fabricated, cast, powder coated and assembled in the United States.
- Has easy qualifying and extremely low rate financing enabling the cost saving and revenue benefits to be the equivalent of having Free Lights.
- Is endorsed by the founder of the International Dark Sky Association as having the lowest glare fixture for Dark Sky, Neighbors, and Competition in the nation because of its recessed light source.
- Is competitively priced.
- Has a design team that can explain the difference between Foot Candles and Lumens.
- Enables 45% Energy Savings while tripling light levels compared to 1000 watt fixtures.
- Provides additional lower wattage light level options that increase existing light levels while reducing energy and eliminating maintenance.
- Enables the fixture to be turned off when the court has been vacated, and turned on instantly when a new player arrives, saving extra energy.



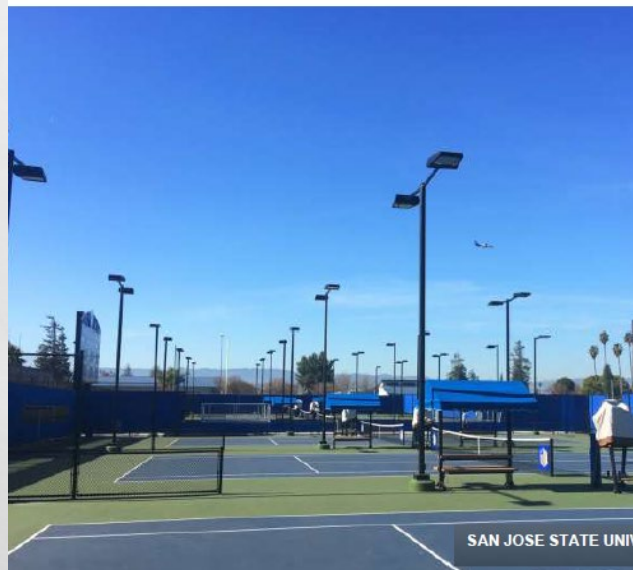


Facilities that
have installed
the VUE Tennis



Facilities that have installed the VUE Tennis

NLS
LIGHTING



SECTION 6 – 10 Year Warranty

- 10 year Lift Labor, & Parts Certificate

10-year Lift, Labor, & Parts Certificate



INDIAN HILLS COUNTRY CLUB

NLS LIGHTING, LLC OUTDOOR LED PRODUCTS WARRANTY

Subject to all of the limitations set forth in NLS Lighting's Terms and Conditions of Sale, for NLS Lighting Outdoor Light Emitting Diode (LED) luminaires only.

NLS Lighting warrants to the original purchaser that the LED lighting system and full fixture will be free from defects in material and workmanship for ten (10) years from the date of shipment of the products.

If an LED fixture or component fails within 10 years of shipment, NLS Lighting will ship a replacement fixture from NLS factory or field service the fixture. NLS shall agree to the fee of a second party contractor to repair or replace the fixture or hire a reputable local contractor to repair the outage. Materials, Labor, and Lift Charge are covered under this warranty.

The warranty does not cover failures due to abnormal site conditions. These abnormal conditions include, but are not limited to, under/over voltage, under/over current, excessive switching and excessive ambient temperatures. Modifications to fixtures or poles without the approval of NLS Lighting will void Warranty.

Subject to all of the limitations set forth in NLS Lighting's Terms and Conditions of Sale, for NLS Lighting Outdoor LED luminaires only, NLS Lighting warrants to the original purchaser finish for a period of 10 years from date of shipment.

Poles are warranted for five (5) years. Poles must be regularly inspected and wiped clean to insure a non-abrasive surface. Poles are warranted against cracking, peeling, fading and chalking. The warranty is at the discretion of NLS as to how and where to fix the problem should one occur. NLS Lighting will not cover costs of transportation, installation and/or removal of defective or damaged poles.

NLS Lighting will, at its sole option, repair or replace the defective finish if it exhibits cracking, peeling, excessive fading or corrosion defects during the warranty period.

During the warranty period some fading, staining or chalking may occur. This is normal aging for the finish used, is not a manufacturing defect and is not covered by our warranty.

NLS
LIGHTING

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