

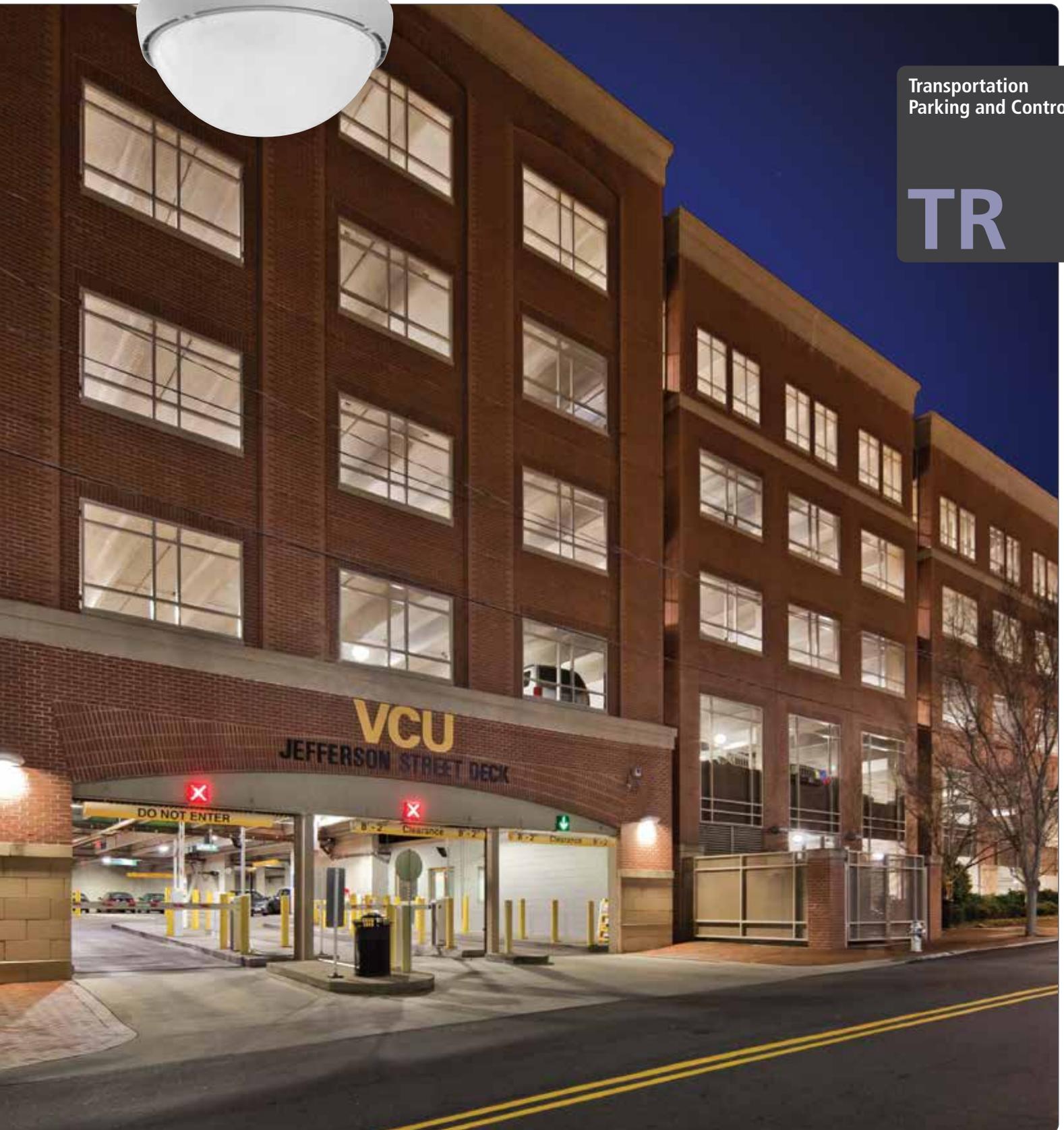


TekDek™
Lighting for Parking



Transportation
Parking and Controls

TR



A brand of  **legrand®**

RECALL®

TekDek™: Delivering Lumens, Reducing Glare

In the same way that Solid State Lighting has revolutionized the entire lighting industry, TekDek™ LED Luminaires have revolutionized parking garage lighting. Kenall led the competition by designing TekDek™, a best-in-class parking luminaire that recognizes and remediates hazardous glare, keeping drivers and pedestrians safe and secure. TekDek creates the brighter, more secure parking environments that patrons seek and parking professionals demand. The TekDek series offers a range of outputs, which enables parking professionals to balance footcandle requirements, glare control and excellent value.

Challenging parking applications... Demand Kenall.

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TekDek: A Story of Firsts

- **FIRST** with glare control in parking garage applications
- **FIRST** parking garage product to achieve 100 lm/w
- **FIRST** parking garage product to achieve 120 lm/w
- **FIRST** parking garage product to achieve 150 lm/w
- **NOW, FIRST** with a Peace of Mind Guarantee® on TekDek luminaires with embedded sensor

Your Parking Lighting Must Evolve – Here’s Why

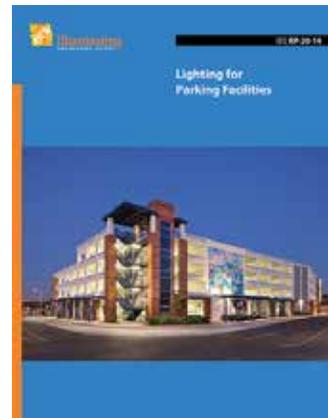
The advent of energy efficient, solid state lighting is driving new mandates and standards pertaining to lighting and controls across the parking industry. Now, thanks to incentives and rebates from participating utilities, there has never been a better time to upgrade to LED.

Standards in the Lighting Industry

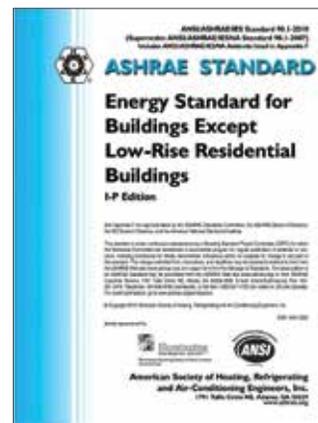
- 2013 Title 24, Part 6 Building Energy Efficiency Standards (California)
- ASHRAE 90.1 Energy Standards
- IES RP 20: Lighting for Parking Facilities
- Green Parking Council: Green Garage Certification



Title 24, Part 6 Building Energy Efficiency Standards (California)

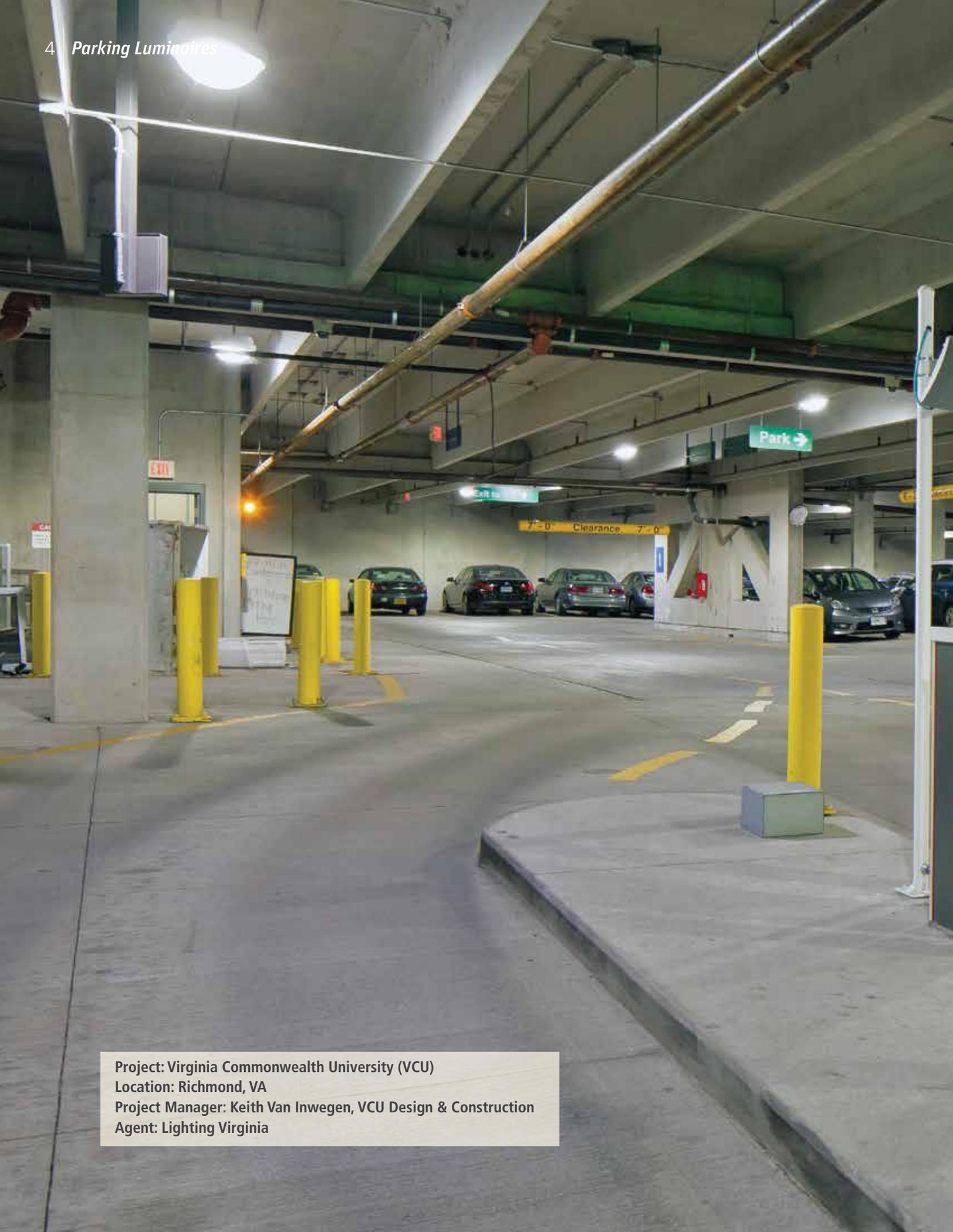


IES RP 20: Lighting for Parking Facilities



ASHRAE 90.1 Energy Standards

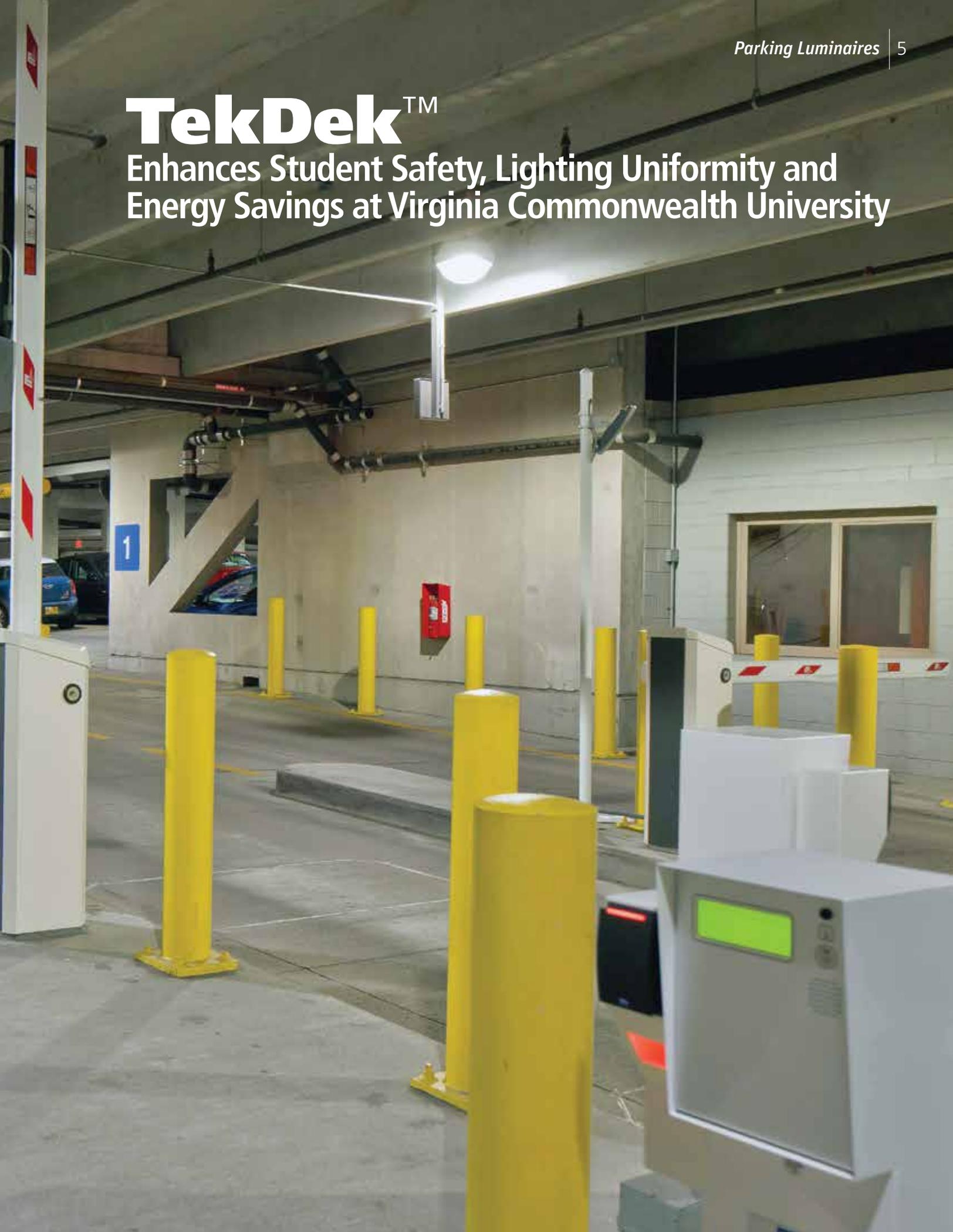




Project: Virginia Commonwealth University (VCU)
Location: Richmond, VA
Project Manager: Keith Van Inwegen, VCU Design & Construction
Agent: Lighting Virginia

TekDek™

Enhances Student Safety, Lighting Uniformity and Energy Savings at Virginia Commonwealth University



TekDek™ – Functional, Thoughtful Design

Kenall engineers and designers have developed an innovative, patented design that delivers superior glare control and a variety of lumen packages for today's parking structure. A specially-designed textured lens, working in conjunction with secondary optics, reduces disabling and discomfort glare, while also providing uplight and enhancing vertical illumination. When paired with Kenall's TekLink™ lighting control system, TekDek delivers the right amount of light exactly when and where it's needed.



- **Glare Reduction**

Kenall's innovative textured lens provides unprecedented glare reduction—greatly enhancing both vehicle and patron safety while preserving the optical distribution pattern.

- **Die-cast Housing**

TekDek's marine-grade, die-cast aluminum housing provides maximum strength and durability. To maximize LED life, the housing design also includes a thermal air gap between the fixture's temperature-sensitive drivers and its heat emitting components.

- **Vertical Footcandles**

Kenall's parking garage luminaires provide double—often triple—the vertical footcandles of typical LED parking garage lighting.

- **Uplight Feature**

TekDek provides a highly desirable uplighting component to eliminate the problematic "cave effect" commonly found in traditional parking decks.

- **Embedded Microwave Sensor**

Unaffected by line of sight issues, the internal, embedded sensor provides a consistent coverage pattern. The system antenna is concealed within the housing making it impervious to vandalism. Adjustable sensitivity settings are also available via remote control.

- **Sealed Optics**

The lens is sealed, gasketed and IP65 rated.

- **Traditional Design Aesthetic**

The TekDek luminaire delivers an aesthetically soothing feel with a classic architectural look.

Design Patent No. D639.996S
US D707387 S1
US 8905589 B2
The optical patent is pending:
US 20120176792 A1



POWER SYSTEMS



Polycarbonate lens with
DTS mount only

The **TekDek™** Series: Lumens Tailored to Fit Your Needs

The TekDek™ Series offers four standard outputs and two base models, which allows specifiers to tailor light levels to the specific lumen/efficiency requirements and budget parameters of a project.

TekDek™ Light Output

TD17

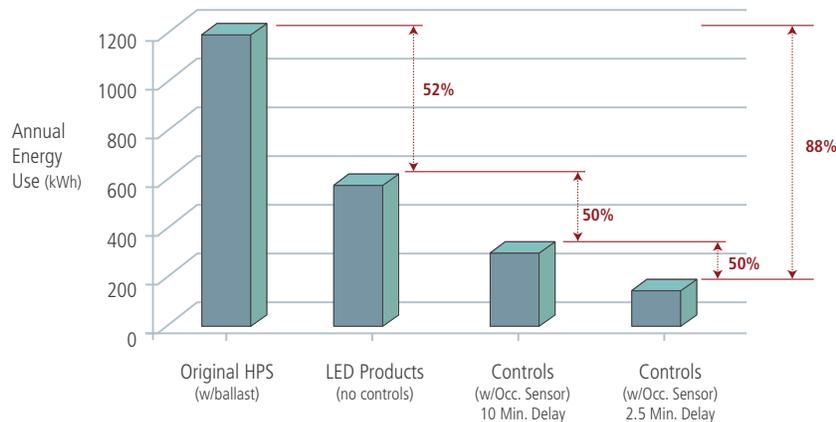
Lamp Power (W)	Initial Delivered Lumens (lm)	Efficacy (lm/W)	Input Power (W)	Estimated L70 Lifetime (hrs)
30	4,080 - 5,349	113 - 149	36	175,000
47	5,786 - 8,060	109 - 152	53	175,000
72	7,932 - 11,566	102 - 148	78	150,000
94	10,122 - 14,866	96 - 142	105	125,000

TD17B

Lamp Power (W)	Initial Delivered Lumens (lm)	Efficacy (lm/W)	Input Power (W)	Estimated L70 Lifetime (hrs)
33	3,192 - 4,185	84 - 110	38	00,000
52	4,428 - 6,168	74 - 103	60	75,000

A Range of Outputs for Safety, Security & Savings

Annual Energy Usage Based on Various Lighting and Control Scenarios



Source: USDOE Gateway Demonstration Project- LED Conservation with Occupancy Sensor Controls at the U.S. Department of Labor HQ Garage, Washington,DC



TekDek™ Flexible Mounting Types

Because no two installations are exactly alike, TekDek luminaires are available with a range of mounting options and accessories.



Direct-to-Surface Mount (DTS)*

Secures the fixture directly to the ceiling via a simple and secure four-hole mounting plate.

*Required for Peace of Mind Guarantee®



Quick Mount (QM)

Includes an integrated hanger bracket to hold the fixture, facilitating ease of installation and maintenance. The quick mount uses a simple twist-and-click motion to set the fixture into place.



Pendant Mount (PM)

For use whenever an aesthetically pleasing, suspended configuration is desired. Pendant by others.



Trunnion Mount (TK)

A common mounting option for use when a suspended configuration with additional support is desired.



Bird Guard (BG)

Available for both the pendant and trunnion mounts, the bird guard protects the fixture from birds nesting in exposed areas.



Bird Guard (BG)

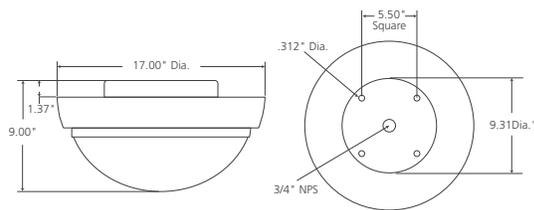
Available for both the quick and direct-to-surface mounts, the bird guard protects the fixture from birds nesting in exposed areas.



Debris Shield (DS)

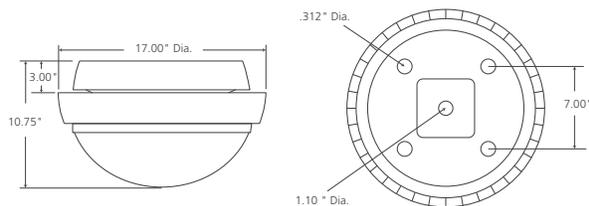
An optional debris shield protects against debris accumulation.

TekDek™ Dimensional Drawings



TD17 Standard Construction

Product built as above under all configurations, except as noted for options using A1 Construction (see figure to the right).



A1 Construction

Product built as A1 when ordered with TekLink™, TL1000 (w/o sensor), TL2000 (w/o sensor), LEL, GTD and 480V options.



TekDek™ Lighting Tailored to Your Needs

TekDek with Type 5N Distribution



Charging Station

TD17

Delivered Lumens: 4,482 – 14,866lm

Lamp Power: 30 – 94 W

Efficacy: 96 – 152 lm/w



Payment Stations



Elevator Landings



Entrances/Exit



Next
Generation
LUMINAIRES
2016

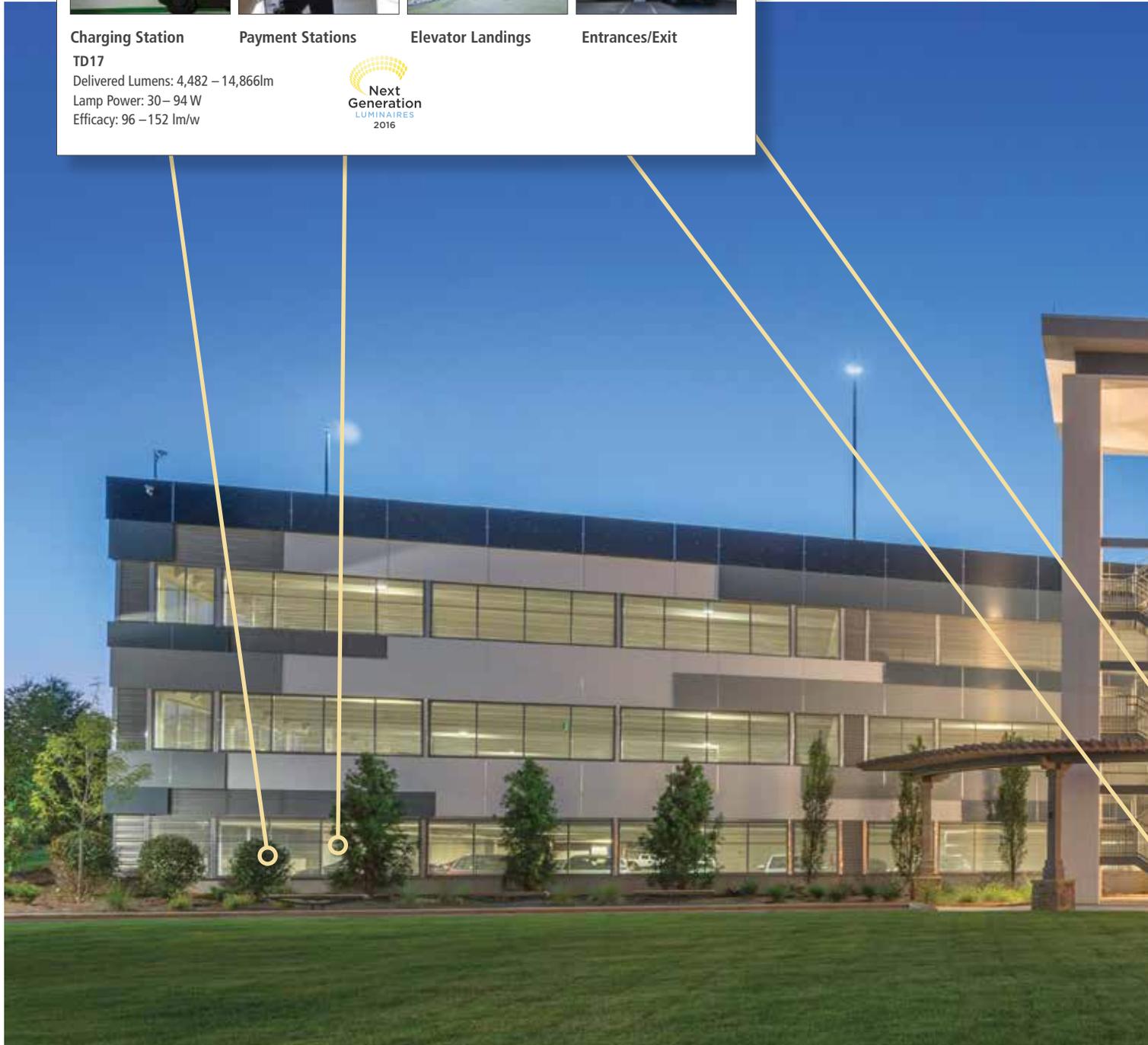


Photo for illustrative purposes only, actual products may vary.



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<p>TekDek or TekDek Base with Type 5S Distribution</p>  <p>Parking Areas TD17 Delivered lumens: 4,483–13,361 lm Lamp Power: 30–94 W Efficacy: 96–152 lm/w TD17B Delivered lumens: 3,192–6,168 Lamp Power: 33W, 52W Efficacy: 96–152 lm/w</p>	<p>TekDek or TekDek Base with Type 2 Distribution</p>  <p>Drive Lanes TD17 Delivered lumens: 4,080–12,013 lm Lamp Power: 30–94 W Efficacy: 96–152 lm/w</p>	<p>TekDek Base with Type 5N Distributon</p>  <p>Ramps TD17B Delivered lumens: 4,482–14,866 lm Lamp Power: 30–94 W Efficacy: 96–152 lm/w</p>	<p>TopDek</p>  <p>Top Deck of Garage TPD23 Delivered lumens 9,424–30,443 lm Lamp Power: 100–300W Efficacy 79–109 lm/w</p>
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PROJECT: Red Ventures
LOCATION: Fort Mills, S.C.
AGENT: Bagby Company



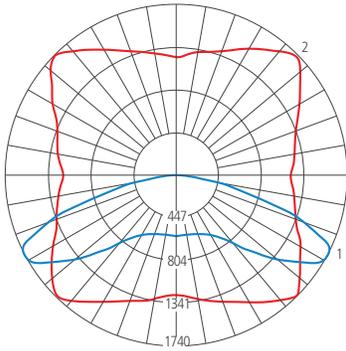
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TekDek™: Versatile Distribution Options

Traditionally, LED lighting in parking garages provided no uplight, creating "cave effect" illumination—distributing light directly beneath the fixture while ignoring peripheral areas—creating dark corners and dim ceilings. Kenall's TekDek LED offers a range of illumination patterns, including two IES Type 5 distributions to address a majority of applications, as well as a Type 2 distribution for mounting over drive lanes, and two unique house-side shield options.

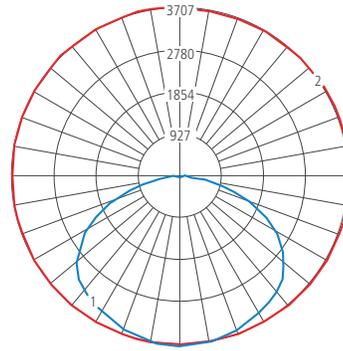
Type 5S Commonly used over parking bays where evenly distributed light is required, Type 5S produces a square distribution, delivering intensity at all angles and providing impressive uniformity.



Type 5S

Open garage areas
Porticos
Transportation platforms

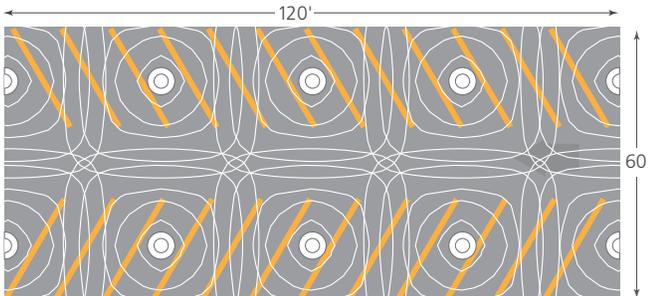
Type 5N Type 5N produces a narrow, round distribution, delivering light intensity at all angles, providing impressive uniformity.



Type 5N

Garage payment locations
Garage entrances & exits
High ceiling areas
Gas station canopies

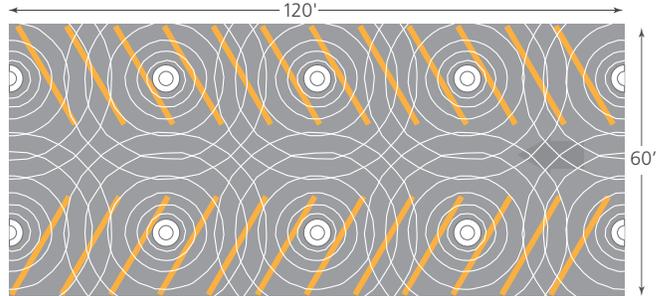
TD17 Type 5S Optic Mounted Over Parking Bays



8 Fixtures @ 30' Spacing
10' Ceilings
Fixtures mounted 8'.3" from floor

Avg f/c	4.1
Min f/c	2.2
Uniformity	2:1
Reflectances (p) 20/20/10	
TLLF	0.8

TD17 Type 5N Optic Mounted Over Parking Bays



8 Fixtures @ 30' Spacing
10' Ceilings
Fixtures mounted 8'.3" from floor

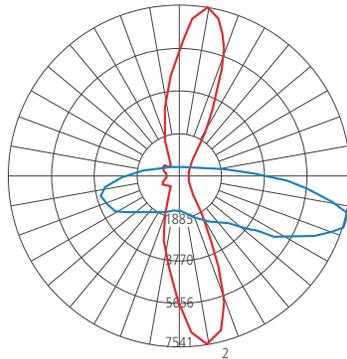
Avg f/c	4.5
Min f/c	1.7
Uniformity	3:1
Reflectances (p) 20/20/10	
TLLF	0.8



Type II Distribution: Energy Savings for Drive Lane Installs

When drive lane mounting is an option, you can reduce your luminaire count by up to 38% using TekDek's Type 2 distribution. Reduce glare, put light where it's needed and still reduce input wattage, resulting in a potential energy savings of up to 71% (over HID options).

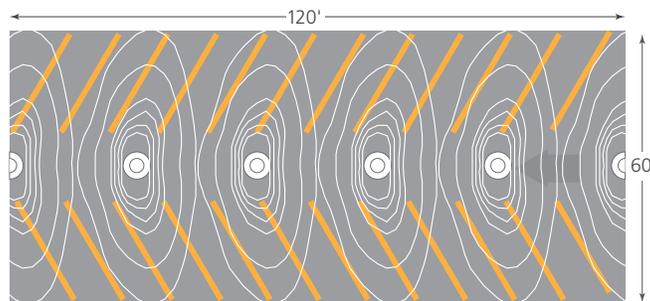
Type 2 TekDek's Type 2 optic is ideal for use in drive lane installations resulting in substantially reduced installation cost and significant energy savings.



Type 2

- Garage drive lanes
- Covered pedestrian walkways
- Pedestrian paths in garage

TD17 Type II Optic Mounted Over Drive Lanes



5 Fixtures @ 24' Spacing

Avg f/c	3.4
Min f/c	1.3
Uniformity	7:1
Reflectances (p)	20/20/10
TLLF	0.8





TekDek™ A Full Range of Lighting

TekDek luminaires are commonly used in parking applications, but thanks to a range of lumen packages, a tightly-sealed housing, and a Peace of Mind Guarantee® (when specified with the polycarbonate lens and DTS mounting) they are a perfect fit for a variety of applications:

- *High/Low Bay*
- *Canopy*
- *Transit*
- *Cold storage*



TekLink™ A Full Range of Lighting Control Systems

Kenall's TekLink™ series is a portfolio of control systems with a range of options ideal for parking garages, parking lots, manufacturing facilities, warehouses, stairwells and multi-purpose rooms. With five systems—two that are cloud based—and a variety of available options, Kenall has a lighting control system for your unique application.

Integrated Solutions for Any Budget

TL50

Remote Controller



TekDek™



System Features

- Occupancy detection
- Open loop daylighting harvesting
- Settings configurable via remote controller

TL100

Controller



Sensor



TekDek™



System Features

- Zonal occupancy detection
- Centralized luminaire control
- Closed loop daylight harvesting
- One button commissioning

TL1000/TL2000



System Features

- Web based user interface
- Wired and wireless options
- Email and text alerts
- Power monitoring
- Data reporting

Kenall TekLink Control System Overview

Features	TL50	TL100	TekLink Cloud	
			TL1000	TL2000
Sensor Technology	Microwave/Infrared	Infrared/Ultrasonic	Infrared/Microwave	Infrared/Microwave
Wireless Communication				√
Adjustable Occupancy Time-Out	√	√	√	√
Daylight Feedback	√	√	√	√
Adjustable Dim-Level	√	√	√	√
Zonal Control		√	√	√
One Touch Light Level Commissioning*		√	√	√
L70 Detection*		√	√	√
Scheduling			√	√
Reporting			√	√

*Patent No: US 20120153840



TekLink™ TL50: Individually controlled LED luminaires with embedded sensor

TekLink™ TL50 is a lighting control system integrated into a single luminaire. The control system coordinates the individual luminaires light output based on daylight contribution and/or occupancy detection. TL50 offers the ability to meet ASHRAE 90.1-2010 requirements with select sensors, and is compatible with Kenall's full parking series.



TekDek™
Parking Garage



SenScape™ SPG18
Parking Garage

NEW



TopDek Post Top™
Surface/Lot



TopDek™
Parking Surface

System Features:

- Occupancy Detection
- Open Loop Daylight Harvesting
- Adjustable Time-Out
- Adjustable Bi-level Dimming



TekLink™ TL100: Zonal, wired lighting system with centralized luminaire control

TekLink™ TL100 coordinates luminaire light output based on daylight contribution and occupancy detection. The control system offers a choice of four different programs, each with a unique way of handling the system's occupancy detection and response to daylight.



Remote Sensor

- Strategically placed sensors trigger multiple luminaires
- Lockable, IP65 rated enclosure



Controller

- Utilize up to six sensors per control module
- Ability to control multiple luminaires
- Interconnect multiple control modules for increased zone size
- L70 status indicator (patented)
- Closed loop daylight harvesting
- Lockable, IP65 rated enclosure
- Four selectable system programs

Luminaires



TekDek™
Parking Garage



TopDek™
Parking Surface



TopDek™ Post Top
Surface/Lot

System Features:

- Zonal occupancy detection
- L70 status indicator (patented)
- Sweep-off and over-ride ON
- 'Safe on' failure mode
- One-button commissioning
- Closed loop daylight harvesting

System Programs:

- On – Off daylighting (exterior)
- On – Dim daylighting (interior)
- Occupancy only (stairwell)
- Inverse daylighting (vehicle entryways)

TekLink™ TL1000 and TL2000: Wired and wireless, cloud-based lighting control systems

Sophisticated, yet easy to use, TekLink TL1000 and TL2000 are adaptive lighting control systems that feature robust scheduling and reporting capabilities.



System Features

- Cloud-based, wired or wireless system
- User friendly, graphical interface
- Flexible system configuration; user defined access levels
- 900 MHz to penetrate concrete and rebar
- Robust scheduling capabilities
- Real-time monitoring, measurement and recording
- Automated system alerts
- Ease of commissioning



Completing the Parking Series

Kenall offers a comprehensive series of luminaires to address a variety of needs in your project, including our **NEW SenScape SPG18**, which, like the TekDek, can be used in a broad range of applications.



NEW



SenScape™ (SPG18 Series)

- Delivered lumens 4,000 – 10,500 lm
- Lumens per watt: 100 – 120 lm/W
- Marine-grade die cast aluminum housing
- Textured tertiary lens for glare reduction; eliminates the 'cave-effect'
- Desirable upright; up to 10%
- IP65 Rated Construction
- Embedded microwave sensor offers an industry exclusive Peace of Mind Guarantee®
- Optical patterns designed specifically for covered parking applications
- Compatible with TekLink™ lighting control systems

Nominal Size: 18" Diameter
Installation Types: Surface, Pendant, Trunnion, Quick Mount

TopDek™ (TPD23 Series)

- Delivered lumens 9,424 – 30,443 lm
- Input watts: 112 – 337 W
- Lumens per watt: 79 – 109 lm/W
- Type II, III, IV, V-Narrow Round, and V-Wide Square distributions
- Die-cast, marine-grade aluminum housing
- Textured acrylic or polycarbonate flat lens for superior glare reduction
- Sealed optics with IESNA full cutoff distribution
- Internal house-side shield reduces wind loading
- Compatible with TekLink™ lighting control systems

Nominal Size: 23" Diameter
Installation Types: Pole mounted (pole by others)

TopDek™ Post Top (TPDPT Series)

- Delivered lumens 6,693 – 34,361 lm
- Input watts: 110 – 451 W
- Lumens per watt: 48 – 114 lm/W
- Type II, III, IV, V-Narrow Round, and V-Wide Square distributions
- Die-cast, marine-grade aluminum housing
- Textured acrylic or polycarbonate flat lens for superior glare reduction
- Sealed optics with IESNA full cutoff distribution
- Internal house-side shield reduces wind loading
- Compatible with TekLink™ lighting control systems

Nominal Size: 26" Diameter
Installation Types: Pole mounted (pole by others)



Complementary Parking Products

Kenall offers a comprehensive series of luminaires to address a variety of needs throughout your parking structure.

Stairwell



Millenium Stretch™



EnviroSeal™



Millenium OS™



Building Facade



Millenium™



Millenium FreeScale™



Millenium Auracyl™



Millenium Finite™

Exit/Egress



Millenium Metrex™



METEL



MLER



METEL



METER



TekDek™ Performance Listings

IP

EXPLANATION OF “INGRESS PROTECTION” IP NUMBERS for Degrees of Protection for Sealed Luminaires

Example:

IP65

DEGREES OF PROTECTION INDICATED BY THE FIRST CHARACTERISTIC NUMERAL

Numeral	Short Description	Brief details of objects which will be “excluded” from the enclosure
0	Non-protected	No special protection
1	Protected against solid objects greater than 50 mm	A large surface of the body, such as a hand (but no protection against deliberate access). Solid objects exceeding 50 mm in diameter.
2	Protected against solid objects greater than 12 mm	Fingers or similar objects not exceeding 80 mm in Solid objects exceeding 12 mm in diameter.
3	Protected against solid objects greater than 2.5 mm	Tools, wires, etc., of diameter or thickness greater than Solid objects exceeding 2.5 mm in diameter.
4	Protected against solid objects greater than 1.0 mm	Wires or strips of thickness greater than 1.0 mm. Solid objects exceeding 1.0 mm in diameter.
5	Dust-protected	Ingress of dust is not totally prevented but dust does not enter in sufficient quantity to interfere with satisfactory operation of the equipment.
6	Dust-tight	No ingress of dust

IP65

DEGREES OF PROTECTION INDICATED BY THE SECOND CHARACTERISTIC NUMERAL

Numeral	Short Description	Brief details of objects which will be “excluded” from the enclosure
0	Non-protected	No special protection
1	Protected against dripping water	Dripping water (vertically falling drops) shall have no harmful effect.
2	Protected against dripping water when tilted up to 15°	Vertically dripping water shall have no harmful effect when tilted up to 15° when the enclosure is tilted at any angle up to 15° from its normal position.
3	Protected against spraying water	Water falling as a spray at an angle up to 60° from the vertical shall have no harmful effect.
4	Protected against splashing water	Water splashed against the enclosure from any direction shall have no harmful effect.
5	Protected against water jets	Water projected by a nozzle against the enclosure from any direction shall have no harmful effects.
6	Protected against heavy seas	Water from heavy seas or water projected in powerful jets shall not enter the enclosure in harmful quantities.
7	Protected against the effects of immersion	Ingress of water in a harmful quantity shall not be possible when the enclosure is immersed in water under defined conditions of pressure and time.
8	Protected against submersion	The equipment is suitable for continuous submersion in water under conditions which shall be specified by the manufacturer. NOTE – Normally, this will mean that the equipment is hermetically sealed. However with certain types of equipment it can mean that water can enter but only in such a manner that it produces no harmful effects.

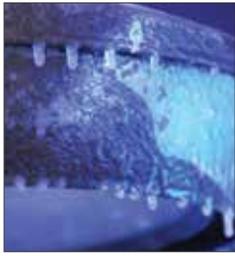
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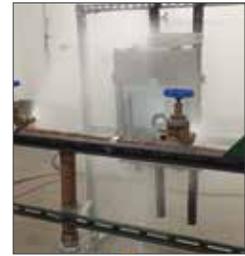
Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная электротехническая комиссия

State-of-the-art, certified testing facility

Kenall is equipped with a state-of-the-art certified safety laboratory, providing comprehensive in-house testing capabilities:



Thermal Testing



Ingress Protection Testing

Kenall Warranty Information



Polycarbonate Lens

Kenall is pleased to be able to offer our exclusive Peace of Mind Guarantee® on select luminaires. Kenall's Peace of Mind Guarantee is available when a textured polycarbonate lens (TP) is selected and ordered, and when installed according to instructions.



POWER SYSTEMS

Kenall promises to stand behind our parking luminaires. Our commitment to excellence enables us to offer a 10-year limited product warranty on select parking products.

For detailed, product-specific warranty information, please visit our website at www.kenall.com.

LED Lighting Facts — Department of Energy LED Quality Advocate Program For LED Luminaires

As a member of the Department of Energy's LED Quality Advocates, Kenall Manufacturing has pledged to include the Lighting Facts label in conjunction with our LED luminaires. The label reports product performance results in five areas from actual test data* in accordance with industry standards measuring photometric performance of LEDs:

- Luminaire light output
- Efficacy (lumens per watt)
- Measured power (watts)
- Correlated Color Temperature (CCT)
- Color Rendering Index (CRI)

* Luminaire measurements have been standardized with the issuance of the IESNA Standard LM-79-2008 test procedure.



Kenall Manufacturing is a registered Lighting Facts Product Partner. For more information about this program or for copies of our Lighting Fact Labels please contact Kenall at info@kenall.com, or visit us on the web at www.kenall.com

Light Output (Lumens)	7256
Watts	53.95
Lumens per Watt (Efficacy)	134.49
Color Accuracy Color Rendering Index (CRI)	75
Light Color Correlated Color Temperature (CCT)	4907 (Daylight)
Warranty**	Yes

All results, except LED Lumen Maintenance, are according to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting. The U.S. Department of Energy (DOE) verifies product test data and results.

**** See www.lightingfacts.com/products for details.**





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