IED High Abuse Lighting

for Interior and Exterior Applications





From Rough, Tough Herculux to Aesthetic Millenium Architectural

In 1965, Kenall became the first company to utilize injection molding to create impact-and vandal-resistant polycarbonate lens lighting products. Proven to increase safety and reduce maintenance, these *Herculux*TM enclosures are still the standard for public area lighting today.

Millenium™ high-abuse luminaires combine symmetry with efficiency and durability. They feature architecturally-acceptable materials that resist degradation; state-of-the-art lighting technology; optics and shielding; and certified ingress protection against dust and water. They are ideal for areas where both functionality and aesthetics are desired, such as the faces of public buildings.

Together, these two luminaire families form the backbone of the Kenall High Abuse product family.

Front cover: Photo features EnviroPro™ luminaires in application at Ignacio High School, Ignacio, Colorado

Choose LED for Added Value and Quick ROI

- All high abuse luminaires are covered by a lifetime guarantee against breakage & a 5 or 10 year warranty on power systems
- Energy efficiency that is up to 80% greater than incumbent lighting, delivering quick return on investment
- UV and mercury-free lamping
- White LEDs with specifiable color temperatures
- Nearly indestructible enclosures that protect your investment

NEW Athletic facility lighting that kills harmful bacteria, including Staph, such as MRSA, with exclusive *Indigo-Clean™ Technology*, Page 34

Senscape[™] Architectural high performance lighting for superior parking garage and canopy applications, Page 59



Millenium™ Architectural High Abuse



NEW

Herculux™ High Abuse



SentinalI[™] High Abuse



Millenium[™] **Downlight** Architectural High Abuse



Millenium Stretch™ Architectural High Abuse

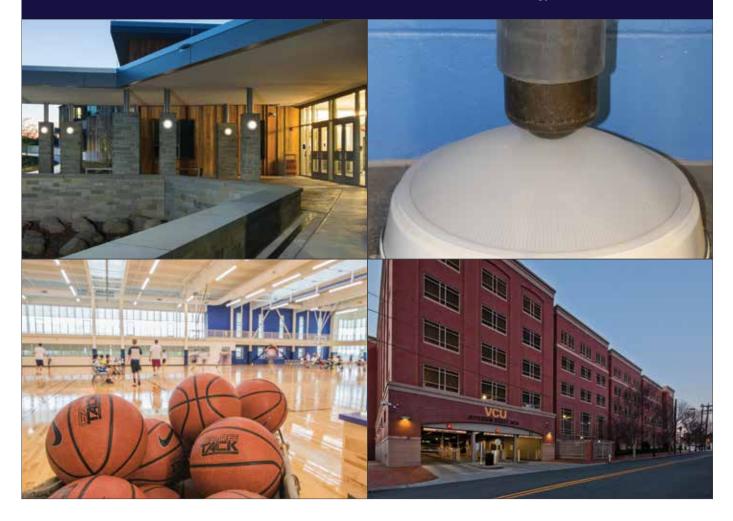
NEW



Proven, Reliable Lighting Solutions for Challenging Applications

- Impervious to Breakage
- Vandal Resistant
- Protected from Dirt/Water Ingress
- Versatile

- Corrosion Resistant
- Energy Efficient





Rugged, Durable Construction and Timeless Appeal

Kenall luminaires are designed to withstand even the most demanding lighting challenges. Our construction is durable, dependable and certified to perform to your exact standards. With features like marine-grade aluminum backplates and polycarbonate lenses, Kenall lighting stands the test of time.

High Abuse Construction



Recommended use: public spaces such as garages, entryways, stairwells, pedestrian tunnels, locker rooms, corridors and dormitories



The Industry's Leading High Abuse Luminaires, Designed and Built for your Peace of Mind

With more than 50 years of design and manufacturing experience, Kenall understands your challenges and provides complete solutions for your most demanding applications. We are confident in the durability of our products and will repair or replace any high-abuse light fixture rendered inoperable due to accident or vandalism during its normal service life. Kenall is also the first in the lighting industry to offer a complete Peace of Mind Guarantee® on motion sensors embedded behind vandal-resistant lenses.







Breakage: Protect your lighting investment with Kenall's virtually indestructible enclosures.



Theft/Vandalism: Kenall's high-abuse enclosures include tamperresistant hardware and four-point mounting to minimize loss from theft.



Ingress: Fixtures are designated and tested to IP64 and IP65 Ingress Protection standards to assure they are sealed from dirt, insects and moisture penetration.



Corrosion/Weather:

Standard high-abuse fixtures utilize powder-coated base plates and UV-stabilized thermoplastic. Stainless steel construction is available for highly corrosive applications.



Our Lighting Has Evolved So Yours Can, Too.

Motion Sensor Now Embedded Behind Vandal-Resistant Lens

Kenall's lighting and controls continually evolve to take advantage of the most current technologies available. Today, many of Kenall's motion-sensing luminaires use microwave technology—embedded into the luminaire—to detect motion by emitting radio wave pulses throughout a space in order to measure the changes in reflection off a moving object.



Embedded Motion Sensors are:

- Vandal-resistant
- Protected from moisture

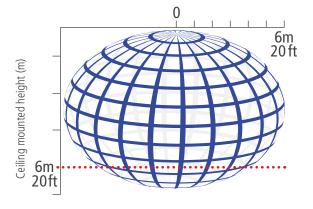


External motion sensors (above) are susceptible to vandalism

Sensor Settings Simple Factory Preset, Broad Coverage Pattern

Factory Preset			
Time Out	t Step Dims to Dete		
20 min	30%	100%	

COVERAGE PATTERN



Ceiling mounted detection pattern



TekLink[™] A Full Range of Lighting Control Systems

Many of our high abuse products are controls compatible, and Kenall offers integrated solutions to suit a variety of budgets.



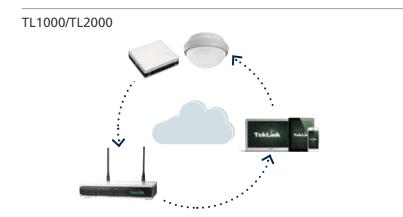
System Features

- Embedded sensor
- Motion sensing detection
- Open loop daylighting harvesting
- Settings configurable via remote controller



System Features

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



System Features

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

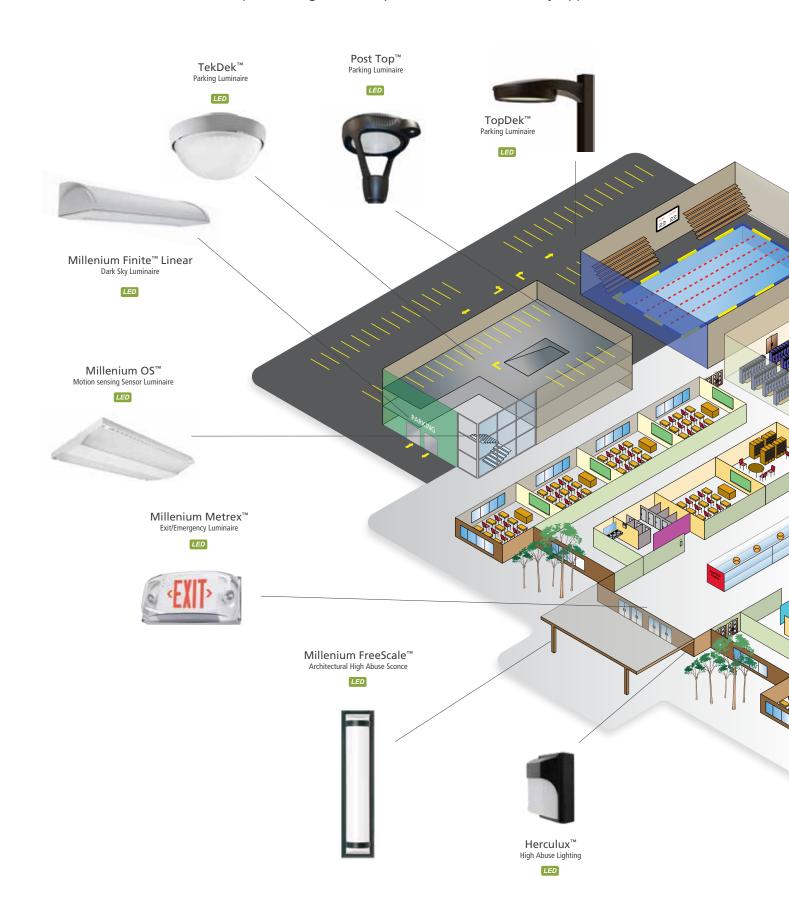
Kenall Tekl ink Control System Overview

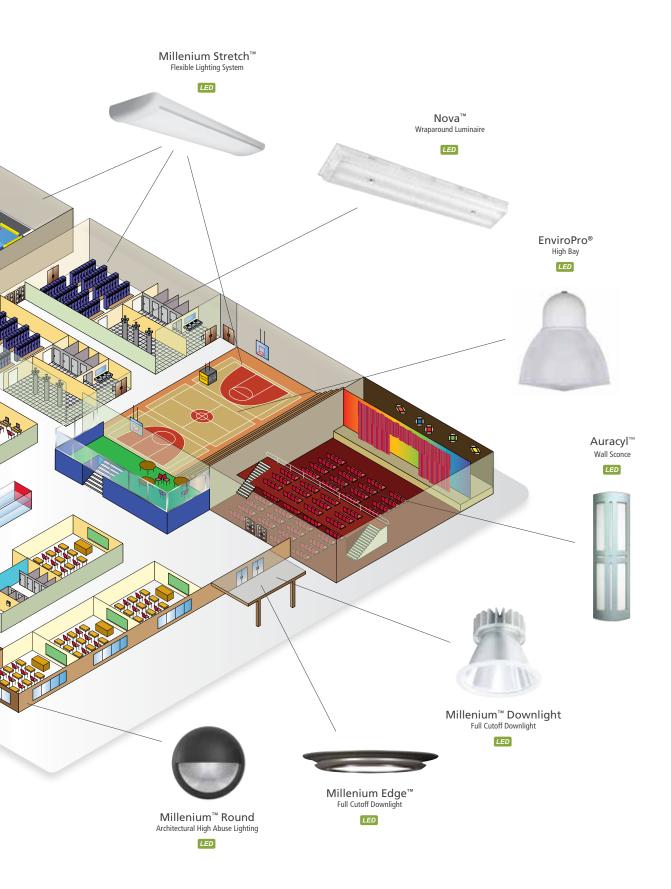
Keriali Teklifik Control System Overview			TekLink Cloud	
Features	TL50	TL100	TL1000	TL2000
Sensor Technology	Microwave/Infrared	Infrared/Ultrasonic	Infrared	Infrared
Wireless Communication				√
Adjustable Motion sensing Time-Out	V	√	√	√
Daylight Feedback	V	√	√	√
Adjustable Dim-Level	V	√	√	√
Zonal Control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

^{*}Patent No: US 20120153840



Schools and Universities • Municipal Buildings • Public Spaces • Stairwells • Military Applications







Choose the Right Luminaire for Your Challenging Indoor Application

	Recommended Applications	Recommended Product	Find on page
	Locker Rooms, Changing Rooms, Showers	Millenium Stretch	20-22
		Millenium Stretch using Indigo-Clean Technology	36
		SimpleSeal HASEDI using Indigo-Clean Technology	37
		Nova	46
		Sheriff, Ranger	47, 49
		Millenium Rounds, Ovals, Squares	16-19
Towns .		MIllenium Stretch	20-22
	Restrooms	MIllenium Flush Downlight	27
		Herculux	40
1 1		Sheriff	47
		Millenium Rounds, Ovals, Squares	16-19
	Dormitories, Barracks	MIllenium Stretch	20-22
		Nova	46
		Rough-house Round	48
		Ranger	49
		MIllenium Stretch	20-22
		Sentinall	43
	Hallways, Corridors	Nova	46
San San		Sheriff	47
		Ranger	49



	Recommended Applications	Recommended Product	Find on page
A MEN	Stairwells	MIllenium Stretch	20-22
		Millenium OS	23
		Nova	46
		Sheriff	47
		Ranger	49
	Multi-purpose Rooms	Millenium Stretch High Lumen Package	22
		EnviroPro EPLB	42
THIS LOW MANNEY TO	Gymnasiums	Millenium Stretch	22
		Millenium Metrex	31
		EnviroPro EPLB	42
	Natatoriums	Millenium Stretch	22
		EnviroPro EPLB	42
officer 1	Parking Garages and Decks	TekDek	58
		TopDek, TopDek Post Top	59
		SenScape PG	59
	Exits	MIllenium Metrex	31



Choose the Right Luminaire for Your Challenging Outdoor Application

	Recommended Application	Recommended Product	Find on page
	Entryways	Millenium Rounds, Ovals, Squares	16-19
		MIllenium Finite	24
1000		Millenium Finite Linear	25
		Millenium Freescale	28-29
		Millenium Auracyl	30
		Millenium Rounds, Ovals, Squares	16-19
		MIllenium Stretch	20-22
	Canopies, Covered Walks	Millenium Edge	26
		MIllenium Flush Downlight	27
		Herculux	40
		EnviroPro EPLB	42
		Sentinall	43
CANAL E		SimpleSeal Inset Door Series	44
		Nova	46
THE RESERVE TO SERVE THE PERSON NAMED IN COLUMN TWO IN COL		Herculux Corrosive & Coastal	55
And Care		TekDek	58
		SenScape	59
		Millenium Rounds, Ovals, Squares	16-19
	Marinas and Coastal Environments	EnviroSeal	45
		SimpleSeal Inset Door Series	52
		Millenium Flush Downlight	53
		Herculux Corrosive & Coastal	55



	Recommended Application	Recommended Product	Find on page
		Millenium Rounds, Ovals, Squares	16-19
in I have		Millenium Stretch	20-22
The Name of Street		Millenium Edge	26
THE REAL PROPERTY.	Pedestrian	Herculux	40
	Underpasses	Nova	46
		Sheriff	47
		TekDek	58
		SenScape	59
		Millenium Rounds, Ovals, Squares	16-19
		MIllenium Finite	24
		Millenium Finite Linear	25
	Building	Millenium Edge	26
	Exteriors	Millenium Flush Downlight	27
		Millenium Freescale	28-29
		Millenium Auracyl	30
		Herculux	40
		Sentinall	43
EIII F	Egress	Millenium Rounds, Ovals, Squares	16-19
EAIL		Millenium Stretch (EL)	20-22
7		MIllenium Finite	24
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- 12-		Herculux	40
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	Parking Areas	TekDek	58
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		TopDek Post Top	59



Millenium[™] Architectural High Abuse Lighting





Millenium[™] Rounds and Ovals are constructed with the finest materials available, ensuring they will maintain their looks and performance for years to come.



Millenium Rounds and Ovals (MR & MO Series)

- Delivered lumen range: 871 5,672 lm
- Input power range: 13 57W
- 63 117 lm/W
- 3500K, 4000K, 5000K CCT; 80 CRI
- Die-cast aluminum backplate
- Polycarbonate lens for added durability
- Embedded motion sensing option available (CA Title 24-compliant)
- In-Stock options available; ships in 24 hrs

Nominal Size:

13" and 17" diameters

Installation Types: Surface, wall mount and semi-recessed (MR only)















See individual specification sheets for details



Low Profile











Housing



Recessed





Forest Green

SL

Silver









Custom Color (Kenall Blue shown)



Millenium[™] Rounds and Ovals are available in several configurations with many optional features, including embedded motion sensors. This provides a versatile blend of aesthetics and performance that allows designers to use Millenium as a thematic design element throughout a project, from a single building to an entire campus.

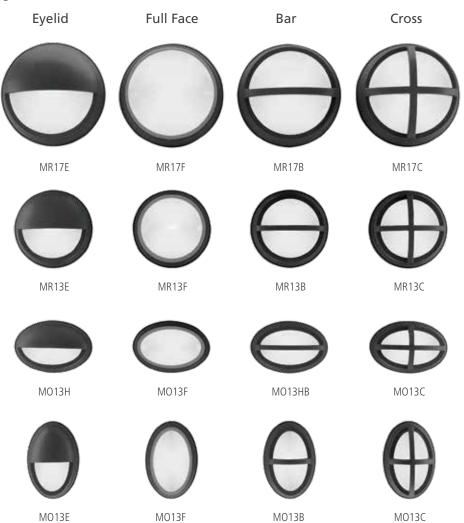




Millenium Rounds are optimal for parks and play areas.

Covered walkways are ideal for ceiling mount installations.

Product Universe



MIllenium™ Squares complement the Round and Oval Series. Designed with many of the same great features, they provide a variety of attractive choices to use throughout a project. The luminaires are available in 11" and 15" sizes with full, eyelid or crossbar faces to enhance a building's architectural facade.



Millenium Squares (MS Series)

- Delivered lumen range: 1,023 5,932 lm
- Input power range: 10 50W
- 80 124 lm/W
- 3500K, 4000K, 5000K CCT; 80 CRI
- Die-cast aluminum baseplate
- Polycarbonate lens for added durability
- Embedded motion sensing options available (CA Title 24-compliant)
- In-Stock options available; ships in 24 hrs

11" and 15" diameters Nominal Size:

Installation Types: Surface, wall mount and semi-recessed













See individual specification sheets for details

Additional Product Information







Low Profile

Deep Housing

Semi-Recessed

Finishes









Dark Bronze

Forest Green

Light Gray

Matte Black

SL Silver



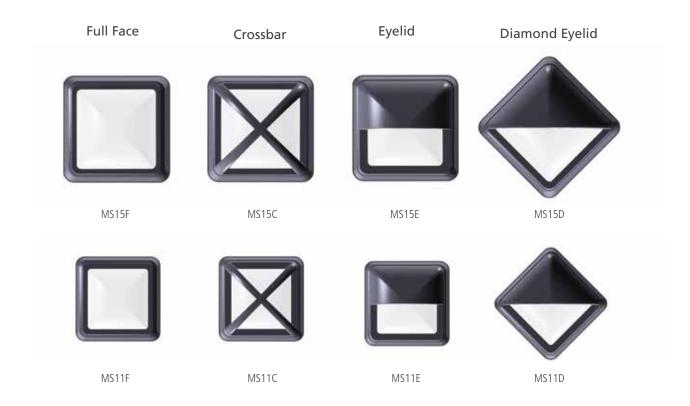
Custom Color



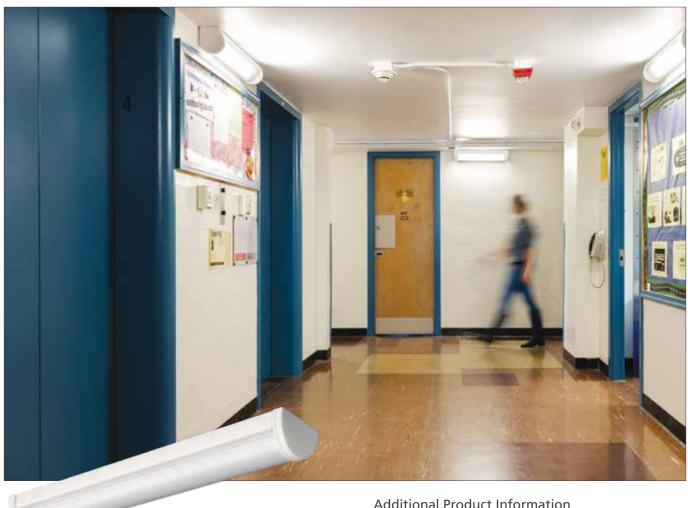




Product Universe



Millenium Stretch™ (MLHA Series) is a flexible lighting system that offers an attractive solution for areas that demand high performance, minimal maintenance and durability. Whether lighting general purpose rooms in schools, physical fitness facilities, natatoriums or stairwells, Millenium Stretch has the versatility to meet the needs of any architectural high abuse or rough service application.



Millenium Stretch (MLHA5, 8 & 12 Series)

- Delivered lumen range: 2,374 10,548 lm (see pg 22 for MLHA12 high lumen package)
- Input power range: 25 98W
- 894 113 lm/W
- 3500K, 4000K, 5000K CCT; 82 CRI
- Die-cast and extruded, marine-grade aluminum housing
- Polycarbonate lens for added durability
- Patented modular system; continuous row mounting available
- Embedded motion sensing option available (CA Title 24-compliant)
- In-Stock options available; ships in 24 hrs

Nominal Sizes: Installation Types: Lamp Types:

5", 8",12" widths; 24", 36", 48", 72", 96" lengths Surface ceiling, wall corner or optional pendant mount LED, T5, T5HO, T8, T8HO















Additional Product Information



UL has listed Stretch as 'suitable for use as a raceway.' Both the 8" and 12" wide series can be utilized for optional, multiple raceways.



Stretch's versatility extends to corner mounted applications when specified with the Corner Mount Bracket (CMB) option.



Available end caps.



Ideal for Use in Multi-purpose rooms: Individual or Continuous Row

Millenium Stretch is available in a variety of lamping options, including LED. Use them individually, in continuous runs or in geometric patterns, for optimum versatility.



End Caps



Rounded



Stepped



Reveal

Custom Color Joiner Bands

End caps are die-cast, marine-grade aluminum. Flat and round end caps feature internal knockouts for surface conduit or Wiremold™ 500/700.

Colored joiner bands, for continuous runs, are ideal for identifying departments, corridors, floors, and security areas for all public access buildings.

Geometric Modular Nodes for Unique Product Configurations



Nodes "L" 2-Way Intersecting



Nodes "T" 3-Way Intersecting



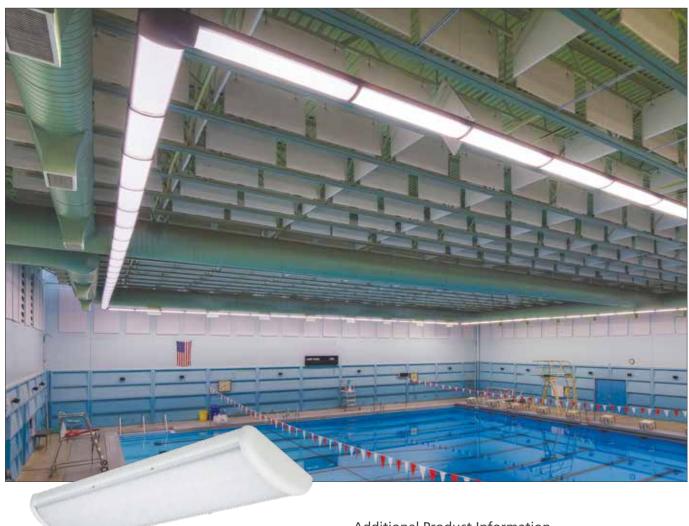
Nodes "Inline"



Nodes "X" 4-Way Intersecting



The Millenium Stretch™ Series offers a high-lumen option for areas such as gymnasiums, multipurpose rooms, workout facilities and natatoriums. Use as individual fixtures or configure in geometric patterns and runs. Built to take repeated impact, these luminaires produce more than 16,000 lumens and also include a pleasing uplight component.



Millenium Stretch (MLHA12 Series) High Lumen Package

- Delivered lumen range: 15,534 16,561 lm
- Input power: 167W
- 93 99 lm/W
- 3500K, 4000K, 5000K CCT; 82 CRI
- Die-cast and extruded, marine-grade aluminum housing
- Polycarbonate lens standard
- Patented modular system; continuous row mounting available
- Embedded motion sensing options available (CA Title 24-compliant)

Nominal Sizes: Installation Types:

12" wide; 48" and 96" lengths Surface, optional pendant mount, optional chain mount













Additional Product Information







Surface Mount

Pendant Mount

Chain Mount



MLHA12 with high lumen package available in 12" width.



The Kenall Millenium OS[™] provides significant cost- and energy-savings. The integral high-frequency Doppler-based motion sensor can dim up to 90% during non-motion sensing periods and provides the ability to maintain wet location listings, IP ratings and vandal resistance. Designed for indoor and outdoor stairwells, corridors, hallways and general use areas, this smart and durable luminaire is ideal for any environment.



Millenium OS (MOS Series)

- Delivered lumen range: 2,267 4,528 lm
- Input power range: 25 56W
- 86 93 lm/W
- 4000K, 5000K CCT
- Vandal-resistant for high-abuse areas
- Compatible with TekLink™ Controls (CA Title 24-compliant)
- Emergency battery backup option available

Nominal Size: | 12"w × 18"l × 4" h Installation Types: | Surface mount to ceiling or wall



Additional Product Information







Thermal management is aesthetically pleasing with no exposed heat sinks. This effective design draws heat away from the LED system, extending LED life



Emergency option available with internal battery back-up for enhanced safety and security.





Versatility in design and function makes Millenium Finite[™] an ideal lighting solution for a variety of applications. These luminaires are available in either dark-sky friendly full-cutoff or uplight mounting orientations to meet a variety of exterior and interior needs. Finite's specially designed optical system delivers full-cutoff performance while reducing energy consumption and waste.



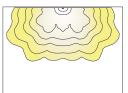
MIllenium Finite[™] (FN Series)

- Delivered lumen range: 1,788 6,637 lm
- Input power range: 20 54W
- 89 –123 Lm/W
- 4000K, 5000K CCT; 70 CRI minimum
- Full cut-off LED wall-pack with classic design aesthetic
- Type II, III and IV optical distribution options
- Available two-circuit and cold-weather battery pack options
- In-Stock options available; ships in 24 hrs

Nominal Sizes: 9" and 15" Installation Type: Surface wall mount



The FN Series utilizes a convenient hook-and-lock mechanism for quick mounting, reduced installation costs and easy maintenance.



Millenium Finite full-cutoff fixtures are available with a variety of lamp sources and distribution patterns, including Type II, Type IV or Type IV Narrow (forward throw) optics.



Dimmable, energy efficient LED lamp sources can be used with controls for an enhanced return on investment.















The Millenium Finite[™] Linear is Kenall's versatile addition to the Finite family. This dark-sky friendly, full-cutoff, wall-mounted luminaire is offered in a variety of lengths and available in both LED and fluorescent lamp sources. With its ability to withstand harsh environmental conditions, the luminaire provides a durable solution for corridors and paths of egress. A convenient joiner end cap option also makes it well-suited for indoor and outdoor continuous-row applications.



MIllenium Finite[™] Linear (FNL Series)

- Delivered lumen range: 1,154 6,874 lm
- Input power range: 14 72W
- 82-96 Lm/W
- 3500K, 4000K, 5000K CCT; 82 CRI
- Extruded aluminum housing with die-cast end caps
- Embedded motion sensing options available (CA Title 24-compliant)
- Configurable as full-cutoff, full-cutoff/ continuous row, uplight, uplight/continuous row
- Low temperature operation

Nominal Sizes: Installation Type: Lamp Types:

 $6\,\text{"w}\times 1\text{'},\,2\text{'},\,3\text{'},\,4\text{'}\ \&\ 6\text{'}\ lengths$ Surface wall mount T5, T5HO, T8, LED

Additional Product Information







Dimmable, energy efficient LED lamp sources can be used with controls for an enhanced return on investment.



Integral joiner end cap assembly provides continuous run wall mounting capability.





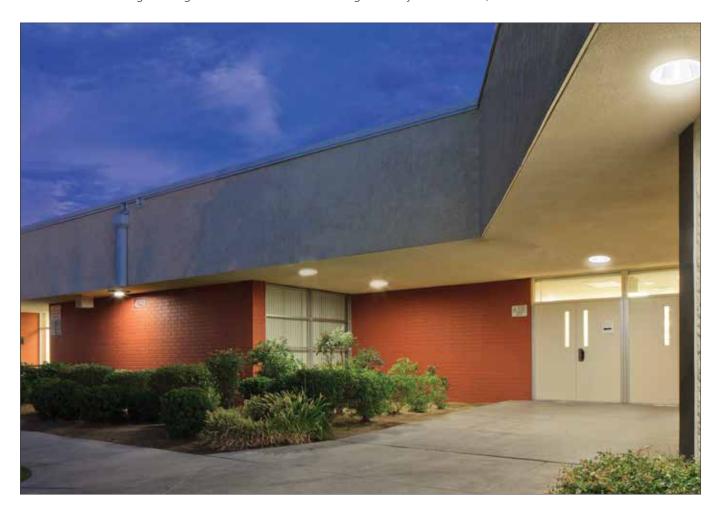








Kenall's Millenium Edge™ is a flat-lens, dark-sky friendly version of the popular Millenium™ Rounds Series, ideal for soffit, low-ceiling or canopy applications. Edge is constructed of environmental- and impact-resistant materials — a marine-grade, aluminum backplate; UV-resistant, polycarbonate lens and lens base; stainless-steel fasteners and extruded closed-cell gasketing — to ensure that it will look great for years to come, whether installed indoors or out.





MIllenium Edge™ (MR13FF, MR17FF Series)

- Delivered lumen range: 1,111 3,206 lm
- Input power range: 13 29W
- 86 -111 lm/W
- 3500K, 4000K, 5000K CCT; 80 CRI
- Marine-grade die-cast aluminum housing
- Emergency battery backup option available

Nominal Sizes:

Surface, semi-recessed ceiling or wall mount Installation Type:















Housing Options







Low Profile

Deep Housing

Semi-Recessed

Additional Product Details



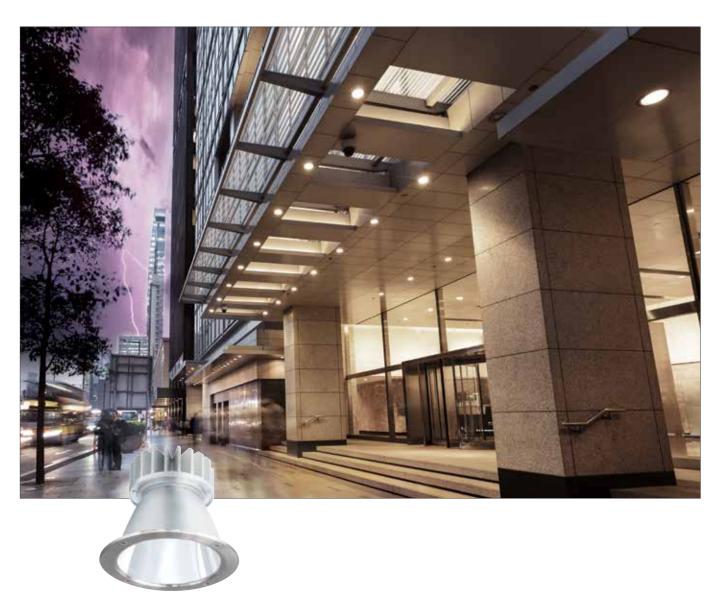
The flat lens is ideal for soffit mounted applications and interior low ceilings. The low profile saves space and clears obstructions.

Edge's trim design makes it an ideal choice for downlight replacements.



NEW Millenium Sealed Flush Lens Downlight

Avoid the headache of downlights that don't live up to your demanding applications. Kenall's new modular, sealed downlights are designed to stay tightly sealed and perform efficiently for years in a variety of applications, including those areas where damp and wet location listings just aren't enough.



Millenium[™] Sealed Flush Lens Downlight (HADL Series)

- Delivered lumen range: 628–5,305 lm
- Input Power range: 15 62W
- 42-86 Lm/W
- CCT: 3000K, 3500K, 4000K or 5000K; 80 CRI minimum
- Standard flush polycarbonate lens and tamper-resistant Torx® screws
- Galvanized steel mounting frame
- Medium, wide and wall-wash optical distribuitons available

Nominal Size: Installation Type:

6" round aperture Recessed ceiling mount













Additional Product Information



One-piece 60° beveled-edge trim ring available in stainless steel.



The Millenium FreeScale[™] sconce delivers when it comes to durability and scalability. Every component is selected for its ability to withstand physical and environmental abuse. Available in a variety of sizes, adaptable mounting configurations, and impressive design options, the FreeScale family is so versatile it can be used throughout a project — indoors and out — providing a level of design consistency rarely found in an architectural luminaire.



Millenium FreeScale Sconce[™] (FS Series)

- Delivered lumen range: 967 7,779 lm
- Input power range: 14 98W
- 48 –79 lm/W
- CCT: 3500K, 4000K or 5000K; 82 CRI
- Round or triangle 100% DR acrylic lens options with multiple lens frame styles
- Marine-grade aluminum baseplate

Nominal Size: Installation Types: Lamp Types: 5", 8" or 12" widths; 12", 18", 24" and 48" lengths Wall mount

T5, T5HO, T8, T8HO, LED











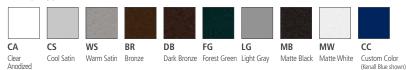


Lensing and bars available in half-round or triangular style.



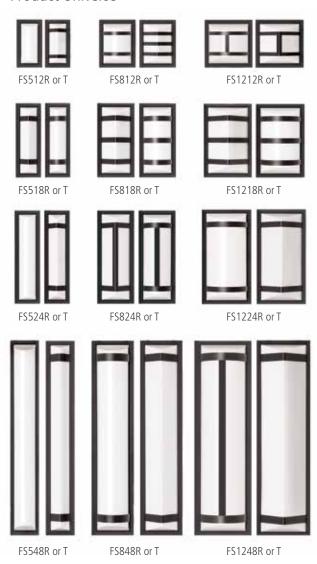
A variety of material and fabrication options are available to meet specific design criteria.

Finishes





Product Universe



Bar detail shown above is configurable.

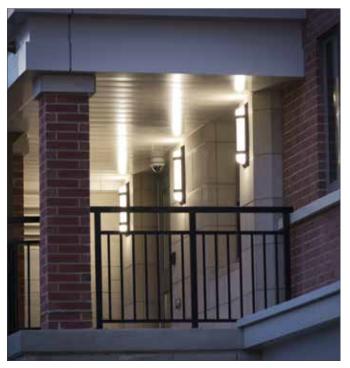
Bar Width

A variety of decorative cross bar configurations are available. Bar widths are scaled to 1", 1-1/2" and 2" widths, according to fixture length, to ensure stability and strength while enhancing architectural appeal.





By day, FreeScale blends with the architecture of the building.



At night, the luminaire accents building columns and contours.



The smooth, gentle lines of the Millenium Auracyl™ sconce complement any building style and the rugged construction will stand up to your most challenging applications. The Auracyl sconce can be used in any exterior entryway, portico, column or building facade for design consistency throughout the facility. Although designed for outdoor use, it is also suitable for indoor use where sophisticated architectural details are desired.



Millenium Auracyl™ (MLAS Series)

- Delivered lumen range: 698 2,749 lm
- Input power range: 14 49W
- 50 57 lm/W
- CCT: 3000K, 3500K, 4000K or 5000K; 82 CRI
- Standard antimicrobial finish for cleanability
- Sealed backlight creates a pleasing visual accent and NSF2 listing

Nominal Size: Installation Types: Lamp Types:

 $8"\times13"$, $8"\times26"$, $8"\times38"$ and $8"\times50"$ Surface wall mount T5, T5HO, T8, LED















Frame Type











Capital







Squares





Rank Lattice

Bricks

Orbs



Millenium Metrex™ Exit

The Kenall Millenium Metrex™ exit and emergency series includes best-in-class, architectural high-abuse products that combine state-of-the-art LED technology, advanced optical performance and Kenall's trusted durability in a visually pleasing package. Metrex LEDs are driven below capacity to provide long life and feature a bright, evenly-illuminated face that is visible, without being obtrusive. The NiCad battery backup option features deep cycle conditioning at initial startup to maximize battery life. Also suitable for exteriors, such as parking garages, and outdoor paths of egress.



Additional Product Information

Millenium Metrex[™] (MET Series)

- All high-impact polycarbonate construction
- LEDs driven at 60% (green) and 25% (red) rated capacity for long life
- Standard battery conditioning, self testing, and self diagnostics with battery backup
- Battery backup testing initiated by laser pointer
- Cold weather reliability down to -49°F
- Hot weather reliability up to 113°F

Installation Types: | Surface wall or ceiling mount Lamp Types: | LED







METEC Exit/Emergency Combo Merges the finest high abuse luminaire design, state-of-the-art technology and MR16-based emergency lighting to meet life safety code requirements.















See entire family of emergency and exit products, including Chicago area exits, at www.kenall.com.



above doors.



Is Staph Lurking in Your Locker Room?

Add the Power of Disinfection to your High Abuse Lighting

2 cases of MRSA confirmed at Naperville High School

ABC7 Chicago.com

Warning About MRSA **Infections Spreading at Gyms**

http://abc3340.com/news/fighting-for-you/warning-about-mrsa-infections-spreading-at-gyms

MRSA: a silent danger lurking in NFL locker rooms

http://pro32.ap.org/article/mrsa-silent-danger-lurking-nfl-locker-rooms

High school athletic departments 'wrestle' with disinfection issues

Fauquier Times-Jan 26, 2017

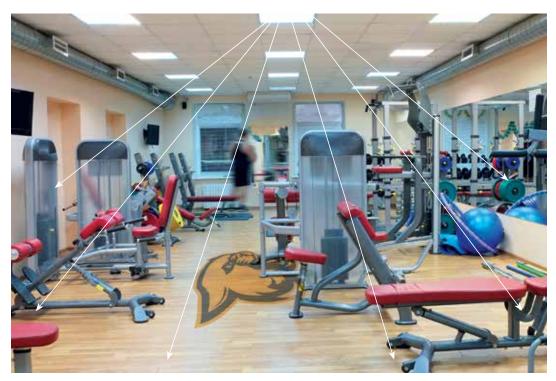
Kenall's high abuse luminaires with Indigo-Clean Technology utilize a safe, new, state-of-the-art technology to kill harmful bacteria in critical environments, such as locker rooms, sports training facilities, gymnasiums and more. These revolutionary new LED luminaires combine white ambient light with 405nm Indigo light, to provide on-demand disinfection.

Kenall's high abuse luminaires using **(Indigo-Clean Technology**

- Kill harmful bacteria, including Staph, such as MRSA, per independent lab test results
- Unlike UV disinfection devices, light is safe for occupants and requires no special technician
- Provides a cleaner, safer environment, even in areas normal cleaning doesn't reach



On-Demand Disinfection Lighting that Fits Your Budget



Help prevent the spread of Staph*, such as MRSA**, with these unique, cost-effective LED luminaires.

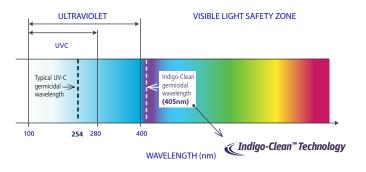
Kenall's Millenium Stretch and SimpleSeal luminaires with Indigo-Clean technology combine white, ambient light with 405nm Indigo light, to provide on-demand environmental disinfection.

- The 405nm light targets bacteria and produces intra-cellular Reactive Oxygen Species (ROS).
- Similar to bleach, these ROS kill the bacteria and prevent it from re-populating the space.
- The 405nm emitted from Indigo-Clean Technology reflects off of walls and surfaces.



Per independent lab report #SGS-09S16076094. Contact Kenall for a copy of this report.

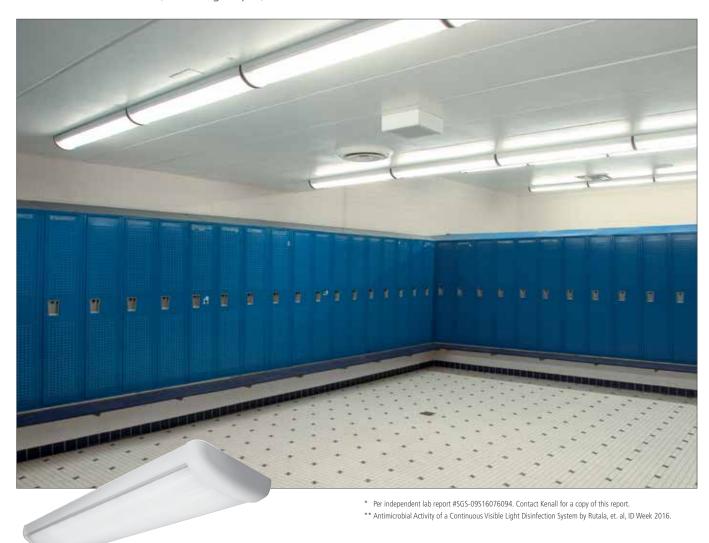
Visible light spectrum showing the active element in Indigo-Clean™



^{**} Antimicrobial Activity of a Continuous Visible Light Disinfection System by Rutala, et. al, ID Week 2016.

NEW Millenium Stretch™ Using **(Indigo-Clean Technology**

The MIllenium Stretch Series featuring Indigo-Clean Technology is a surface-mount, IP64-rated, sealed luminaire ideal for locker rooms, sports facilities, gymnasiums, restrooms and natatoriums. It provides on-demand disinfection that kills harmful bacteria, including Staph*, such as MRSA**.



Millenium Stretch™ (MLHA Series) using Indigo-Clean Technology

- Lumen range: 5,299 10,901 lm
- Input power range: 63 125W
- 83-95 lm/W
- CCT: 3200K, 3700K or 4300K; 82 CRI
- Provides on-demand environmental disinfection via LED light
- Single, white disinfection mode

Nominal Sizes: 12" wide; 48" & 96" lengths

Installation Types: | Surface, ceiling, optional corner or pendant mount

End Caps







Stepped

Reveal







NEW Inset Door Using (Indigo-Clean Technology

The HASEDI Series, a recessed, IP65-rated luminaire designed for universal installation in 1 and 1.5 grid and flange ceilings, now features Indigo-Clean Technology. This revolutionary new technology provides on-demand disinfection that kills harmful bacteria, including Staph*, such as MRSA**.



High Abuse (HASEDI Series) using Indigo-Clean Technology

- Lumen range: 4,700 15,664 lm
- Input power range: 64 125W
- 73-94 lm/W
- CCT: 3200K, 3700K or 4300K; 82 CRI
- Provides on-demand environmental disinfection via LED light
- Single, white disinfection mode
- One piece sealed housing with smooth exterior doorframe and lens for simplified cleaning protocols

Nominal Sizes: $| 1' \times 4', 2' \times 4' \text{ or } 4' \times 4$

Installation Types: Recessed ceiling mount, grid or flange













High Abuse Lighting





Herculux™ is the original, heavy-duty, high-abuse lighting series. These luminaires are designed to withstand tampering and vandalism while remaining maintenance-free. The series features the latest in LED technology and embedded motion sensing to provide the perfect amount of light at the right time.



H99EL H99FL

Herculux™ (H Series)

- Delivered lumen range: 827 5,509 lm
- Input power range: 11 54W
- 63 -117 lm/W
- CCT: 3500K, 4000K or 5000K; 80 CRI
- Cold-rolled steel baseplate (low profile)
- Die-cast marine-grade back box (medium/deep profile)
- Polycarbonate lens with stabilized, injection-molded diffusers
- Interchangeable visors/shields
- Embedded, motion sensing option available in H1212 (CA Title 24-compliant)
- LED emergency battery backup

 $6" \times 9"$, $6" \times 12"$, $9" \times 9"$, $12" \times 12"$ Nominal Sizes: Installation Type: Surface











Housing Options







Low Profile

Medium Profile

Deep Profile





Eyelid

Full Face

Herculux high abuse luminaires offer versatility in mounting, and visors for light control. The dark sky-friendly visor provides full uplighting cutoff for environmentally-sensitive applications.



Herculux[™] (H Series)

- Delivered lumen range:1,174 5,066 lm
- Input power range:20 –54W
- 86 108 lm/W
- CCT: 3500K, 4000K or 5000K; 80 CRI; One-piece, die-cast aluminum housing
- · Polycarbonate lens
- IESNA-designated full cutoff
- Available in low, medium or deep housing styles

Nominal Size:

 $9"\times 9"$ and $12"\times 12"$ Installation Types: | Surface ceiling mount









Product Universe







12"×12" Cutoff

Housing Options







Deep

Installed in thousands of projects across the United States, the award-winning, high-efficiency LED EnviroPro EPLB has a traditional high bay appearance that houses many of Kenall's greatest technological advances. EnviroPro EPLB is a high-efficiency LED luminaire with both NSF2 and IP65 ratings: pair it with TekLink™ controls for even greater energy savings.



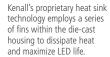
EnviroPro[™] (EPLB Series)

- Delivered lumen range: 1,375 24,005 lm
- Input power range: 22 210W
- 48-118 lm/W
- CCT: 3000K, 3500K, 4000K or 5000K; 70 minimum CRI
- Choice of refractor or reflector: clear prismatic acrylic polycarbonate, spun aluminum, or pearlescent prismatic acrylic
- TekLink[™] controls compatible (CA Title 24-compliant)
- L70 life rated up to 150,000 hrs.
- Easy replacements for 250W and 400W HID fixtures

Nominal Sizes: Installation Types:

12", 16", 22" Diameter Ceiling mount, pendant or loop hanger







Choice of spun aluminum reflector, prismatic clear acrylic, polycarbonate and pearlescent acrylic.



Torsion spring for tool-less access provides quick lens removal for ease of relamping and maintenance.









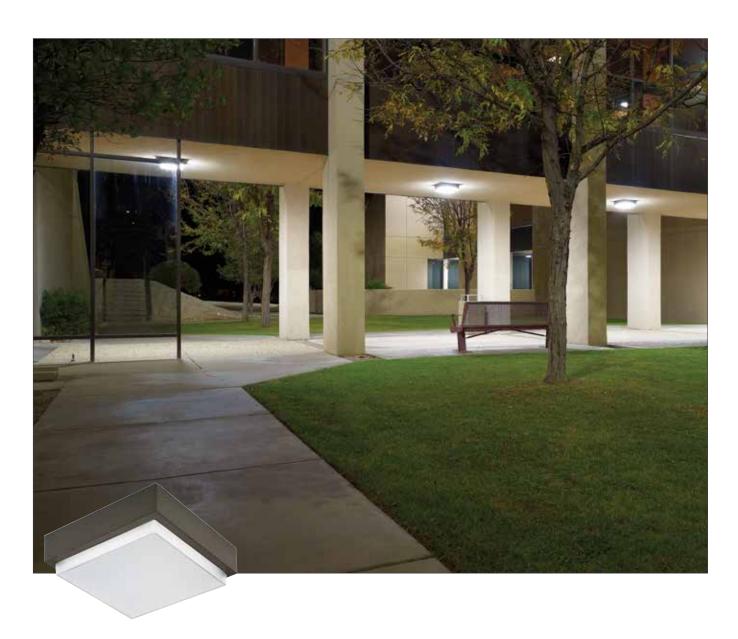








Sentinall™ luminaires are designed and manufactured with Kenall's most popular LED lighting features and protected by our Peace of Mind Guarantee®. They blend well with the architectural aesthetics of any building exterior.



SentinalI[™] (S Series)

- Delivered lumen range: 921 3,553 lm
- Input power range: 14 30W
- 83 -122 lm/W
- CCT: 3500K, 4000K or 5000K; 80 CRI
- UV-stabilized, injection-molded polycarbonate lens
- Stainless steel Torx® fasteners

Nominal Size: \mid 5" \times 11", 7" \times 11" and 14" \times 14" Installation Types: \mid Surface ceiling or wall mount











Housing Options



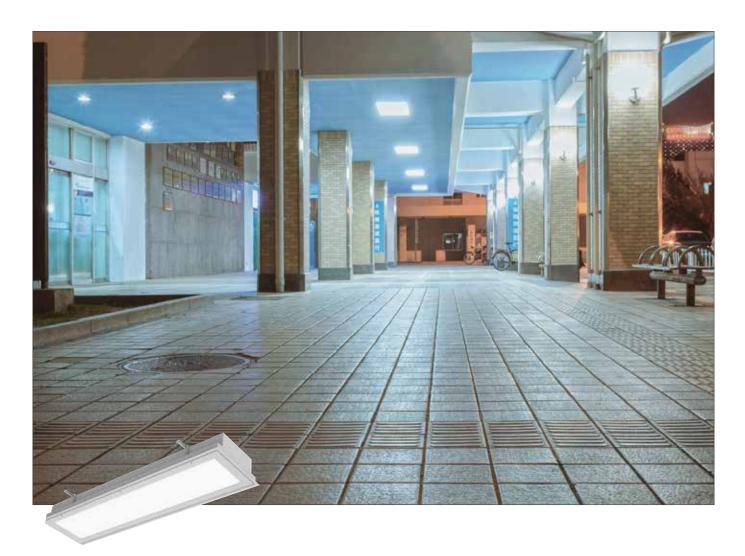


Low Profile

Deep Profile



The HASE Insert Door Series is designed for installations that are exposed to high abuse. The units are sealed against contaminants, insects and water, and feature an optional one-piece, stainless doorframe hinge and fasteners. They are also available with a polycarbonate lens for added durability, and are suitable for indoor or outdoor installations.



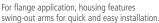
High Abuse Inset Doors (HASE Series)

- Delivered lumen range: 4,164 21,394 lm
- Input power range: 50 200W
- 81 107 lm/W
- 3500K, 4000K, 5000K CCT; 82 CRI
- · One-piece inset doorframe, secured to housing with continuous piano hinge and tamper-resistant Torx® fasteners
- Diffused high-efficiency, polycarbonate lens for reduced glare

Nominal Size: Installation Types: Lamp Types:

 $1' \times 4'$, $2' \times 2'$ or $2' \times 4'$ Surface recessed grid or flange; corner mount LED, T5, T8, T5HO







Doorframe secured to housing by piano hinge and stainless steel fasteners.







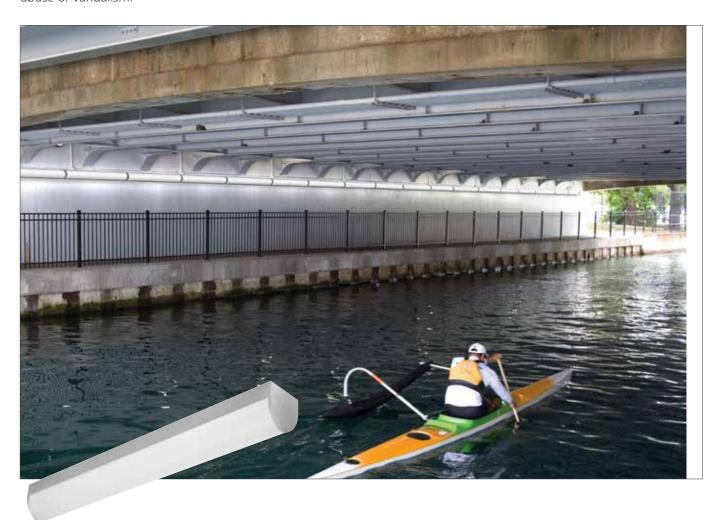








EnviroSeal™ wraparound luminaires are UL/cUL IP65 optional, making them ideal for exterior use in corrosive, dirty and wet environments. The polycarbonate and high-impact acrylic lens contribute to EnviroSeal's industry-leading durability. Plus, when specified with a polycarbonate lens — and backed by our exclusive Peace of Mind Guarantee® against breakage — they are perfect for applications where luminaires are subject to repeated attempts of physical abuse or vandalism.



EnviroSeal[™] (ES Series)

- Delivered lumen range: 2,205 –10,325 lm
- Input power range: 25 98W
- 88 -111 lm/W
- 3500K, 4000K, 5000K CCT: 82 CRI
- One-piece, seam-welded, cold-rolled or stainless steel housing
- UV-stabilized, pearlescent or clear polycarbonate
- Continuous row mount for multiple luminaires
- Embedded motion sensing options available (CA Title 24-compliant)
- Also available for hazardous locations (HES Series)

Nominal Size: Installation Types: Lamp Types: 3", 5", 8" and 12" widths; 2', 3', 4', 6' and 8' lengths Surface ceiling or wall mount; optional pendant mount LED, T5, T5HO, T8, T8HO











Flexible Configurations



EnviroSeal luminaires are available in four widths and a variety of sizes and lamp configurations, offering a selection of luminaires that are suitable for an array of applications.

Nova™ is a rugged, linear luminaire featuring heavy-gauge, cold-rolled steel baseplates and injection-molded polycarbonate diffusers. With its seamless enclosure and careful sealing, it is designed to withstand years of wear and rough service; remaining virtually maintenance-free. Choose LED and embedded motion sensors for dramatic energy savings as well.





Nova[™] (N Series)

- Delivered lumen range: 1,801 9,555 lm
- Input power range: 25 90W
- 75 -108 lm/W
- CCT: 3500K, 4000K or 5000K; 82 CRI
- Cold-rolled steel baseplate
- One-piece, injected-molded, polycarbonate wraparound lens
- Embedded motion sensing options available (CA Title 24-compliant)
- In-stock option available; ships in 24 hrs

Nominal Size: Installation Types: Lamp Types:

5" or 10" widths; 24" or 48" lengths Surface ceiling or wall mount T5, T5HO, T8, LED

















Conduit entry tear-away

Sheriff™ is a versatile, high-abuse wraparound luminaire featuring multiple sizes and wattages. With its polycarbonateformed lens and heavy-gauge, welded construction, it is the most durable wraparound available today.



Sheriff[™] (SH Series)

- Delivered lumen range: 3,582 7,768 lm
- Input power range: 44 89W
- 79 90 lm/W
- CCT: 3500K, 4000K or 5000K; 82 CRI
- Cold-rolled steel baseplate
- Polycarbonate wraparound lens
- Embedded motion sensing options available (CA Title 24-compliant)

Nominal Size: Installation Types: Lamp Types:

5", 8" or 12" widths; 24", 36", 48", 72" or 96" lengths Surface ceiling, wall or pendant mount LED, T5, T8, T5HO





KENALL













These Rough Service luminaires are designed for spaces where they are subject to accidental breakage or incidental contact, but not intentional vandalism.







- Delivered lumen range: 1,109 2,422 lm
- Input power range: 10 20W
- 84 -102 lm/W
- CCT: 3500K, 4000K or 5000K; 80 CRI
- Cold-rolled steel housing
- UV-stabilized, high-impact polycarbonate lens
- Polycarbonate end caps

Nominal Size: Installation Types:

 $7"w \times 13"d \times 3"d$ Surface wall mount



Rough-house[™] (RHL720C Series)

- Delivered lumen range: 1,260 2,651 lm
- Input power range: 13 24W
- 99 114 lm/W
- CCT: 3500K, 4000K or 5000K; 80 CRI
- Cold-rolled steel housing
- UV-stabilized, high-impact polycarbonate lens
- Polycarbonate end caps

Nominal Size: Installation Types:

 $7"w \times 21"d \times 3"d$ Surface wall mount



Rough-house[™] (RHR Series)

- Delivered lumen range: 2,006 3,371 lm
- Input power range: 19 24W
- 103-119 lm/W
- CCT: 3500K, 4000K or 5000K; 80 CRI
- .050" aluminum housing
- UV-stabilized high-impact polycarbonate lens
- Low and deep profile

Nominal Size:

15" Diameter × 4" or 5.5" d Installation Types: | Surface ceiling or wall mount









































Rough-house™ (RHL7 Series)

- Delivered lumen range: 2,534 4,920 lm
- Input power range: 25 45W
- 84 -103 lm/W
- CCT: 3500K, 4000K or 5000K; 82 CRI
- Cold-rolled steel baseplate
- UV-stabilized, high-impact acrylic lens; polycarbonate lens option
- Polycarbonate end caps

Nominal Size: Installation Types: Lamp Types: 7" wide; 24", 36" and 48" lengths Surface wall mount LED, T5, T8











Ranger[™] (R Series)

- Delivered lumen range: 1,750 7,768 lm
- Input power range: 23 89W
- 76 90 lm/W
- CCT: 3500K, 4000K or 5000K; 82 CRI
- Cold-rolled steel baseplate
- One-piece, extruded, prismatic, acrylic lens; polycarbonate lens optional
- In-Stock option available; ships in 24 hrs

Nominal Size: Installation Types: Lamp Types: 5", 8" and 12" widths; 2' and 4' lengths Surface ceiling, wall or optional pendant mount LED, T5, T5HO, T8













Millenium Stretch (MLRS Series)

- Delivered lumen range: 4,246 9,477 lm
- Input power range: 50 101W
- 84 -103 lm/W
- 3500K, 4000K, 5000K CCT; 82 CRI
- Die-cast end caps and extruded, marine-grade aluminum housing
- UV-stabilized, high impact extruded clear or pearlescent acrylic
- Motion-sensing option available on some models (CA Title 24-compliant)
- Patented modular system; continuous row mounting for flexibility

Nominal Sizes: Installation Types: Lamp Types: 5", 8", 12" widths; 24", 36", 48", 72", 96" lengths Surface ceiling, wall corner or optional pendant mount LED, T5, T5HO, T5HO Amalgam, T8











SimpleSeal™ Inset Door	52
Millenium™ Sealed Flush Lens Downlight	53
EnviroSeal™	54
Herculux™ Corrosive and Coastal	55



The HASE Insert Door Series is designed for installations that are exposed to challenging and corrosive conditions and abuse, such as outdoor canopies and coastal areas. The units are sealed against contaminants, insects and water, and feature an optional one-piece, stainless doorframe hinge and fasteners. They are also available with a polycarbonate lens for added durability and are suitable for indoor and outdoor installations.



High Abuse Inset Doors (HASE Series)

- Delivered lumen range: 4,164 21,394 lm
- Input power range: 45 180W
- 81 107 lm/W
- 3500K, 4000K, 5000K CCT; 82 CRI
- One-piece 18-guage inset doorframe, secured to housing with continuous piano hinge and tamper-resistant Torx® fasteners
- Diffused, polycarbonate high-efficiency lens for reduced glare

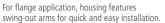
Nominal Size: Installation Types: Lamp Types:

 $1' \times 4'$, $2' \times 2'$ or $2' \times 4'$

Surface, recessed grid or flange; corner mount

LED, T5, T8, T5HO







Doorframe secured to housing by piano hinge and stainless steel fasteners.













NEW Millenium™ Sealed Flush Lens Downlight

Kenall's Millenium™ flush lens downlights are ideal for outdoor canopies and covered walkways, where corrosion and durability are key. Featuring stainless steel trim rings and heavy-duty polycarbonate lenses, they are carefully sealed to prevent the ingress of water and contaminants into the fixture and are also easy to clean.



Millenium[™] Sealed Flush Lens Downlight (HADL Series)

- Delivered lumen range: 628-5,305 lm
- Input Power range: 15 62W
- 42-86 lm/W
- CCT: 3000K, 3500K, 4000K or 5000K; 80 CRI minimum
- Standard flush polycarbonate lens and tamper-resistant Torx® screws
- Galvanized steel mounting frame
- Medium, wide and wall-wash optical distribuitons available

Nominal size: Installation Type:

6" round aperture Recessed ceiling mount











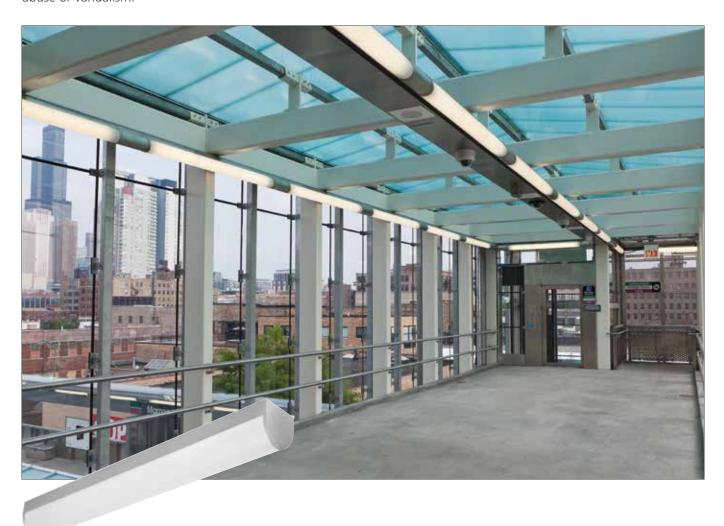




One-piece 60° beveled-edge trim ring available in stainless steel.



EnviroSeal™ wraparound luminaires are UL/cUL IP65 optional, making them ideal for exterior use in corrosive, dirty and wet environments. The polycarbonate and high-impact acrylic lens contribute to EnviroSeal's industry-leading durability. Plus, when specified with a polycarbonate lens — and backed by our exclusive Peace of Mind Guarantee® against breakage — they are perfect for applications where luminaires are subject to repeated attempts of physical abuse or vandalism.



EnviroSeal[™] (ES Series)

- Delivered lumen range: 2,205 10,325 lm
- Input power range: 25 90W
- 88 -111 lm/W
- 3500K, 4000K, 5000K CCT: 82 CRI
- One-piece, seam-welded, cold-rolled or stainless steel housing
- UV-stabilized, pearlescent or clear polycarbonate
- Continuous row mount for multiple luminaires
- Embedded motion sensing options available (CA Title 24-compliant)
- Also available for hazardous locations (HES Series)

Nominal Size: Installation Types: Lamp Types:

3", 5", 8" and 12" widths; 2', 3', 4', 6' and 8' lengths Surface ceiling or wall mount; optional pendant mount LED, T5, T5HO, T8, T8HO











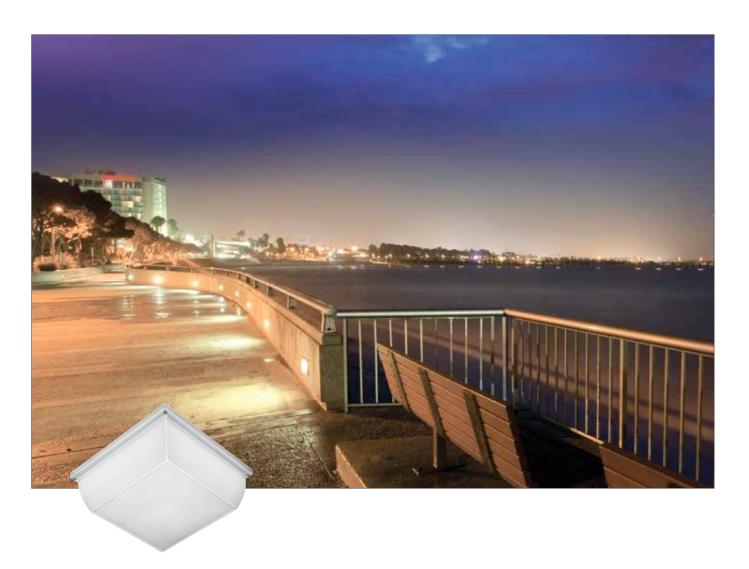
Flexible Configurations



EnviroSeal luminaires are available in a variety of sizes and lamp configurations offering a selection of luminaires that are suitable for an array of applications.



These virtually indestructible LED wall-mount luminaires feature marine-grade aluminum backplates, high-impact polycarbonate lenses, and stainless steel fasteners for superior resistance to physical abuse, theft, weathering and corrosion. The luminaires are particularly ideal for use in wet, humid and coastal areas for superior lighting performance and long life.



Herculux™ (H Series)

- Delivered lumen range: 691 5,509 lm
- Input power range: 8 50W
- 63 117 lm/W
- CCT: 3500K, 4000K
- One-piece, powder-coated, marine-grade aluminum backplate
- Injection-molded, UV-resistant polycarbonate diffuser
- Stainless steel, tamper-resistant Torx® fasteners

Nominal sizes: 6"×12", 12"×12" Installation Types: Surface ceiling or wall

Product Universe













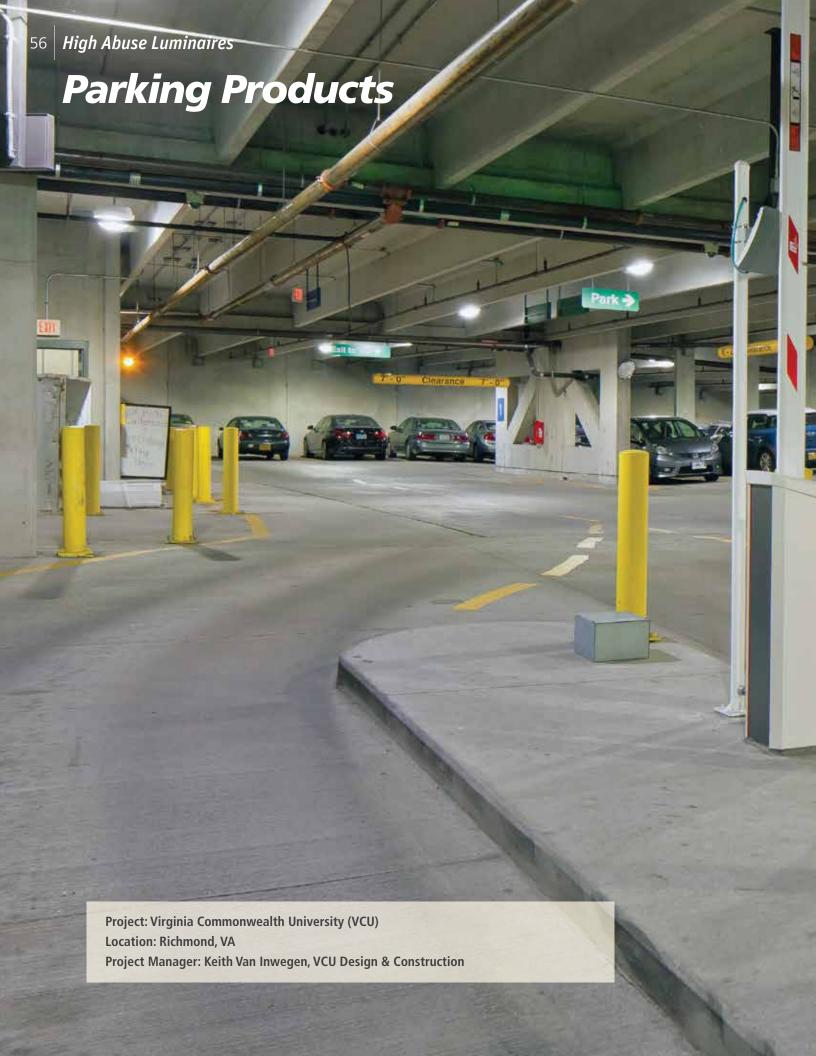














The Kenall TekDek™ TD17 Series has a range of lumen packages and is extremely adaptable, thanks to a variety of mounting types and distribution options. While they are frequently found in parking garages, due to their unique low-glare textured lens, they can also be used in other challenging applications from educational settings to correctional facilities and natatoriums, as well as cold storage and retail.



Distribution Flexibility

TekDek (TD17 Series)

- Delivered lumen range: 3,953 14,681 lm
- Input power range: 30 104W
- 69 -157 lm/W
- CCT: 3000K, 3500K, 4000K, 5000K, 5700K; 70 Minimum CRI
- Textured tertiary lens for glare reduction and uplight feature to eliminate "cave effect"
- Patented concealed heat sink for effective thermal management
- Corrosion resistant
- Compatible with TekLink controls

Nominal Sizes: 17" Diameter

Installation Types: Direct-to-surface, quick-mount, Trunnion kit or pendant-mount























Type 5S Square



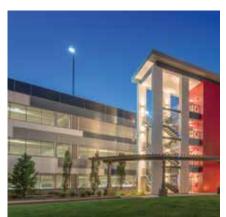
Type 5N Narrow Round



Kenall offers a comprehensive series of luminaires to address a variety of needs within your parking structure, including the new SenScape[™], TopDek[™] and TopDek[™] Post Top. Like TekDek[™], they are compatible with our awardwinning TekLink™ lighting controls system. When high efficacy, low glare and reduced maintenance are valued, specify this robust series of luminaires.















SenScape[™] (SPG18 Series)

- Delivered lumen range: 4,000 –10,500 lm
- Input power range: 30 100W
- 95 -120 lm/W
- CCT: 3500K, 4000K, 5000K, 5700K; 80 CRI
- UV-stabilized, high-impact resistant polycarbonate housing
- Textured tertiary lens for glare reduction
- Desirable 10% uplight; eliminates the 'cave-effect'
- Embedded microwave sensor offers an industryexclusive Peace of Mind Guarantee®
- Optical patterns designed specifically for covered parking, canopy, and low bay applications
- Compatible TekLink[™] controls

Nominal Size: Installation Types:

18" Diameter Direct-to-surface, quick-mount, Trunnion kit or pendant-mount

TopDek™ Post Top (TPDPT Series)

- Delivered lumen range: 7,173 34,361 lm
- Input power range: 100 408 W
- 48 -114 lm/W
- CCT: 4000K, 5000K, 5700K; 70 minimum CRI
- Die-cast, marine-grade aluminum housing
- Textured acrylic or polycarbonate lens for superior glare reduction
- Type II, III, IV, V-Narrow Round, and V-Wide Square distributions
- Sealed optics with IESNA full cutoff distribution; flat lens option
- Internal house-side shield reduces wind loading
- 3G tested for vibration per ANSI C136.31
- Compatible with TekLink[™] controls

Nominal Size:

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

TopDek™ (TPD23 Series)

- Delivered lumen range: 9,424 30,443 lm
- Input power range: 92 300 W
- 70 -109 lm/W
- CCT: 4000K, 5000K, 5700K; 70 minimum CRI
- Die-cast, marine-grade aluminum housing
- Textured acrylic or polycarbonate flat lens for superior glare reduction
- Type II, III, IV, V-Narrow Round, and V-Wide Square distributions
- Sealed optics with IESNA full cutoff distribution
- Internal house-side shield reduces wind loading
- 3G tested for vibration per ANSI C136.31
- Compatible with TekLink[™] controls

Nominal Size: Installation Types:

23" Diameter Pole mounted (pole by others), wall-mount









Polycarbonate Lens Only

























Kenall's Best Selling Fixtures: From Our Door to Yours in 24 Hours

The most popular high abuse products — including Millenium and Herculux — can be shipped in as little as 24 hours from order placement. Visit www.Kenall.com for details on Kenall's In-Stock program.



5-Day Shipping On Popular High Abuse Products

In addition to our In-Stock & Ready to Ship Program, Kenall announces 5-day shipping on the following popular high abuse products:

- Millenium: Stretch, Round and Square (MLHA, MR, MS Series)
- Herculux (H Series)
- Sheriff/Ranger (R, SH Series)

With our most popular fixtures shipping in 24-hrs to 5 days, you can count on Kenall to deliver.



Kenall's luminaires are expertly designed in our state-of-the-art, vertically integrated, static-controlled manufacturing facility in Wisconsin. This enables us to provide tight control over the entire development process from fixture design and engineering to full-fledged metal fabrication, paint, assembly and shipping. We also take great care in sourcing only the highest-quality components to assure optimal product performance.

Our products comply with the Buy American Act, which is your best assurance of quality, consistent delivery and protection for United States jobs.





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.

Lamp Type



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



Sample Ordering Information

Example: MLHA12-48-F-LG-PP-90L40K-DCC-DV

MLHA12

Length

Leng	CI I	Lamp Typ		Duna	30 Dilver Type
24	2'	2' Length	<u>ıs</u>	DCC	Dimming Constant Current (LED)
36	3'		25 Watt 3500K LED	IS	Instant Start Electronic <10% THD (T8,T8HO)
48	4'	25L40K	25 Watt 4000K LED	RS	Rapid Start Electronic <10% THD (T8,T8HO,T5,T5HO
72	Two 3' (factory connected)	25L50K	25 Watt 5000K LED	SB	Specified Ballast
96	Two 4' (factory connected)	45L35K	45 Watt 3500K LED		· ·
	, , , , , , , , , , , , , , , , , , , ,	45L40K	45 Watt 4000K LED	Circu	it Quantity‡
End (Cans	45L50K	45 Watt 5000K LED	1	One
F	Flat	14	F14T5	2†	Two (Two Ballast Minimum)
R	Rounded	17	F17T8		(
RV	Reveal	24▲	F24T5HO	Volta	nne
	nevea.		12113110		120 Volts
Finis	h	3' Length	s	277	277 Volts
LG	Light Gray	21	 F21T5	347	347 Volts (Consult Factory)
MB	Matte Black	25	F25T8	DV	120-277 Volts
MW	Matte White	39	F39T5H0		120 277 1010
CC	Custom Color (Consult Factory)			Optio	ons
	,	4' Length	s		500 Minimum Lumen Battery Pack
Lens		45L35K	45 Watt 3500K LED		(90 Minutes; 32°F Starting Temperature)
CP‡	Clear Polycarbonate	45L40K	45 Watt 4000K LED	PEL=	† 1100 Minimum Lumen Battery Pack
PP	Pearlescent Polycarbonate	45L50K	45 Watt 5000K LED		(90 Minutes; 32°F Starting Temperature)
		67L35K	67 Watt 3500K LED	LEL	LED Emergency Battery Backup
Lamr	Quantity (Cross Section)‡	67L40K	67 Watt 4000K LED		(45L only, 32°F minimum operating temperature)
1	One	67L50K	67 Watt 5000K LED	CDF	Captive Diffuser Fasteners
2	Two	90L35K	90 Watt 3500K LED	DL	Damp Location (Interior use NO gasketing)
3	Three	90L40K		FS	Single Fuse & Holder (one per circuit)
4	Four	90L50K	90 Watt 5000K LED	NAT	
		150L35K	150 Watt 3500K LED	PH	Phillips Head Fasteners
		150L40K	150 Watt 4000K LED	РМδ	
		150L50K	150 Watt 5000K LED	TN ^{▲‡}	Twin Tube Night Light – 5/7/9 watts (120V only)
		28	F28T5	UC‡	Uplight Component (Pendant Mount only; stems by
		32	F32T8		others; damp only)
		44	F48T8HO (2 lamp only)	MS	Motion Sensor (4' LED only)
		54	F54T5HO		(n/a with 347 Voltage Option)
		54A	F54T5HO amalgam		· 5 1 · · /

Accessories

CMB§ Corner Mount Bracket
(Must be ordered with DL Option)

9500 Torx® Screwdriver

D-0552 Torx Driver Bit (Required for CMB Option)

- † n/a on 2' T5/T5HO or 3' T5HO fixtures with EL, PEL, or TN options.
- ▲ n/a with 347V
- 347V available with EL and PEL options only with two T8 lamps
- ▼ 2' Fixtures have minimum 350-450
- lumen battery pack
- n/a on 2' fixtures
- † n/a with LED Lamp Options
- § PM and CMB not available in conjunction



Ballast/Driver Type

High Abuse Luminaires

Testing, Listings, Certifications, Warranties

Fixtures designed for use in high abuse settings must satisfy a large number of demanding lighting and environmental requirements. Listings applicable to the high abuse luminaires featured in this high abuse product selector guide are shown below. Please refer to the 'Product Universe' within each section of this guide to determine product specific listings, or visit us on the web at www.kenall.com.



UL/CUL Listed—The UL symbol signifies that Underwriter's Laboratory (UL) has determined that a manufacturer has demonstrated the ability to produce a product complying with UL's requirements with respect to specific risk, performance under specific conditions, compliance with regulatory codes and specified standards, or any other conditions as determined by UL.



ETL—A product bearing the ETL Listed mark is determined to have met the minimum requirements of prescribed product safety standards as certified by a Nationally Recognized Testing Laboratory (NTL). The mark also indicates that the manufacturer's production site conforms to a range of compliance measures and is subject to periodic follow-up inspections to verify continued conformance



IP64—UL Certified IP64 per IEC 60598 ensures that the enclosure is dust-tight and protected against splashing water without any harmful effects.



IP65— UL Certified IP65 per IEC 60598 ensures that the enclosure is dust-tight and protected against jet streams of water from any direction without any harmful effects.



NSF2—An NSF2 Listing denotes that the luminaire has been evaluated for corrosion resistance, cleanability and the ability of exposed material to withstand normal wear. This supports infection control standards as it indicates that the luminaire is easy to sanitize.



CCEA Approved—The City of Chicago Environmental Air (CCEA) rating ensures that the luminaire is inherently airtight. Wiring and/ or branch circuit terminations are sealed off and gasketed from the plenum air space. This listing ensures that the luminaire is sealed to limit air flow from the room side to the plenum.



IC RATED—An IC rated fixture must, by definition, "be approved for zero clearance insulation cover by a nationally recognized OSHA testing laboratory", such as Underwriters Laboratory (UL). "IC" is short for Insulation Contact, which means that any housing that bears this rating can make direct contact with ceiling insulation.



ADA Compliant—Although ADA is not specific to lighting, it does impact fixture design by creating standards for wall sconce projection space and hanging light clearance. Section 4.4 of the ADA states that "objects projecting from walls with their leading edges between 27" and 80" above the finished floor shall protrude no more than 4" into walks, halls, corridors, passageways or aisles."



UL 924—UL 924 is UL's Standard for Safety of Emergency Lighting and Power Equipment. UL 924 listed electrical exit signs are tested and given a visibility rating of at least 100 feet, requiring them to be legible from a 100 foot viewing distance in total darkness. The battery backup is tested by UL and must provide at least 90 minutes of emergency operation. Letters must be red or green and at least 6" height with a 3/4" letter stroke.



NFPA101—This National Fire Protection Agency (NFPA) Life Safety Code pertains to egress facilities. The code establishes minimum criteria for the design of egress facilities so as to allow prompt escape of occupants from buildings or, where desirable, into safe areas within buildings.



DesignLights Consortium — Kenall's state-ofthe-art photometric lab has passed the most stringent proficiency testing in the industry to become ISO/IEC 17025 accredited. In doing so, we have earned the prestigious credentials for both the Department of Energy's Lighting Facts® listings and DesignLight Consortium approvals. This accreditation enables us to submit multiple LED listings in multiple colors with the benefit of shortened lead times.



MIL STD 461F— Military Standards testing measurements cover both radiated and conducted electromagnetic emissions in addition to maximum allowable amounts of emitted energy based on both frequency range and field strength. Luminaires meeting MIL STD 461F pose the lowest possible likelihood of causing EMI-related issues.



3G—3G testing, which is conducted according to ANSI standard C136.31-2010, simulates the dynamic vibratory stresses that transportation luminaires will experience in the field to determine whether they will be able to withstand such stresses during normal installation in their intended application.



ICT—Indicates white, ambient Kenall luminaires using Indigo-Clean Technology, which kills harmful bacteria, including Staph, such as MRSA.

Warranties

On behalf of our valued customers, Kenall promises to stand behind our luminaires. Our commitment to excellence enables us to offer a variety of product warranties, including the Kenall exclusive Peace of Mind Guarantee, 5-year LED and 10-year limited product warranty. For more detailed, product specific warranty information, please visit our website at www.kenall.com.



Peace of Mind Guarantee

Kenall's High Abuse luminaires are designed and built to take exceptional physical punishment. When installed according to our instructions, Kenall will repair or replace any unit rendered inoperable due to physical abuse for the normal service life of the fixture.



LED 5-Year Warranty

Kenall offers a 5-year limited powe system warranty on LED products. For complete warranty information, please visit us on the web at www.kenall.com.



LED 10-Year Warranty

In addition to the standard product warranty, Kenall warrants LED lamps and internal power regulation components for a period of ten years, unless otherwise noted, from the date of the invoice against defects in materials and workmanship that result in a fixture lumen depreciation of 30% or greater. Lumen depreciation is compared to the published lumen output of the product on the date of manufacture per IESNA LM-79-08 reporting procedures. Normal accumulation of particulates on the optical surfaces shall not be factored into the lumen depreciation.



Kenall Sophistication in Testing

All Kenall luminaires are designed, engineered and manufactured to meet designated performance requirements based on rigorous testing criteria. Whether testing for ingress protection, photometric performance or effective thermal management, Kenall is equipped with a state-of-the-art certified safety laboratory, providing the following testing capabilities:

- Certified for safety testing by Underwriters Laboratory and Intertek Laboratories for Incandescent, Fluorescent and HID Luminaires (UL 1598), LED luminaires (UL 8750) Hazardous Locations (UL 844 and Class I Div II), and Emergency Lighting
- Ingress Protection testing (Dust and Water chambers)
- MIL-STD-461F- Conducted electromagnetic interference (EMI)
- Highly Accelerated Stress Screening (-50°C to 150°C Environmental Chamber)
- 25°C and 40°C thermal testing rooms
- ISO/IEC 17025 accredited photometric laboratory—including a Type C goniophotometer and 2-meter integrating sphere with spectroradiometer—providing credentials for the Department of Energy's Lighting Facts® listings and DesignLights Consortium® approvals.





Integrating Sphere Testing

The integrating sphere is used to measure the total light output of a lamp. It is a high reflectance, highly diffuse spherical chamber, which has been specifically designed to provide an overview of the color properties of the luminaire.

Output of the integrating sphere includes the following measurements:

- Total luminous flux
- Spectral power distribution
- Chromaticity coordinates
- Color Rendering Index (CRI)
- Correlated Color Temperature (CCT)

Goniophotometer Testing

According to ANSI/IESNA RP-16-05, a goniophotometer measures the directional light distribution characteristics of a luminaire. The only goniophotometer recognized and approved under IES standards is a Type C.

The goal of a Type C goniophotometer is to measure the luminous intensity of the luminaire from specific angles. Its output includes the following:

- · Luminous intensity distribution
- Total luminous flux
- Zonal lumen sums
- · Spatial uniformity of color
- An IES file

Once testing is complete and the IES file is received, lighting application software can be used to predict the photometric performance of a luminaire in a particular installation.



Hosedown Ratings & Their Relation To IP Ratings

Limitations of Wet & Hosedown Ratings – UL Standards

UL standards for "wet" type ratings only offer a wet location rating, which simulates an outdoor rain condition. UL standards for a type 4 or NEMA 4 "hosedown" rating uses a 1 inch diameter nozzle on a fire hose delivering 65 gallons of water per minute. Various conditions exist where a fixture requires a rating better than a wet location label but not NEMA 4. These conditions typically exist in washdown applications where hose directed water or cleaning agents will be directed at the fixture.

Benefits of Ingress Protection Ratings – IEC standards

The IP water rating of "5," described in IEC Standard 598, provides an intermediate step between the rain rating and the NEMA 4 rating. It also provides an internationally accepted standard which can be used to evaluate fixtures or any other electrical equipment, and the test can be performed by an independent third party testing agency for verification. Underwriters Laboratories in Northbrook, Illinois investigates products and tests to the IEC standard.

Dust-tight Protection

An additional test criterion that can be applied to fixtures is the ability to exclude solid matter. The IP solid rating of "6" (IP6_) means the fixture will be dust tight. The specified test requires that the fixture be placed in a circulating talc atmosphere for 3 hours. The particle size of the talc is a range of one to 75 microns and the fixture is placed under negative pressure in an attempt to draw the talc into the fixture. No talc should be found inside the fixture after this test

The Importance of Recognized Standards & Independent Testing

Other lighting manufacturers that claim a hosedown rating other than NEMA or IP are not testing to recognized standards and cannot have the tests confirmed or audited by an independent outside testing agency.

Beware of statements such as "Tested to 75psi at 1 inch." No reference is made to the volume of water that is leaving the nozzle and impacting the product. In fact, high nozzle pressures typically have low water volumes because the nozzle is restricting the flow of water causing the pressure in the hose to increase, minimizing the amount of water leaving the nozzle.

Regardless of the hose pressure, any water volume less than 3.3 gal/minute is less severe than the IP_5 test. The most relevant characteristics are the diameter of the nozzle and the flow rate of the water. The following chart shows the test characteristics for various Standards.

What are IEC Standards?

IEC Standards are international standards that many European countries adopt as their national standard. North America has traditionally adopted UL standards as the source for standards. U.S. product manufacturers designed their products to IEC standards initially for sale overseas but are finding them increasingly useful here in North America.

IP Standards Characteri	stics				
Rating	Standard	Nozzle Dia	Flow Rate	Distance	Duration
IP_5	IEC 598	0.2 inches	3.3 gal/min	8-10 ft	15 min
NEMA4	NEMA 250	1.0 inches	65 gal/min	10-12 ft	5 min
Marine	UL 595	1.0 inches	115 gal/min	10 ft	5 min

P64 Rating – Numeral As	signments And Explanations	
Numeral	Description	Excluded from Enclosure
IP65	6 = Dust tight	No ingress of dust
IP64	4 = Protected against splashing water	Water splashed against the enclosure from any direction shall have no harmful effect.

IP <mark>65</mark> Rating – Numeral Ass	signments And Explanations	
Numeral	Description	Excluded from Enclosure
P65	6 = Dust tight	No ingress of dust
IP65	5 = Protected against water jets	Water protected by a nozzle against the enclosure from any direction shall have no harmful effects.



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Kenall Market Segments

Kenall offers luminaires designed according to industry best practices and certified performance standards in each market segment we serve. From high abuse fixtures with an exclusive 'Peace of Mind' Guarantee® against breakage and healthcare fixtures sealed for infection control, to sealed enclosure fixtures that comply with stringent military standards for RFI/EMI and food processing fixtures that carry mission critical NSF, NEMA and IP ratings, our fixtures are designed with your specific needs in mind.



Guaranteed against breakage for the life of the installation.

Main Applications

- Schools & Universities
- Public environments
- Military
- Restrooms & Stairwells





Engineered to the specialized demands of healthcare environments with an attention to cleanability and infection control.

Main Applications

- Patient rooms
- Surgical suites
- MRI
- Labs





One piece, seam welded enclosures for containment, controlled and sealed spaces.

Main Applications

- Pharmaceutical & Research labs
- Cleanrooms
- Corrosive environments
- Hazardous locations





Sealed, NSF listed, high-efficiency lighting for food processing and preparation.

Main Applications

- Food processing & preparation
- Freezers
- Hosedown environments
- Hazardous locations





Kenall Market Segments

Whether you're lighting a healthcare facility and need fixtures that support effective infection control and cleanability, or a tunnel, transit platform or parking facility that calls for features like corrosion-, shock- and vibration-resistance, Kenall can help at every turn. For everything from dependable task lighting that requires environmental integrity and versatility, to emergency exit lighting that meets life safety codes, you can depend on Kenall.



Leader in heavy gauge, welded enclosures to deter even the most determined attempts to destroy, enter or vandalize.

Main Applications

- Cells
- Common areas
- Behavioral health
- Dayrooms





Meeting the specialized demands of transportation related structures for high performance, corrosion resistance and serviceability.

Main Applications

- Tunnel & Underpass
- Platform & Depot
- Parking decks & Surface lots
- Bridges





High-efficiency LED, modular undercabinet lighting for professional spaces.

Main Applications

- Nurses stations
- Labs/MRI suites
- Military/Government
- University dorms & Administration areas





High abuse, extreme environment LED exit and emergency egress lighting.

Main Applications

- Schools & Universities
- Recreational
- Sealed & Correctional environments
- Outdoor/cold weather/extreme conditions







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