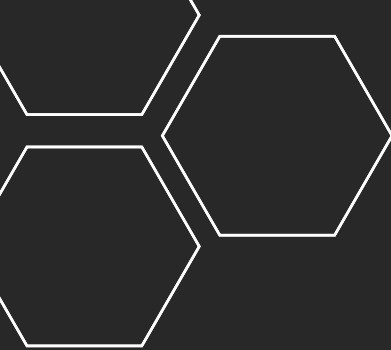




VIPER

For LED Roadway Applications





VIPER LED ROADWAY LIGHTING

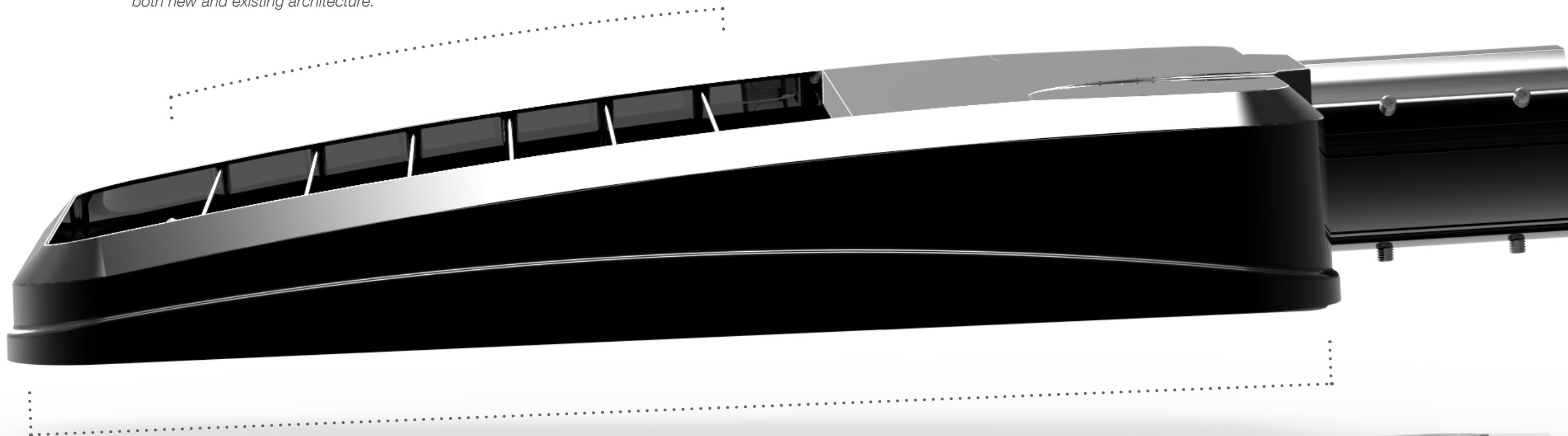
- FEATURES**
- › Contributes to a 'Green' environment thru power savings
 - › Contemporary & Elegant Design
 - › 103 lu/w efficiency
 - › 2 sizes (VP-S and VP-L) offer a TOTAL appearance in all applications
 - › 9 wattages from 50W up thru 280W of LED efficiency
 - › 6 lighting distributions puts light where it is needed, not wasted
 - › LifesShield™ thermal circuit protection insures optimum LED performance
 - › 5 mounting options

I INTEGRATED HEAT DISSIPATION

The Viper LED lighting system from BEACON PRODUCTS offers a low-profile, ultimate solution in pathway, roadway, and parking applications. With its contemporary-streamlined design, it leads the industry with a unique visual appearance that is sure to complement both new and existing architecture.

The Viper's unique design offers an added advantage in thermal management thereby providing even longer life of the high wattage LED configurations while its unique visual appearance is sure to complement the both new and existing architecture.

This Viper is THE cutting edge in LED style, performance and technology.



A AERODYNAMIC BODY

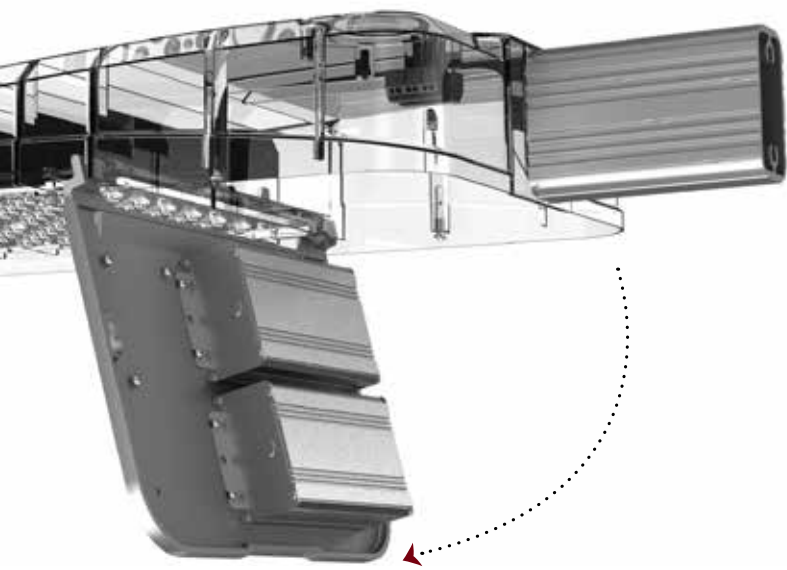
The clean design generates a universal appearance that will compliment today's and yesterday's architectural styles. Aesthetically pleasing style ensures a low EPA of 1ft2 for the large Viper and 0.67ft2 for the small Viper.

Large Viper (VP-L)
shown with 2" slip fitter (SF2) option

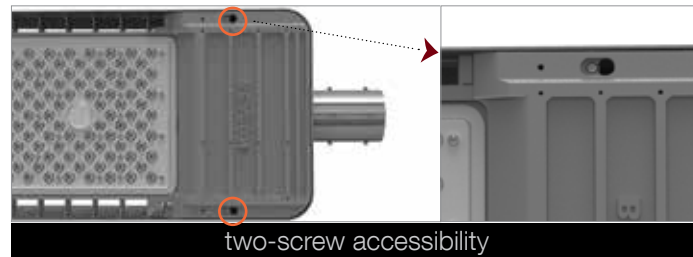


Small Viper (VP-S)
shown with 2" slip fitter (SF2) option



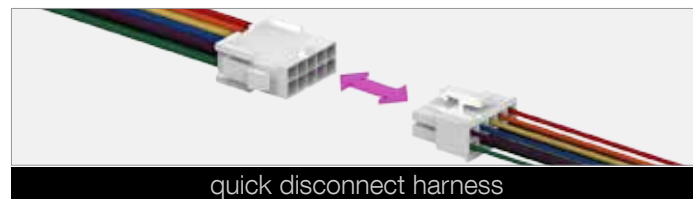


In addition to its cutting edge design, the Viper provides ease of installation and maintenance.



HINGED ACCESS

The swing-down, hinged door (with two screws) provides access to the drivers, photocell and terminal block. It allows for easy installation and hassle-free maintenance and component hardware replacement.

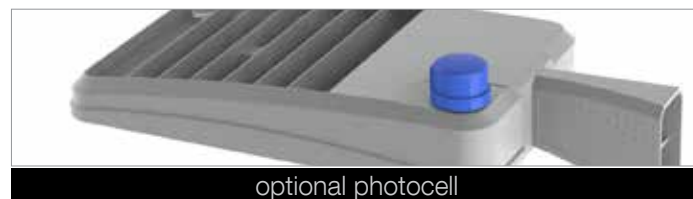


QUICK DISCONNECT WIRING HARNESSES

The swing-down, hinged door provides access to the drivers, photocell and terminal block. It allows for easy installation and hassle-free maintenance and component hardware replacement. It can also be removed and completely detached if necessary.

REMOVEABLE DOOR

The maintenance door is designed to not only swing down to allow access, but it is also capable of being completely removed allowing for uninhibited access to the mounted components and wiring.

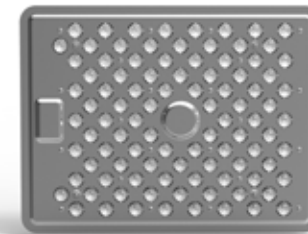


PHOTOCELL (optional)

The optional photocell provides the ability for dusk-to-dawn control and communication when 'Smart' photocells are used.

LED BEZEL

The 'Heart' of Beacon Products leadership in utilizing the latest in LED technology is incorporated in the unique LED Bezel consisting of an LED engine, LED lamps, optics, gasket and stainless steel bezel and ON-Board LifeShield™ electronics.



With Beacon's specially designed optical-grade acrylic lenses, each bezel produces a choice of 6 different, specific light distribution patterns which eliminates light trespass, reduces glare and maintains uniformity regardless of the mounting height.

This modular component is featured in many of the Beacon Products luminaires, including the Genesis, Genesis-2X, Urban, Endura, Aurora, Traverse, and Cruiser.

MOUNTING OPTIONS

Large Viper (VP-L) w/ Rectangular Arm (RA)



Small Viper (VP-S) w/ Rectangular Arm (RA)



Large Viper (VP-L) w/ 2" Slip Fitter (SF2)



Small Viper (VP-S) w/ 2" Slip Fitter (SF2)



Large Viper (VP-L) w/ Upswept Arm (RA)



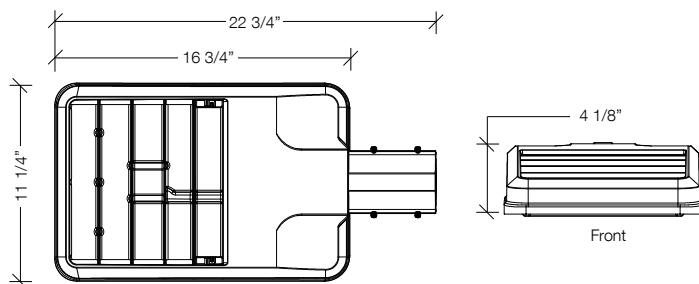
Small Viper (VP-S) w/ Upswept Arm (USA)



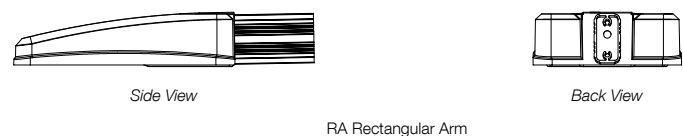
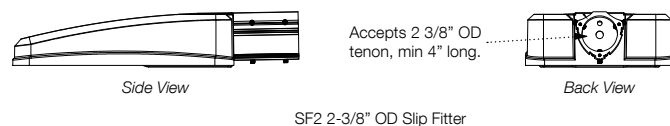
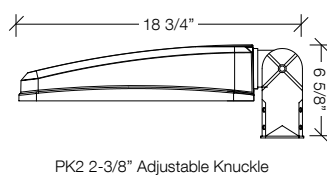
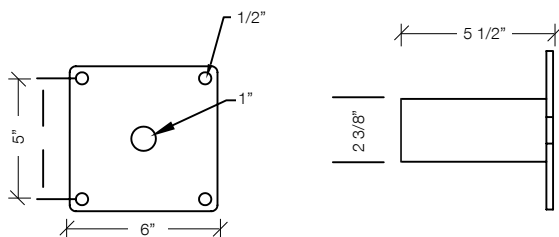
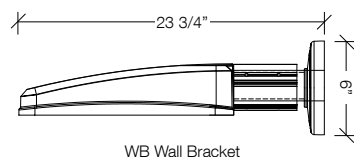
Type: _____
Project Name: _____
Notes: _____

Sample	VP-S	30NB-90	5K	T5R	UNV	PCR-TL	SF2	BBT
Ordering	A	B	C	D	E	F	G	H

DETAILS



MOUNTING OPTIONS



A. MODEL

VP-S Viper - Small

B. ENGINE-WATTS

22NB-50 50 Watts - LED array
22NB-70 70 Watts - LED array
30NB-70 70 Watts - LED array
30NB-90 90 Watts - LED array

C. CCT - COLOR TEMP

5K 5000K (std.)
4K 4000K
3K 3000K

D. OPTICS

T2 type II
T3 type III
T4 type IV
T5R type V, rectangular
T5QM type V, square medium
T5W type V, round wide

E. VOLTAGE

UNV 120-277V
347V 347V
480V 480V

F. ELECTRICAL OPTIONS

PCR-TL photocell, twist-lock
PCR-SC photocell, shorting cap
2PF dual power feed ^{1,2}

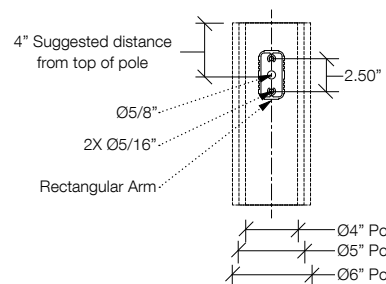
G. MOUNTING OPTIONS

RA rectangular arm
SF2 2 3/8" OD slip-fitter
PK2 2 3/8" adjustable knuckle
WB wall bracket

H. COLOR

BBT basic black textured
BMT black matte textured
WHT white textured
MBT metallic bronze textured
BZT bronze textured
DBT dark bronze textured
GYS gray smooth
DPS dark platinum smooth
GNT green textured
MST metallic silver textured
MTT metallic titanium textured
OWI old world iron
RAL _____

DRILL PATTERN



¹ not available with 30NB-90

² not available @ 347V or 480V input

General: The Beacon Viper luminaire is available in two sizes with a wide choice of different LED Wattage configurations and optical distributions designed to replace HID lighting up to 1000W MH or HPS and with 5 different mounting options for application in a wide variety of new and existing installations. Luminaires are suitable for wet locations.

Bezel Optic System: Each Viper luminaire is supplied with an one piece optical cartridge system consisting of an LED engine, LED lamps, optics, gasket and stainless steel bezel. The cartridge is held together with internal brass standoffs soldered to the board so that it can be field replaced as a one piece optical system. Two-piece silicone and micro-cellular polyurethane foam gasket ensures a weather-proof seal around each individual LED.

The optical cartridge is secured to the die cast housing with fasteners. The optics are held in place without the use of adhesives. The cartridge assembly is available in various lighting distributions using TIR designed acrylic optical lenses over each LED.

Lifesield™ Circuit: Thermal circuit shall protect the luminaire from excessive temperature by interfacing with the 0-10V dimmable drivers to reduce drive current as necessary. The factory-preset temperature limits shall be designed to ensure maximum hours of operation to assure L70 rated lumen maintenance. The device shall activate at a specific, factory-preset temperature, and progressively reduce power over a finite temperature range.

A luminaire equipped with the device may be reliably operated in any ambient temperature up to 55°C (131°F). The thermal circuit will allow higher maximum Wattages than would be permissible on an unregulated luminaire (if some variation in light output is permissible), without risk of premature LED failure or lumen depreciation. Operation shall be smooth and undetectable to the eye. Thermal circuit shall directly measure the temperature at the LED solder point. Thermal circuit shall consist of surface mounted components mounted on the LED engine (printed circuit board). For maximum simplicity and reliability, the device shall have no dedicated enclosure, circuit board, wiring harness, gaskets, or hardware. Device shall have no moving parts, and shall operate entirely at low voltage. The device shall be located in an area of the luminaire that is protected from the elements. Thermal circuit shall be designed to "fail on", allowing the luminaire to revert to full power in the event of an interruption of its power supply, or faulty wiring connection to the drivers.

Device shall be able to co-exist with other 0-10V control devices (occupancy sensors, external dimmers, etc.). The device will effectively control the solder point temperature as needed; otherwise it will allow the other control device(s) to function unimpeded.

Printed Circuit Board (PCB): Aluminum thermal clad board with 0.062" thick aluminum base layer, thermally conductive dielectric layer, 0.0014" thick copper circuit layer circuit layer designed with copper pours to minimize thermal impedance across dielectric. Board will be mounted to the heat sink using minimum 12 #4-40 screws to ensure contact with thermal pad and heat sink. Use of thermal grease will not be allowed.

Housing and LED Thermal Management: The Viper' monolithic housing design creates over 4.5 square feet (small Viper) or 7.7 square feet (large Viper) of heat-sinking surface area. Vertical fins, combined with flow-thru openings prevent sediment and moisture buildup on critical heat sinking surfaces without the need for grates, screens or other debris control tactics. The Viper housing, electrical compartment and fitter are made from die cast aluminum that is pre-treated and powder-coated to meet the most rugged industry standards. The finish is corrosion resistant to meet ASTM-B-117, resists cracking or loss of adhesion per ASTM D522, resists surface impacts of up to 160 inch-pound. All external hardware is corrosion resistant. The housing serves as a heat-sink for the LED bezel with a separate compartment for the drivers.

Electrical Assembly: The fixture electrical compartment shall contain all LED driver components and shall be provided with a push-button terminal block for AC power connections. The housing is designed for an optional twist lock photo control receptacle.

Accessibility: Although the Viper luminaire is designed to operate for many years without maintenance, accessibility is a key component in its design. The Drivers are mounted on a removable door that is secured with keyslotted screws and hinges down for convenient access. The drivers are field replaceable using quick disconnects.

Drivers: Luminaires are equipped with an LED driver that accepts 100V through 277V, 50 Hz to 60 Hz (UNV), or a driver that accepts 347V or 480V input. Power factor is .92 at full load. All electrical components are rated at 50,000 hours at full load and 25°C ambient conditions per MIL- 217F Notice 2. Dimming drivers are standard, with connections for external dimming equipment available upon request. Component-to-component wiring within the luminaire may carry no more than 80% of rated load and is listed by UL for use at 600VAC at 50°C or higher. Plug disconnects are listed by UL for use at 600 VAC, 13A or higher. 13A rating applies to primary (AC) side only.

Surge Protector: The on-board surge protector shall be a UL recognized component for the United States and Canada and have a surge current rating of 20,000 Amps using the industry standard 8/20 pSec wave. The LSP shall have a clamping voltage of 825V and surge rating of 540J. The case shall be a high-temperature, flame resistant plastic enclosure.

Fasteners: All fasteners shall be stainless steel. When tamper resistant fasteners are required, spanner HD (snake eye) style shall be provided (special tool required, consult factory).

Color Rendering Index (CRI): Luminaire shall have a minimum CRI of 67 at 5000K.

Operating Environment: Shall be able to operate normally in ambient temperatures from -40°C to 40°C

Finish: Finish shall be a Beacote V polyester powder-coat electro-statically applied and thermocured. Beacote V finish shall consist of a five stage iron phosphate chemical pretreatment regimen with a polymer primer sealer, oven dry off, and top coated with a thermoset super TGIC polyester powder coat finish. The finish shall meet the AAMA 605.2 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance and resists cracking or loss of adhesion per ASTM D522 and resists surface impacts of up to 160 inch-pound.

Agency Certification: The luminaire shall bear a CSA label and be marked suitable for wet locations.

Warranty: Beacon luminaires feature a 5 year limited warranty. Beacon LED luminaires with LED arrays feature a 5 year limited warranty covering the LED arrays. LED drivers are covered by a 5 year limited warranty. PIR sensors carry a 5 year limited warranty from the sensor manufacturer. See Warranty Information on www.beaconproducts.com complete details and exclusions.

Power/Lumens & Distributions

Engine	Wattage	Delivered Lumens (varies by optic)	Delivered LPW	TM21 Calculated % Lumen Maint. at 100,000 hrs
22NB	50	4700-5020	93-103	96.19%
22NB	70	5780-6200	82-103	85.79%
30NB	70	6408-6850	91-103	95.02%
30NB	90	7700-8260	85-97	85.79%

TM21 is the framework for taking LM-80 data and making useful LED lifetime projections. Reported and Calculated Lifetimes shown are based on hours at the time of this printing. For current Reported and Calculated hours please contact factory or Beacon's web-site.

CCT (COLOR TEMP) Lumen Output Multipliers	CRI (Color Rendering)
5000K = 1.0	min 67 CRI
4000K = .92	min 70 CRI
3000K = .75	min 80 CRI

Due to our continued efforts to improve our products, product specifications are subject to change without notice.

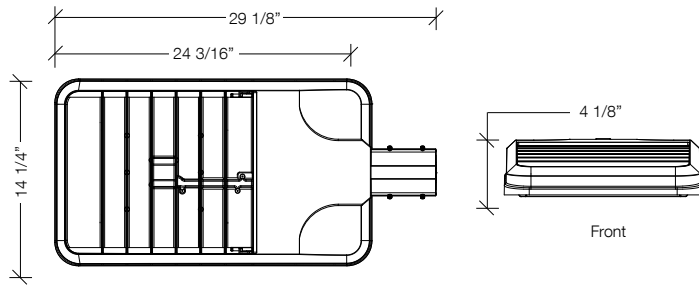
Type: _____
Project Name: _____
Notes: _____

VIPER - LARGE (LED)
Large Viper Luminaire
Max Weight: 25.0 lbs
Max EPA: 1 sq ft

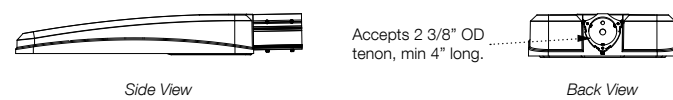
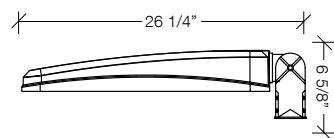
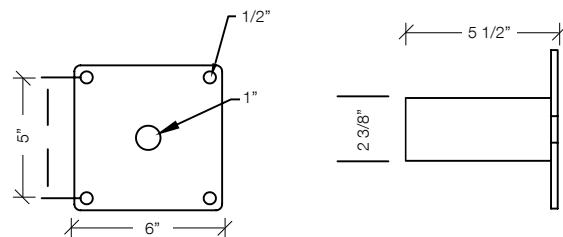
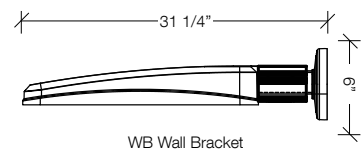
VIPER - LARGE (LED)
Large Viper Luminaire
Max Weight: 25.0 lbs
Max EPA: 1 sq ft

Sample	VP-L	96NB-280	5K	T5R	UNV	PCR-TL	SF2	BBT
Ordering	A	B	C	D	E	F	G	H

DETAILS



MOUNTING OPTIONS



A. MODEL

VP-L Viper - Large

B. ENGINE-WATTS

64NB-135	135 Watts - LED array
64NB-190	190 Watts - LED array
80NB-180	180 Watts - LED array
80NB-235	235 Watts - LED array
96NB-220	220 Watts - LED array
96NB-280	280 Watts - LED array

C. CCT - COLOR TEMP

5K	5000K (std.)
4K	4000K
3K	3000K

D. OPTICS

T2	type II
T3	type III
T4	type IV
T5R	type V, rectangular
T5QM	type V, square medium
T5W	type V, round wide

E. VOLTAGE

UNV	120-277V
347V	347V
480V	480V

F. ELECTRICAL OPTIONS

PCR-TL	photocell, twist-lock
PCR-SC	photocell, shorting cap
2PF	dual power feed ^{1,2}

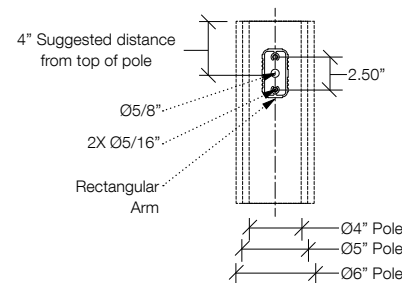
G. MOUNTING OPTIONS

RA	rectangular arm
SF2	2 3/8" OD slip-fitter
PK2	2 3/8" adjustable knuckle
WB	wall bracket

H. COLOR

BBT	basic black textured
BMT	black matte textured
WHT	white textured
MBT	metallic bronze textured
BZT	bronze textured
DBT	dark bronze textured
GYS	gray smooth
DPS	dark platinum smooth
GNT	green textured
MST	metallic silver textured
MTT	metallic titanium textured
OWI	old world iron
RAL	_____

DRILL PATTERN



¹ not available on 64NB-135
² not available @ 347V or 480V input

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The optical cartridge is secured to the die cast housing with fasteners. The optics are held in place without the use of adhesives. The cartridge assembly is available in various lighting distributions using TIR designed acrylic optical lenses over each LED.

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A luminaire equipped with the device may be reliably operated in any ambient temperature up to 55°C (131°F). The thermal circuit will allow higher maximum Wattages than would be permissible on an unregulated luminaire (if some variation in light output is permissible), without risk of premature LED failure or lumen depreciation. Operation shall be smooth and undetectable to the eye. Thermal circuit shall directly measure the temperature at the LED solder point. Thermal circuit shall consist of surface mounted components mounted on the LED engine (printed circuit board). For maximum simplicity and reliability, the device shall have no dedicated enclosure, circuit board, wiring harness, gaskets, or hardware. Device shall have no moving parts, and shall operate entirely at low voltage. The device shall be located in an area of the luminaire that is protected from the elements. Thermal circuit shall be designed to "fail on", allowing the luminaire to revert to full power in the event of an interruption of its power supply, or faulty wiring connection to the drivers.

Device shall be able to co-exist with other 0-10V control devices (occupancy sensors, external dimmers, etc.). The device will effectively control the solder point temperature as needed; otherwise it will allow the other control device(s) to function unimpeded.

Printed Circuit Board (PCB): Aluminum thermal clad board with 0.062" thick aluminum base layer, thermally conductive dielectric layer, 0.0014" thick copper circuit layer circuit layer designed with copper pours to minimize thermal impedance across dielectric. Board will be mounted to the heat sink using minimum 12 #4-40 screws to ensure contact with thermal pad and heat sink. Use of thermal grease will not be allowed.

Housing and LED Thermal Management: The Viper' monolithic housing design creates over 4.5 square feet (small Viper) or 7.7 square feet (large Viper) of heat-sinking surface area. Vertical fins, combined with flow-thru openings prevent sediment and moisture buildup on critical heat sinking surfaces without the need for grates, screens or other debris control tactics. The Viper housing, electrical compartment and fitter are made from die cast aluminum that is pre-treated and powder-coated to meet the most rugged industry standards. The finish is corrosion resistant to meet ASTM B-117, resists cracking or loss of adhesion per ASTM D522, resists surface impacts of up to 160 inch-pound. All external hardware is corrosion resistant. The housing serves as a heat-sink for the LED bezel with a separate compartment for the drivers.

Electrical Assembly: The fixture electrical compartment shall contain all LED driver components and shall be provided with a push-button terminal block for AC power connections. The housing is designed for an optional twist lock photo control receptacle.

Accessibility: Although the Viper luminaire is designed to operate for many years without maintenance, accessibility is a key component in its design. The Drivers are mounted on a removable door that is secured with key-slotted screws and hinges down for convenient access. The drivers are field replaceable using quick disconnects.

Drivers: Luminaires are equipped with an LED driver that accepts 100V through 277V, 50 Hz to 60 Hz (UNIV), or a driver that accepts 347V or 480V input. Power factor is .92 at full load. All electrical components are rated at 50,000 hours at full load and 25°C ambient conditions per MIL- 217F Notice 2. Dimming drivers are standard, with connections for external dimming equipment available upon request. Component-to-component wiring within the luminaire may carry no more than 80% of rated load and is listed by UL for use at 600VAC at 50°C or higher. Plug disconnects are listed by UL for use at 600 VAC, 13A or higher. 13A rating applies to primary (AC) side only.

Surge Protector: The on-board surge protector shall be a UL recognized component for the United States and Canada and have a surge current rating of 20,000 Amps using the industry standard 8/20 pSec wave. The LSP shall have a clamping voltage of 825V and surge rating of 540J. The case shall be a high-temperature, flame resistant plastic enclosure.

Fasteners: All fasteners shall be stainless steel. When tamper resistant fasteners are required, spanner HD (snake eye) style shall be provided (special tool required, consult factory).

Color Rendering Index (CRI): Luminaire shall have a minimum CRI of 67 at 5000K.

Operating Environment: Shall be able to operate normally in ambient temperatures from -40°C to 40°C

Finish: Finish shall be a Beacote V polyester powder-coat electro-statically applied and thermocured. Beacote V finish shall consist of a five stage iron phosphate chemical pre-treatment regimen with a polymer primer sealer, oven dry off, and top coated with a thermoset super TGIC polyester powder coat finish. The finish shall meet the AAMA 605.2 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance and resists cracking or loss of adhesion per ASTM D522 and resists surface impacts of up to 160 inch-pound.

Agency Certification: The luminaire shall bear a CSA label and be marked suitable for wet locations.

Warranty: Beacon luminaires feature a 5 year limited warranty. Beacon LED luminaires with LED arrays feature a 5 year limited warranty covering the LED arrays. LED drivers are covered by a 5 year limited warranty. PIR sensors carry a 5 year limited warranty from the sensor manufacturer. See Warranty Information on www.beaconproducts.com complete details and exclusions.

Power/Lumens & Distributions

Engine	Wattage	Delivered Lumens (varies by optic)	Delivered LPW	TM21 Calculated % Lumen Maint. at 100,000 hrs
64NB	135	12500-13150	93-97	93.84%
64NB	190	16500-17900	86-94	79.77%
80NB	180	17000-18100	93-100	92.73%
80NB	235	20000-21780	86-93	79.97%
96NB	220	20500-21780	93-100	92.73%
96NB	280	24700-26130	88-93	79.77%

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CCT (COLOR TEMP) Lumen Output Multipliers	CRI (Color Rendering)
5000K = 1.0	min 67 CRI
4000K = .92	min 70 CRI
3000K = .75	min 80 CRI

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