



# LIGHTING DESIGN ANALYSIS REPORT

Beal Parkway (SR 189)  
US 98 to Mary Esther Boulevard

**Prepared for:**



# **CORRIDOR LIGHTING REPORT & DESIGN DOCUMENTATION**

**Beal Parkway (SR 189)  
from US 98  
to Mary Esther Boulevard**

**Prepared by:**

**ATKINS**

800 Waterford Way, Suite 700  
Miami, Florida 33126

Engineer of Record: Pedro L. Trevin, P.E.  
P.E. No. 15309

**June 2020**

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## **SECTION 1**

### **EXECUTIVE SUMMARY**

This document was prepared to determine the design and detail process required for the development of a corridor lighting report, to provide roadway lighting along Beal Parkway (SR 189) from US 98 to Mary Esther Boulevard, City of Fort Walton Beach, Okaloosa County Florida.

The luminaire used for the lighting calculations is an APL approved cobra-head LED type luminaire.

There is a three-phase overhead electric power line on the west side of the road up to Linstew Drive on the north side of the road up to Ewin Ct. and on the south side of the road through Mary Esther Blvd. To avoid possible conflicts with the horizontal and vertical clearances required by the National Electrical Safety Code (NESC), the light poles will be placed on the side of the road opposite the overhead power lines, namely, for the lighting calculations, the pole arrangement will be “same-side-of-the road” for the project limits. The new light poles will be placed one foot behind the sidewalk.

The lighting calculations use nominal 40-foot mounting height and 388-watt APL approved LED luminaires having a “flat lens”, a type 3 photometric distribution, and mounted on a 10-ft bracket arm.

The lighting design criteria used for the lighting calculations was based on the requirements of the 2020 FDOT Design Manual Table 231.2.1

## **SECTION 2 PROJECT OVERVIEW**

### **2.1 INTRODUCTION**

Beal Parkway (SR 189) from US 98 to Mary Esther Boulevard, City of Fort Walton Beach, Okaloosa County, Florida is functionally classified by the FDOT as an urban minor arterial road, and is approximately 2.8 miles within the study limits, runs in a south-north direction from US 98 to approximately Yacht Club and turns west and runs in an east-west direction up to Mary Esther Blvd. The study area is primarily within the City of Fort Walton Beach with a small portion of the corridor located in unincorporated Okaloosa County and the Town of Cinco Bayou. See Figure 1-1 for the project study area.

The existing roadway configuration is a five-lane urban section which includes four travel lanes and a center two-way left turn lane. Sidewalks are present along the entire corridor. North of Hollywood Boulevard the sidewalks are separated from the travel lanes by a vegetated buffer while no buffer is present south of Hollywood Boulevard. Curb and gutter and a closed drainage system are present throughout the corridor. From US 98 (SR 30) to Hollywood Boulevard, typical right-of-way (ROW) is 75 feet. From Hollywood Boulevard to Mary Esther Cutoff typical ROW is 100 feet. Figures 2-1 through 2-3 illustrate the existing typical sections within the study area.

Presently, there are roadway cobra-head luminaires, with overhead wiring, mounted on utility power poles that illuminate the road the entire length of the project study. We were not able to determine the existing illumination level.

This report contains the results of a highway lighting design analysis study to determine the approximate light pole spacing needed to illuminate Beal Parkway within the study project limits. This analysis was performed to determine the maximum pole spacing and arrangement for highway lighting as part of the project design.

### **2.2 PURPOSE**

The purpose of a highway lighting design analysis report is to specify the lighting criteria utilized; document the methodology used for the selection of the lighting system; determine the proper spacing of the highway lighting poles needed to provide the minimum illumination required by the design criteria; and provide detailed lighting calculations that substantiate compliance to the required criteria.

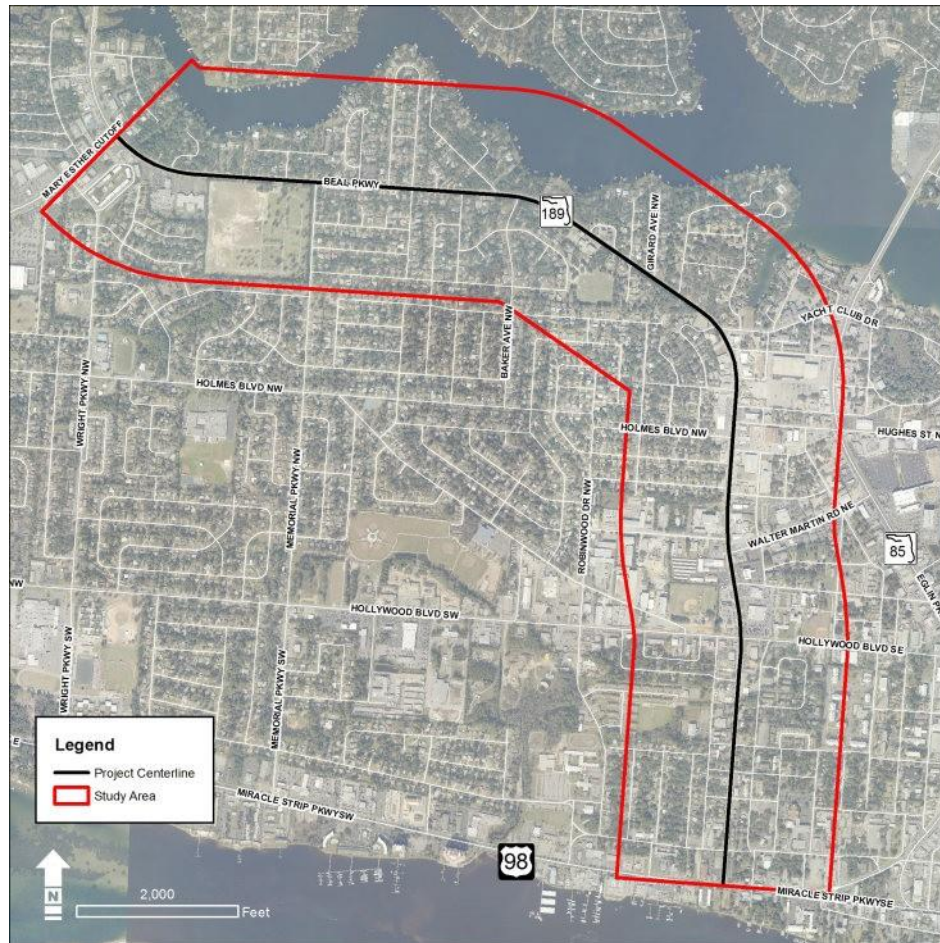
### **2.3 PROCEDURE**

The study calculations comply with the FDOT 2020 FDM Table 231.2.1.

Acuity® Visual Roadway Tool lighting software was used for the preliminary lighting

calculations to determine the number of conventional light poles needed and the maximum spacing of the light poles. This program is based on a point-by-point calculation method; the program is commonly used for roadway lighting calculations; and the programs follow the IES recommendations.

**FIGURE 1  
LOCATION MAP**

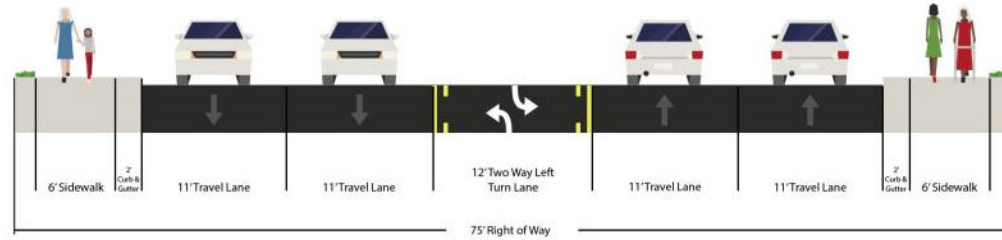


*Area of Interest*

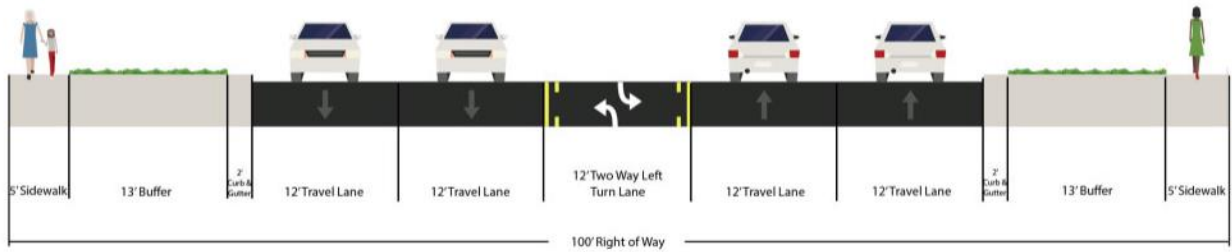


## FIGURE 2.1, 2.2 and 2.3 TYPICAL ROADWAY SECTIONS

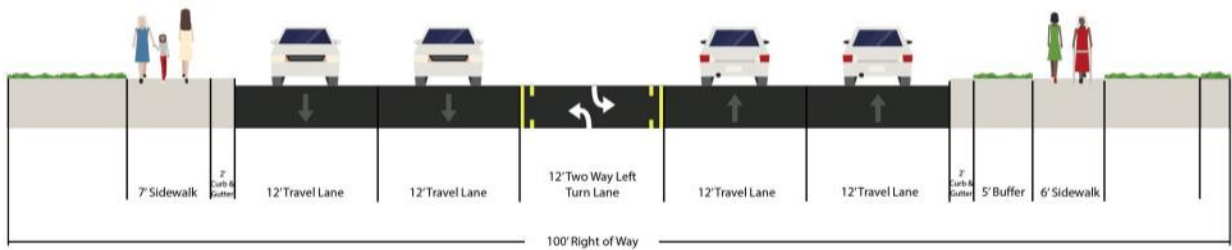
*Figure 2-1 Existing Typical Section - North of US 98 (SR 30)*



*Figure 2-2 Existing Typical Section - Near Holmes Boulevard*



*Figure 2-2 Existing Typical Section - East of Mary Esther Cutoff*



## **SECTION 3**

### **LIGHTING ANALYSIS**

#### **3.1 DESIGN BASIS**

The first step in the analysis was to define the lighting systems preferences (i.e., pole arrangement, mounting height, luminaire photometric type and wattage). The second step was to perform lighting calculations to determine the pole spacing. After the analysis, the results were compiled on a table and conclusions were drawn as to what configurations best met the design criteria.

An APL approved LED luminaire with type III cut-off photometric distribution was used to avoid the glare discomfort to motorist

The sidewalk width is included as part of the roadway width on the lighting calculations.

#### **3.2 DESIGN CRITERIA**

The roadway lighting design criteria for this project is specified in the 2020 FDM Table 231.2.1 that is shown for reference in Table 1.

The lighting design analysis zone for roadways with curb and gutter and sidewalks will include the back of the sidewalks. Photometric calculation zones were created for the entire roadway segment on those areas where there is an overhead power line on one side of the road.



**Table 1**  
**FDOT Conventional Lighting Design Criteria**

Topic #625-000-002  
FDOT Design Manual

January 1, 2020

**Table 231.2.1 Lighting Initial Values**

Roadway Classification	Illumination Level Average Foot Candle		Illumination Uniformity Ratios		Veiling Luminance Ratio
Or Project Type	Horizontal (H.F.C.)	Vertical (V.F.C.)	Avg./Min.	Max./Min.	$L_{V(MAX)}/L_{AVG}$
Conventional Lighting					
Limited Access Facilities	1.5	N/A	4:1 or Less	10:1 or Less	0.3:1 or Less
Major Arterials	1.5				
Other Roadways	1.0				
High Mast Lighting					
All Roadway Classifications	0.8 to 1.0	N/A	3:1 or Less	10:1 or Less	N/A
Signalized Intersection Lighting					
New Reconstruction	3.0	2.3	4:1 or Less	10:1 or Less	N/A
Lighting Retrofit	1.5 Std. 1.0 Min.	1.5 Std. 1.0 Min.			
Midblock Crosswalk Lighting					
Low Ambient Luminance	N/A	2.3	N/A	N/A	N/A
Medium & High Ambient Luminance		3.0			
Sidewalks and Shared Use Paths					
Facilities Separated from the Roadway	2.5	N/A	4:1 or Less	10:1 or Less	N/A
Sign Lighting					
Low Ambient Luminance	15-20	N/A	N/A	6:1	N/A
Medium & High Ambient Luminance	25-35				
Rest Area Lighting					
All Roadways and Parking Areas	1.5	N/A	4:1 or Less	10:1 or Less	N/A

231-Lighting

### 3.3 DESIGN PARAMETERS

#### Lighting Luminaire

An APL-approved LED type luminaire will be used in this study. The LED luminaire will be similar or equal to American Lighting Electric Autoban ATB with a “flat lens” to reduce glare and upward light pollution. The luminaire wattage will be 388-watt LED mounted on a nominal 40-foot mounting height with a 10-foot bracket arm for the mainline and 88-watt on a nominal 22-foot mounting height and a 2-foot arm for the sidewalk only areas.

The pole arrangement will be same side of the road. Based on the 2020 FDM, the poles shall be provided with frangible transformer type breakaway bases and shall be installed with a setback of 1 foot from the back of the sidewalk. Due to the overhead power line installed on one side of the road, the poles will be located on the opposite side of the road only.

### 3.4 LIGHTING CALCULATIONS

Preliminary roadway lighting calculations were performed using of Lithonia® Visual Roadway Tool. The widths and the arrangement of the roads used on the calculations were obtained from the typical roadway sections. The sidewalk width is included as part of the roadway width on the lighting calculations.

The results of the preliminary roadway lighting calculations are summarized in Table 2. Preliminary Roadway lighting calculations are included in Appendix A. The results fall within the required criteria. A summary of the typical pole spacing, and pole setbacks is below:

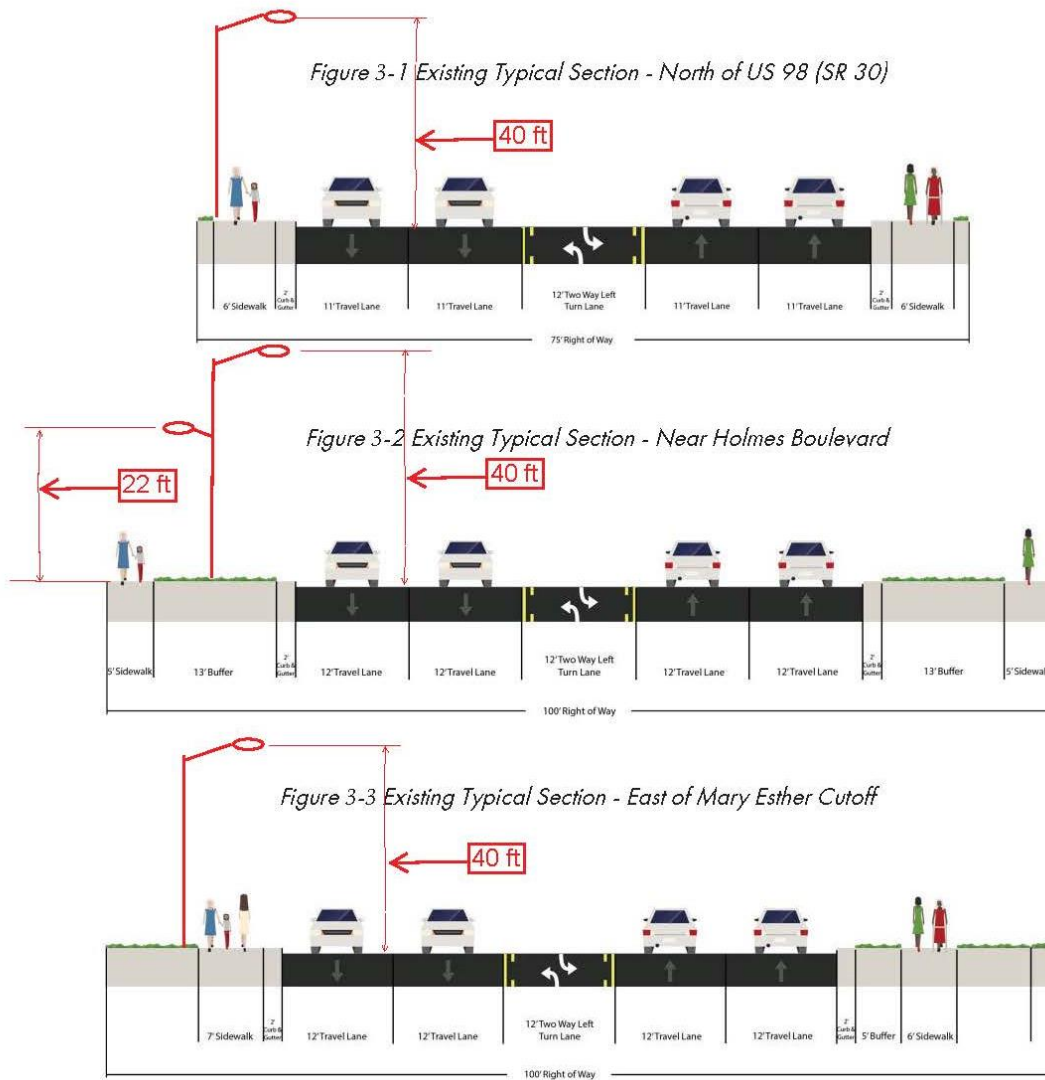
- Typical Section North of US 98.
  - Nominal mounting height: 40 feet
  - Arm length: 10 feet
  - Pole Spacing: 220 feet on center.
  - Pole Setback: 7.5 feet from the outside face of the curb (one foot back of sidewalk).
- Typical Section Near Holmes Blvd.
  - Nominal mounting height: 40 feet
  - Arm length: 10 feet, double arm (2 feet) at 22 feet mounting height to illuminate the left side of the sidewalk
  - Pole Spacing: 205 feet on center.
  - Pole Setback: on grass strip, 7 feet from the outside face of the curb.
- Typical Section Sidewalk only Near Holmes Blvd.
  - Nominal mounting height: 22 feet
  - Arm length: 2 feet
  - Pole Spacing: 104 feet on center.
  - Pole Setback: on grass strip, 7 feet from the outside face of the curb

- Typical Section East of Mary Esther Cutoff.
  - Nominal mounting height: 40 feet
  - Arm length: 10 feet
  - Pole Spacing: 205 feet on center.
  - Pole Setback: 7.5 feet from the outside face of the curb (one foot back of sidewalk).

**Table 2**  
**Preliminary Roadway Lighting Calculations Summary**

MTG HT	SECTION	MAXIMUM SPACING (FT)	OVERALL			VEILING LUMINANCE
			FC	AVG/MIN	MAX/MIN	
40 ft.	North of US 98	220	1.5	2.3	6.8	0.3
40 ft.	Near Holmes Blvd.	205	1.5	2.3	6.6	0.3
22 ft.	Sidewalk only Near Holmes	104	2.4	1.6	2.6	0.3
40 ft.	East of Mary Esther Blvd.	205	1.5	2.3	6.7	0.3

## FIGURE 3.1, 3.2 and 3.3 TYPICAL POLE LOCATIONS



## **SECTION 4**

### **HIGHWAY LIGHTING RECOMMENDATION**

It is recommended that same-side pole arrangement be used to avoid possible conflicts with the overhead power line.

Based on the roadway geometry, photometric analyses, maintenance, cost and safety, the roadway lighting design listed under Table 2 is recommended.

**APPENDIX A**

**PRELIMINARY**

**ROADWAY LIGHTING CALCULATIONS**

## Visual - Roadway Tool

www.Visual-3D.com



### Design Information

Project Name Beal Parkway  
Project Description Lighting Typical section East of Mary Esther Cutoff

User Name Pedro L. Trevin, PE  
Company Name Atkins  
Your Phone 305-514-3389  
Your Email pedro.trevin@atkinsglobal.com

Monday, June 15, 2020

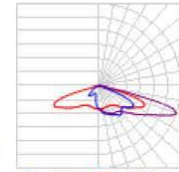
### Roadway

Calculation Method	RP-8-2000 2007 errata	Median		
Road Surface	R3	Width	0 ft	
Road Class	Major	Sidewalk		
Pedestrians	Medium	Width	Left: 0 ft	Right: 0 ft
Roadway Length	1,000 (5 Pole Locations)	Setback	Left: 0 ft	Right: 0 ft
Lane Quantity	Left: 7 Right: 0	Bikeline		
Lane Width	Left: 11.7 ft Right: 0 ft	Width	Left: 0 ft	Right: 0 ft
		Setback	Left: 0 ft	Right: 0 ft

### Luminaire Information

Left Side - American Electric Lighting: ATB2 80BLEDE 15  
XXXXX R3 4K/5K

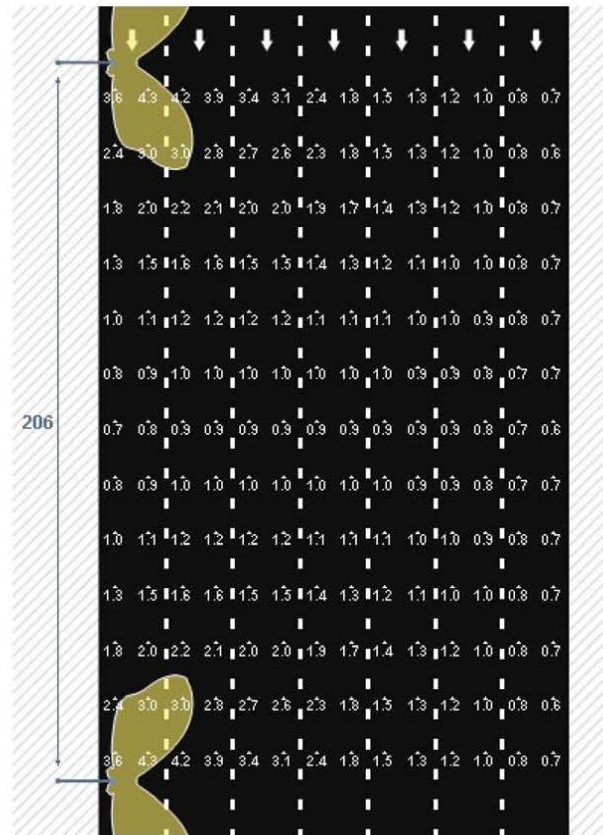
Cycle Spacing:	206.01 ft	Configuration:	Single
Setback:	7 ft	Arm Length:	10 ft
Orientation:	90	Tilt:	0
Mounting Height:	40 ft	Lamp Lumens:	41858
Staggered:	False	Wattage:	388
Light Loss Factor:	0.85	Lamp Count:	1



■ - 0° H ■ - 90° H  
■ - Max Cd: 57.5° H

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**AcuityBrands.**



Illuminance

## Calculation Results

Luminance	Left	Right		Illuminance	Left	Right	Sidewalk	Left	Right		
Average:	1	--	cd/m <sup>2</sup>	Average:	1.5	--	fc	Average:	--	--	fc
Max:	3	--	cd/m <sup>2</sup>	Max:	4.3	--	fc	Min	--	--	fc
Min	0.3	--	cd/m <sup>2</sup>	Min	0.6	--	fc	Ave/Min:	--	--	
Ave/Min:	3.6	--		Ave/Min:	2.3	--		Ev Min:	--	--	fc
Max/Min:	10.6	--		Max/Min:	6.7	--		<b>Bikelane</b>			
Lv Ratio:	0.3	--						Average:	--	--	fc
STV:	3.8	--						Min	--	--	fc
								Ave/Min:	--	--	
								Ev Min:	--	--	fc



## Visual - Roadway Tool

www.Visual-3D.com



### Design Information

Project Name Beal Parkway  
Project Description Lighting Near Holmes Blvd

Monday, June 15, 2020  
User Name Pedro L. Trevin, PE  
Company Name Atkins  
Your Phone 305-514-3389  
Your Email pedro.trevin@atkinsglobal.com

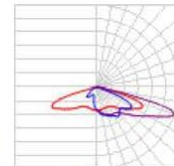
### Roadway

Calculation Method	RP-8-2000 2007 errata		Median		
Road Surface	R3		Width	0 ft	
Road Class	Major		Sidewalk		
Pedestrians	Medium		Width	Left: 0 ft	Right: 0 ft
Roadway Length	1,000 (5 Pole Locations)		Setback	Left: 0 ft	Right: 0 ft
Lane Quantity	Left: 7	Right: 0	Bikeline		
Lane Width	Left: 11.7 ft	Right: 0 ft	Width	Left: 0 ft	Right: 0 ft
			Setback	Left: 0 ft	Right: 0 ft

### Luminaire Information

#### Left Side - American Electric Lighting: ATB2 80BLEDE 15 XXXXX R3 4K/5K

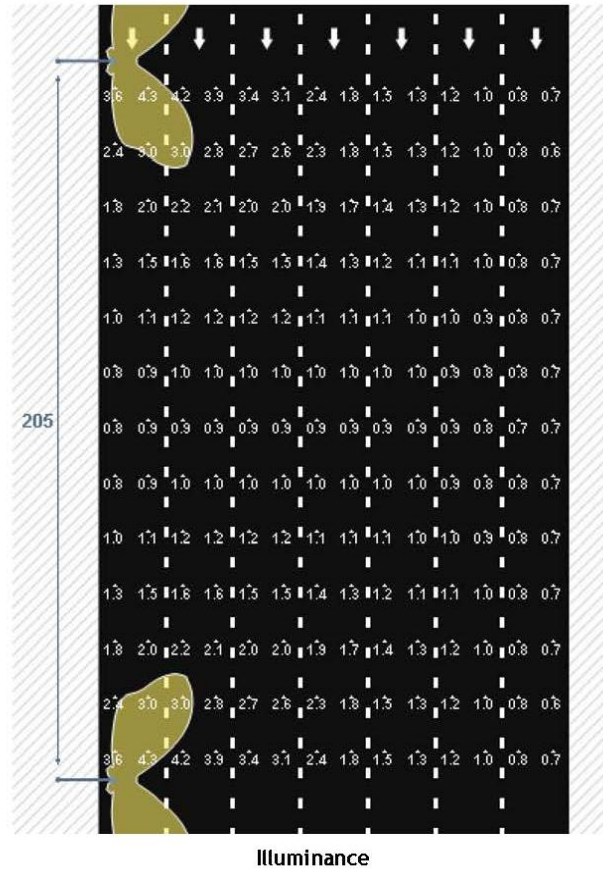
Cycle Spacing:	205 ft	Configuration:	Single
Setback:	7 ft	Arm Length:	10 ft
Orientation:	90	Tilt:	0
Mounting Height:	40 ft	Lamp Lumens:	41858
Staggered:	False	Wattage:	388
Light Loss Factor:	0.85	Lamp Count:	1



■ - 0° H ■ - 90° H  
■ - Max Cd: 57.5° H

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## Calculation Results

Luminance	Left	Right	Illuminance	Left	Right	Sidewalk	Left	Right
Average:	1	--	cd/m <sup>2</sup>	Average:	1.5	fc	Average:	--
Max:	3	--	cd/m <sup>2</sup>	Max:	4.3	fc	Min	--
Min	0.3	--	cd/m <sup>2</sup>	Min	0.6	fc	Ave/Min:	--
Ave/Min:	3.6	--		Ave/Min:	2.3		Ev Min:	--
Max/Min:	10.6	--		Max/Min:	6.6		<b>Bikelane</b>	
Lv Ratio:	0.3	--					Average:	--
STV:	3.8	--					Min	--
							Ave/Min:	--
							Ev Min:	--

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## Visual - Roadway Tool

www.Visual-3D.com



### Design Information

Project Name Beal Parkway  
Project Description Lighting North of 98

Monday, June 15, 2020  
User Name Pedro L. Trevin, PE  
Company Name Atkins  
Your Phone 305-514-3389  
Your Email pedro.trevin@atkinsglobal.com

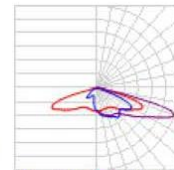
### Roadway

Calculation Method	RP-8-2000 2007 errata		Median		
Road Surface	R3		Width	0 ft	
Road Class	Major		Sidewalk		
Pedestrians	Medium		Width	Left: 0 ft	Right: 0 ft
Roadway Length	1,000 (5 Pole Locations)		Setback	Left: 0 ft	Right: 0 ft
Lane Quantity	Left: 6	Right: 0	Bikeline		
Lane Width	Left: 12 ft	Right: 0 ft	Width	Left: 0 ft	Right: 0 ft
			Setback	Left: 0 ft	Right: 0 ft

### Luminaire Information

#### Left Side - American Electric Lighting: ATB2 80BLEDE 15 XXXXX R3 4K/5K

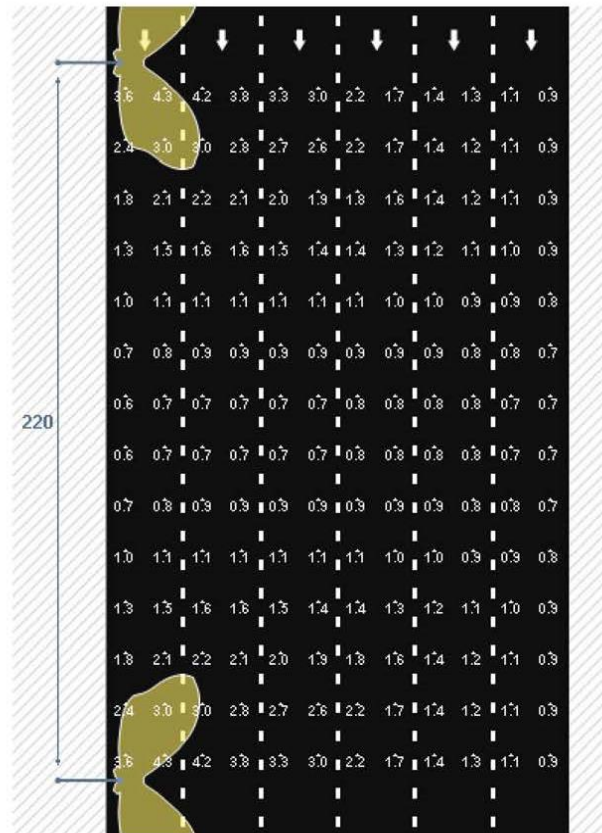
Cycle Spacing:	219.97 ft	Configuration:	Single
Setback:	7.5 ft	Arm Length:	10 ft
Orientation:	90	Tilt:	0
Mounting Height:	40 ft	Lamp Lumens:	41858
Staggered:	False	Wattage:	388
Light Loss Factor:	0.85	Lamp Count:	1



■ - 0° H ■ - 90° H  
■ - Max Cd: 57.5° H

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**AcuityBrands.**



Illuminance

## Calculation Results

Luminance	Left	Right		Illuminance	Left	Right		Sidewalk	Left	Right	
Average:	1	--	cd /m <sup>2</sup>	Average:	1.5	--	fc	Average:	--	--	fc
Max:	2.9	--	cd /m <sup>2</sup>	Max:	4.3	--	fc	Min	--	--	fc
Min	0.4	--	cd /m <sup>2</sup>	Min	0.6	--	fc	Ave/Min:	--	--	
Ave/Min:	2.8	--		Ave/Min:	2.3	--		Ev Min:	--	--	fc
Max/Min:	8.1	--		Max/Min:	6.8	--		<b>Bikelane</b>			
Lv Ratio:	0.3	--						Average:	--	--	fc
STV:	4.2	--						Min	--	--	fc
								Ave/Min:	--	--	
								Ev Min:	--	--	fc

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## Visual - Roadway Tool

www.Visual-3D.com 

### Design Information

Project Name Beal Parkway  
Project Description Lighting Typical Section Sidewalk Only Near Holmes Blvd

User Name Pedro L. Trevin, PE  
Company Name Atkins  
Your Phone 305-514-3389  
Your Email pedro.trevin@atkinglobal.com

Monday, June 15, 2020

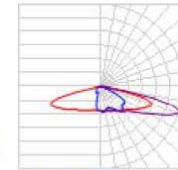
### Roadway

Calculation Method	RP-8-2000 2007 errata	Median		
Road Surface	R3	Width	0 ft	
Road Class	Major	Sidewalk		
Pedestrians	Medium	Width	Left: 0 ft	Right: 0 ft
Roadway Length	1,000 (10 Pole Locations)	Setback	Left: 0 ft	Right: 0 ft
Lane Quantity	Left: 0 Right: 1	Bikeline		
Lane Width	Left: 0 ft Right: 5 ft	Width	Left: 0 ft	Right: 0 ft
		Setback	Left: 0 ft	Right: 0 ft

### Luminaire Information

#### Right Side - American Electric Lighting: ATB2 40BLEDE70 XXXXX R2 4K/5K

Cycle Spacing:	104 ft	Configuration:	Single
Setback:	6.5 ft	Arm Length:	2 ft
Orientation:	270	Tilt:	0
Mounting Height:	22 ft	Lamp Lumens:	11607
Staggered:	False	Wattage:	88
Light Loss Factor:	0.85	Lamp Count:	1



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Illuminance

## Calculation Results

Luminance	Left	Right		Illuminance	Left	Right		Sidewalk	Left	Right
Average:	--	2.4	cd/m <sup>2</sup>	Average:	--	2.4	fc	Average:	--	--
Max:	--	3.4	cd/m <sup>2</sup>	Max:	--	3.9	fc	Min	--	--
Min	--	1.7	cd/m <sup>2</sup>	Min	--	1.5	fc	Ave/Min:	--	--
Ave/Min:	--	1.5		Ave/Min:	--	1.6		Ev Min:	--	--
Max/Min:	--	2		Max/Min:	--	2.6		<b>Bikelane</b>		
Lv Ratio:	--	0.3						Average:	--	--
STV:	--	2.4						Min	--	--
								Ave/Min:	--	--
								Ev Min:	--	--

## **APPENDIX B**

### **LUMINAIRE CATALOG CUTS**





Consistent with LEED® goals  
& Green Globes™ criteria  
for light pollution reduction

## Autobahn Series ATB2 Roadway Lighting

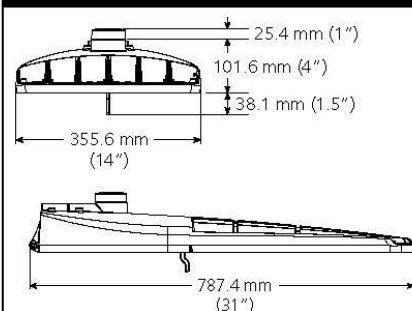
### PRODUCT OVERVIEW



#### Applications:

Roadways  
Off ramps  
Residential streets  
Parking lots

#### DIMENSIONS



Effective Projected Area (EPA)  
The EPA for the ATB2 is 0.78 sq. ft.,  
Approx. Wt. = 21 lbs. (9.53 kg)

#### STANDARDS

DesignLights Consortium® (DLC) qualified product.  
Not all versions of this product may be DLC qualified.  
Please check the DLC Qualified Products List at  
[www.designlights.org/QPL](http://www.designlights.org/QPL) to confirm which versions  
are qualified.

Color temperatures of  $\leq 3000\text{K}$  must be specified for  
International Dark-Sky Association certification.

Rated for  $-40^{\circ}\text{C}$  to  $40^{\circ}\text{C}$  ambient.

CSA Certified to U.S. and Canadian standards

Complies with ANSI: C136.2, C136.10, C136.14, C136.31,  
C136.15, C136.37

Note: Specifications subject to change without notice.  
Autobahn Series – AEL\_0109\_ATB2

#### Features:

##### OPTICAL

**Same Light:** Performance is comparable to 250-400W HPS roadway  
luminaires.

**White Light:** Correlated color temperature - 4000K, 70 CRI minimum, 3000K,  
70CRI minimum or optional 5000K, 70 CRI minimum.

Unique IP66 rated LED light engines provided 0% uplight and restrict  
backlight to within sidewalk depth, providing optimal application coverage  
and optimal pole spacing.

Available in Type II, III, IV, & V roadway distributions.

##### ELECTRICAL

**Expected Life:** LED light engines are rated  $>100,000$  hours at  $25^{\circ}\text{C}$ , L70.  
Electronic driver has an expected life of 100,000 hours at a  $25^{\circ}\text{C}$  ambient.

**Lower Energy:** Saves an average of 40-60% over comparable HPS  
platforms.

**Robust Surge Protection:** Three different surge protection options provide  
a minimum of ANSI C136.2 10kV/5kA protection. 20kV/10kA protection is  
also available.

##### MECHANICAL

**Easy to Maintain:** Includes standard AEL lineman-friendly features such  
as tool-less entry, 3 station terminal block and quick disconnects. Bubble  
level located inside the electrical compartment for easy leveling at  
installation.

Rugged die-cast aluminum housing is polyester powder-coated for  
durability and corrosion resistance. Rigorous five-stage pre-treating and  
painting process yields a finish that achieves a scribe creepage rating of  
7 (per ASTM D1654) after over 5000 hours exposure to salt fog chamber  
(operated per ASTM B117).

Four-bolt mast arm mount is adjustable for arms from 1-1/4" to 2" (1-5/8" to  
2-3/8" O.D.) diameter and provides a 3G vibration rating per ANSI C136.

Wildlife shield is cast into the housing (not a separate piece).

##### CONTROLS

NEMA 3 Pin photocontrol receptacle is standard, with the Acuity designed  
ANSI 7 Pin receptacle optionally available.

Premium solid state locking sale photocontrol - PCSS (10 year rated life).

Extreme long life sold state locking style photocontrol - PCLL (20 year  
rated life).

Mult-level dimming available to provide scheduled dimming as specified  
by the customer.

Optional onboard Adjustable Output module allows the light output and  
input wattage to be modified to meet site specific requirements, and  
can also allow a single fixture to be flexibly applied in many different  
applications.



# Autobahn Series ATB2

## Roadway Lighting

### ORDERING INFORMATION

Example: ATB2 40LEDE70 MVOLT R2

Series	Performance Packages		Voltage	Optics
ATB2 Autobahn LED Roadway	<b>40BLEDE70</b>	40B Chips, 700mA Driver	<b>MVOLT</b> Multi-volt, 120-277V	<b>R2</b> Roadway Type II
	<b>40BLEDE10</b>	40B Chips, 1050mA Driver	<b>347</b> 347V	<b>R3</b> Roadway Type III
	<b>40BLEDE13</b>	40B Chips, 1300mA Driver	<b>480</b> 480V	<b>R4</b> Roadway Type IV
	<b>40BLEDE15</b>	40B Chips, 1500mA Driver		<b>R5</b> Roadway Type V
	<b>60BLEDE70</b>	60B Chips, 700mA Driver		
	<b>60BLEDE85</b>	60B Chips, 850mA Driver		
	<b>60BLEDE10</b>	60B Chips, 1050mA Driver		
	<b>60BLEDE13</b>	60B Chips, 1300mA Driver		
	<b>60BLEDE15</b>	60B Chips, 1500mA Driver		
	<b>80BLEDE70</b>	80B Chips, 700mA Driver		
	<b>80BLEDE85</b>	80B Chips, 850mA Driver		
	<b>80BLEDE10</b>	80B Chips, 1050mA Driver		
	<b>80BLEDE12</b>	80B Chips, 1200mA Driver		
	<b>80BLEDE15</b>	80B Chips, 1500mA Driver		

For sidewalk only, left side near Holmes Blvd.

For all of Beal Pkwy.

Options	
<b>Color Temperature (CCT)</b>	<b>Misc. (continued)</b>
<b>(Blank)</b> 4000K CCT, 70 CRI Min.	<b>UMR-XX</b> 8" Horizontal Arm for Round Pole, Painted to match Fixture
<b>3K</b> 3000K CCT, 70 CRI Min.	<b>UMS-XX</b> 8" Horizontal Arm for Square Pole, Painted to match Fixture
<b>5K</b> 5000K CCT, 70 CRI Min.	<b>UMR-GALV</b> 8" Horizontal Arm for Round Pole, Galvanized
<b>Paint</b>	<b>UMS-GALV</b> 8" Horizontal Arm for Square Pole, Galvanized
<b>(Blank)</b> Gray (Standard)	<b>Controls</b>
<b>BK</b> Black	<b>(Blank)</b> 3 Pin NEMA Photocontrol Receptacle (Standard)
<b>BZ</b> Bronze	<b>P7<sup>2</sup></b> 7 Pin Photocontrol Receptacle (Dimmable Driver Included)
<b>DDB</b> Dark Bronze	<b>NR</b> No Photocontrol Receptacle
<b>GI</b> Graphite	<b>AO<sup>2</sup></b> Field Adjustable Output
<b>WH</b> White	<b>DM</b> 0V-10V Dimmable Driver (Controls by others)
<b>Surge Protection</b>	<b>ML<sup>3,4</sup></b> Multi-Level Dimming
<b>(Blank)</b> Standard 10kV/5kA SPD	<b>PCSS<sup>1</sup></b> Solid State Lighting
<b>20</b> 20kV/10KA SPD	<b>PCLL</b> Solid State Long Life Photocontrol
<b>MP<sup>1</sup></b> MOV Pack	<b>SH</b> Shorting Cap
<b>IL<sup>1</sup></b> SPD with Indicator Light	<b>Packaging</b>
<b>Terminal Block</b>	<b>(Blank)</b> Single Unit (Standard)
<b>(Blank)</b> Terminal Block (Standard)	<b>JP</b> Job Pack (24/Pallet)
<b>T2</b> Wired to L1 & L2 Positions	
<b>Misc.</b>	
<b>BL</b> External Bubble Level	
<b>HS</b> House-Side Shield	
<b>NL</b> Nema Label	
<b>XL</b> Not CSA Certified	
<b>HK</b> Hingekeepers	

#### Notes

1. Not available in 347 or 480V.
2. Not available with DM or ML options.
3. Not available with AO, DM or P7 options.
4. Dimming schedule and light level information required from the customer in order to configure product. Contact Infrastructure Technical Support to proceed.



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**Warranty** Five-year limited warranty. Complete warranty terms located at: [www.acuitybrands.com/CustomerResources/terms\\_and\\_conditions.aspx](http://www.acuitybrands.com/CustomerResources/terms_and_conditions.aspx)  
Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.

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# Autobahn Series ATB2

## Roadway Lighting

### PERFORMANCE PACKAGE

Performance Package	Drive Current (mA)	Input Watts	Optic	4000K CCT		LLD @ 25°C		
				Delivered Lumens	Efficacy (LPW)	50k Hours	75k Hours	100k Hours
40B	700	88	R2	11607	132	0.97	0.97	0.96
	1000	133		16360	123	0.95	0.93	0.92
	1300	171		19544	114	0.93	0.90	0.87
	1500	198		21384	108	0.93	0.90	0.87
	700	88		11552	131	0.97	0.97	0.96
	1000	133	R3	16249	122	0.95	0.93	0.92
	1300	171		19462	114	0.93	0.90	0.87
	1500	198		21331	108	0.93	0.90	0.87
	700	88		11768	134	0.97	0.97	0.96
	1000	133		16593	125	0.95	0.93	0.92
	1300	171	R4	19877	116	0.93	0.90	0.87
	1500	198		21799	110	0.93	0.90	0.87
	700	88		12388	141	0.97	0.97	0.96
	1000	133		17499	132	0.95	0.93	0.92
	1300	171		20795	122	0.93	0.90	0.87
60B	1500	198		22828	115	0.93	0.90	0.87
	700	130	R2	18193	140	0.97	0.97	0.96
	850	165		21436	130	0.95	0.93	0.92
	1000	204		24940	122	0.95	0.93	0.92
	1300	254		29357	116	0.93	0.90	0.87
	1500	291		32052	110	0.93	0.90	0.87
	700	130	R3	17714	136	0.97	0.97	0.96
	850	165		21351	129	0.95	0.93	0.92
	1000	204		25520	125	0.95	0.93	0.92
	1300	254		29591	118	0.93	0.90	0.87
	1500	291		32709	112	0.93	0.90	0.87
	700	130	R4	17984	138	0.97	0.97	0.96
	850	165		21446	130	0.95	0.93	0.92
	1000	204		25423	125	0.95	0.93	0.92
	1300	254		29898	118	0.93	0.90	0.87
	1500	291		32527	112	0.93	0.90	0.87
	700	130	R5	18561	143	0.97	0.97	0.96
	850	165		22402	136	0.95	0.93	0.92
	1000	204		26128	128	0.95	0.93	0.92
	1300	254		30964	122	0.93	0.90	0.87
	1500	291		33922	117	0.93	0.90	0.87
80B	700	177	R2	23037	130	0.97	0.97	0.96
	850	214		27086	127	0.95	0.93	0.92
	1000	268		31920	119	0.95	0.93	0.92
	1200	330		36826	112	0.93	0.90	0.88
	1500	388		40326	104	0.91	0.87	0.83
	700	177	R3	23934	135	0.97	0.97	0.96
	850	214		26879	126	0.95	0.93	0.92
	1000	268		32416	121	0.95	0.93	0.92
	1200	330		37042	112	0.93	0.90	0.88
	1500	388		41858	108	0.91	0.87	0.83
	700	177	R4	23230	131	0.97	0.97	0.96
	850	214		27263	127	0.95	0.93	0.92
	1000	268		32329	121	0.95	0.93	0.92
	1200	330		37293	113	0.93	0.90	0.88
	1500	388		41611	107	0.91	0.87	0.83
	700	177	R5	24776	140	0.97	0.97	0.96
	850	214		28865	135	0.95	0.93	0.92
	1000	268		34319	128	0.95	0.93	0.92
	1200	330		39552	120	0.93	0.9	0.88
	1500	388		44747	115	0.91	0.87	0.83

**Note:** Information shown above is based on 4000K nominal system data. To calculate 3000K lumen values, multiply the 4000K lumens by .75. Individual fixture performance may vary. Specifications subject to change without notice.

ATB2	15°C	20°C	25°C	30°C	35°C	40°C
LLD Multiplier	1.02	1.01	1	0.99	0.97	0.96

To calculate the LLD for a temperature other than 25°C, multiply the LLD @ 25°C (shown in the performance package table) by the LLD multiplier for the selected temperature.



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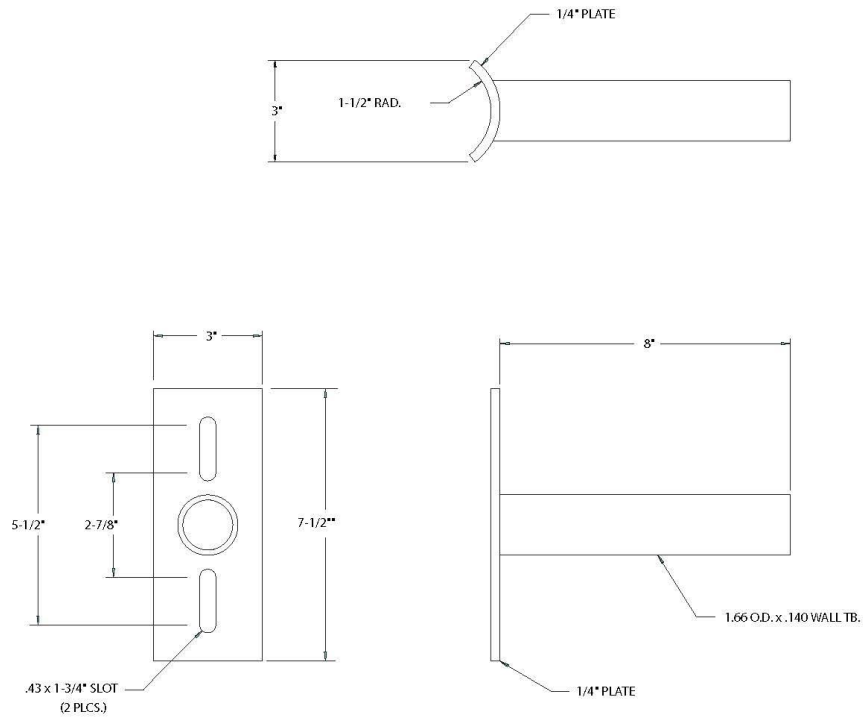
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## Autobahn Series ATB2 Roadway Lighting

### UMR POLE ADAPTOR

RECOMMENDED FOR USE WITH POLES OF 4" DIAMETER OR SMALLER



### UMS POLE ADAPTOR



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