

DIVISION 26 – ELECTRICAL

26 56 00 EXTERIOR LIGHTING

PART 1 - GENERAL

1.01 GENERAL

A. Washington State University is in the process of retrofitting campus to LED exterior lighting. Specify LED exterior lighting fixtures for new construction.

1. LED products shall comply with the following standards:

- i. IESNA LM-79
- ii. IESNA LM-80
- iii. IESNA TM-21
- iv. IEC 62717
- v. IEC 62722-2-1

2. Use of Metal Halide fixtures requires approval from WSU Engineering Services. High Pressure Sodium not allowed.

1.02 DESIGN STANDARDS FOR CAMPUS EXTERIOR LIGHTING

A. Design Data Requirements:

1. In general, exterior lighting cutoff optical systems shall allow no more than 1% uplight. Exceeding this rating requires approval from WSU Engineering Services.
2. Design Consultant shall submit photometric plans for all exterior lighting no later than 100% Design Development documents.
3. Exterior lighting levels shall comply with the most current Illuminating Engineering Society of North America (IESNA) standards.

B. Exterior Lighting Controls:

1. Lighting control shall be ControlKeeper by Cooper Lighting. WSU Building Automation System (BAS) shall not be used to control exterior lighting.
 - i. Specify one of the following after consulting with the Project Manager and WSU Engineering Services:
 - 1) Auto on/off using ControlKeeper astronomical clock control option.
 - 2) Independent astronomical clock control.
 - ii. Auto on/off using photocell may be necessary at some locations. Approval required by WSU Engineering Services.

C. Miscellaneous Exterior Light Fixtures:

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1. Building-mounted lights shall be easily accessible for maintenance and replacement.
2. Light fixtures shall not be encased or embedded in concrete (i.e., stair lights, sign lights, etc.). Use of concrete-enclosed fixtures requires approval from the WSU Project Manager and Engineering Services.
3. Fixtures illuminating signage shall be controlled so as to minimize lighting beyond the sign. Whenever possible, signage shall be illuminated from above using shielded fixtures.
4. Ground-Mounted Light Fixtures
 - i. Ground-mounted light fixtures shall be installed on concrete pedestals, minimum six inches above finish grade. Design and install raceways and fixtures so as to prevent any moisture entering the fixture housing.
 - ii. No ballasts or drivers shall be installed below grade.

PART 2 - PRODUCTS

2.01 CAMPUS STANDARD EXTERIOR LIGHT FIXTURES, BY LOCATION

- A. Reference lighting zones illustrated on E 26 56 00 “WSU Pullman Campus Lighting Fixtures Standard Map.”
- B. “Green Zone” – generally Teaching and Research Core:
 1. Pedestrian Light Fixtures:
 - i. Fixture: Lumec Traditional Globe S-55
 2. Roadways and Parking:
 - i. Standard Fixture: Lumec Renaissance RN 20, single or dual mount
 - ii. Select Locations: Lumec Roadview LED “Cobra Head”
 - 1) Obtain approval from WSU Project Manager before specifying “Cobra Head” fixtures in the “Green Zone.”
 - 2) Reference wattage levels below, based on location and use.
- C. “Blue Zones” – generally Athletics, Housing and Dining areas:
 1. Pedestrian Light Fixtures:
 - i. Gardco 17” Form 10 Round Semi-Spherical (MA)
 2. Roadways and Parking:

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- i. Standard Fixture: Lumec Roadview LED “Cobra Head”
 - 1) Reference wattage levels below, based on location and use.
 - ii. Select Locations: Gardco 17” Form 10 Round Semi-Spherical (MA)
 - 1) Obtain approval from WSU Project Manager before specifying Gardco Form 10 Round along Streets and Parking Areas.
- D. “Yellow Zone” – generally Athletics, CAHNRS, Vet Medicine, and research sites
- 1. Pedestrian Light Fixtures: N/A
 - 2. Roadways and Parking:
 - i. Standard Fixture: Lumec Roadview LED “Cobra Head”
 - 1) Reference wattage levels below, based on location and use.

2.02 PEDESTRIAN LIGHT FIXTURE SPECIFICATIONS

A. Fixture: Lumec Traditional Globe S-55

- 1. Luminaire:
 - i. New: Lumec S55-35W32LED4K-T-GL-LE5-UNIV-SFOK-SCZS311G46SM
 - ii. Retrofit: ECOSWAP-L50-40W42LED4K-RLE5-UNIV**
 - 1) *NOTE 1: WSU Facilities Services and Lumec are working to resolve a heat sink “shadowing” effect in the EcoSwap Retrofit. Consult with WSU Engineering Services before specifying this retrofit.
 - 2) *NOTE 2: The EcoSwap Retrofit comes with options of 65W or 40W Tap. They are factory pre-wired for 65W, and can field adjusted to 40W Tap per manufacturer’s instructions. Designers may specify either 65W or 40W Tap, depending on the project site illumination requirements.
- 2. Pole: APR4F-12-B40-HB-IP-SCZS311G46SM
- 3. Finish:
 - i. Williamsburg Color W-0620 – Market Square Dark Green (PS311G116)
 - ii. Polyester powder coat paint (4 mils/100 microns)

B. Fixture: Gardco 17” Form 10 Round Semi-Spherical (MA)

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1. Luminaire:
 - i. New: MA17L-DIM-1-5*-85LA-NW-UNIV-NP-LF
 - 1) *Note: Distribution may vary by project: 2, 3, 4, and 5 are available.
 - ii. Retrofit: RKL-MA17-5-85LA-NW-UNIV-SPR
2. Finish:
 - i. Natural Aluminum, Association Architectural Class 1 anodized finish.
 - ii. Electrostatically applied, thermally cured TGIC polyester powdercoat finish or liquid polyurethane.

2.03 ROADWAY & PARKING LIGHT FIXTURE SPECIFICATIONS

A. Fixture: Lumec Renaissance RN 20, single or dual mount

1. Consult with WSU Project Manager on use of single or dual-mount fixtures and poles in order to complement existing zone lighting.
2. Luminaire:
 - i. New: Lumec RN20-80W48LED4K-T-GL-LE3R-208-SMA-SCZS311G46SM
 - ii. Pre-2008 Retrofit:
 - 1) Type III: [RETRO-657]-121532-60-RN20-RETROFITKIT-72W32LED4K-T-GL-LE3-208
 - 2) Type V: [RETRO-657]-121532-60-RN20-RETROFITKIT-72W32LED4K-T-GL-LE5-208
 - iii. Post-2008 Retrofit:
 - 1) Type III: LEDGINE-121532-60-RN20-80W48LED4K-R-GL-LE3R-208
 - 2) Type V: LEDGINE-121532-60-RN20-80W48LED4K-R-GL-LE5-208
3. Pole:
 - i. Single-Mount: SSM8V-22.5-[BA-158]-IP-SCZS311G46SM
 - ii. Dual-Mount: SSM8V-22.5-[BA-158]-IP-SCZS311G46SM
4. Bracket:
 - i. Single: [MR-010]-1A-R5 9/16-SCZS311G46SM
 - ii. Dual: [MR-010]-2-R5 9/16-SCZS311G46SM
5. Finish:

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- i. Williamsburg Color W-0620 – Market Square Dark Green (PS311G116)
- ii. Polyester powder coat paint (4 mils/100 microns)

B. Fixture: LED “Cobra Heads”: Specify wattage by location.

1. Streets and Parking Lots (105W): Lumec Roadview RVS-110W64LED4K-R-LE3-UNIV-RC-DMG-SCZS311G46SM
2. Pedestrian Crosswalks (160W): Lumec Roadview RVM-160W96LED4K-R-LE3-UNIV-RC-DMG-SCZS311G46SM
3. Intersections (235W): Lumec Roadview RVM-245W144LED4K-R-LE3-UNIV-RC-DMG-SCZS311G46SM
4. Poles:
 - i. Valmont 26-foot Round Tapered Galvanized Steel Pole with 8-foot
 - ii. Single/Double Arm. #DS30 – 7.0A250 8 S/D
 - iii. Base Cover
 - iv. Maintenance opening
5. Finish:
 - i. Standard: Durable grey polyester powder coat
 - ii. Some projects may require the luminaire to have a special finish:
 - 1) Market Square Dark Green (PS311G116) polyester powder coat

2.04 EXTERIOR LIGHTING POLE BASES:

A. See WSU Standard Detail Drawing: TBD

1. All pole bases not subject to vehicular traffic shall be at least 12 inches from top of base to the highest point of finish grade.
2. All pole bases subject to vehicular traffic shall be at least 36 inches from top of base to the highest point of finish grade.
3. Precast concrete pole bases are preferable and recommended on the WSU campus.
 - i. Pre-Approved Manufacturer: Wilbert Precast

END OF SECTION