

ODOT OFFICE OF ROADWAY ENGINEERING APPROVED LIST
 SUPPLEMENTAL SPECIFICATION 813: LUMINAIRE, SOLID-STATE (LED)
 6/28/2019

SEE ALSO: ODOT SUPPLEMENT 1114 AND ODOT SUPPLEMENTAL SPEC 913

Designer Note A: An "x" in the listed part number (which can vary based on options) is a placeholder; specify the complete part number in the Plans. Verify existing and proposed circuit utilization voltages.

Designer Note B: For projects with Federal funding, create three illumination designs and list three approved models in the Plan Note, with the phrase "or approved equal."

Designer Note C: Design LED lighting to IES RP-8 long-term maintained levels (not initial levels); use the Design Total Light Loss Factor (LLF) listed below for each luminaire

Designer Note D: (July 2017) CCT is now required to be 3000K nominal; CCT placeholders may appear in the listing below. Approved list has also been condensed; it no longer lists individual models but gives Product Family and parameter ranges.

CONVENTIONAL:

MANF.	PRODUCT FAMILY	ODOT-SPECIFIC PART#	POWER, Typ. (W)	#LED MODULES	DRIVE CURRENT (mA)	TYP. LUMEN OUTPUT	DESIGN TOTAL LLF (at 60K Hrs)	B-U-G Rating, Typ. (Type_II Roadway)	NOTES
Cooper/Eaton	Navion	NVN-Ax-0x-E-U-TxR-10K-7030	129-382	varies	1000	11587-34989	0.84	varies	"7030" denotes CCT=3000K
Cooper/Eaton	Verdeon	VERD-A02-E-U-Tx-7030-10K-IP66-4B-AP	92	2	1350	~9100	0.84	B2-U0-G2	Standard Output model.
Cooper/Eaton	Verdeon	VERD-G-Axx-E-U-Tx-7030-10K-IP66-4B-AP	103-143	2	1350	~12000-~15400	0.84	varies	High Output models.
Cooper/Eaton	Verdeon	VERD-M-Axx-E-U-Tx-7030-10K-IP66-4B-AP	152-247	3-4	3240	~15000-~30000	0.84	varies	Very High Output models. G4: use with caution-- any G4 design must meet RP-8 Veiling Luminance criterion
ElectroMatic	AP Series R2R-mount	LE3-Txx-xxx-x-R2R-xx-x-OH	90-270	varies	700	~7500-~23000	0.83	varies	verify CCT=3000K nominal
Leotek	E-Cobra	ECx-xxM2-xx-WW-x-GY-700-xxx-WL	87-260	varies	700	~8000-~26500	0.86	B2-U0-G2 B3-U0-G3	"WW" denotes CCT=3000K
Leotek	Green Cobra	GCM-40H-xx-WW-xx-GY-1A-WL	73-135	40 emitters	530-1000	8700-14000	0.86	B2-U0-G3	ODOT prefers 700mA drive current
Leotek	Green Cobra	GCL2-60G-xx-WW-xx-GY-1A-WL	149-208	60 emitters	750-1000	17500-21700	0.86	B3-U0-G3	ODOT prefers 750mA drive current
Leotek	Green Cobra	GC2-96G-xx-WW-xx-GY-1A-WL	226-310	96 emitters	750-1000	26900-34000	0.86	B3-U0-G3 B3-U0-G4	ODOT prefers 750mA drive current. G4: use with caution-- any G4 design must meet RP-8 Veiling Luminance criterion
AEL	Autobahn ATBM	ATBM-x-xxx-xx-4B-xxx	60-164	3	1000	7000-17400	0.84	B1-U0-G2 B2-U0-G3	All ATBM models have glass optics
AEL	Autobahn ATBL	ATBL-A-xxx-xx-4B-xxx	170-238	-	-	18961-27527	0.85	B3-U0-G4	1. generally suitable for new roadway lighting design 2. G4: use with caution-- any G4 design must meet RP-8 Veiling Luminance criterion
Cree	LEDWay HO	STR-LWY-XXX-HT-2-F-US-XX-SV-A-30K-SC-UTL	274	2	1000	26388	0.85	B3-U1-G3	1. generally used for new roadway lighting design that requires a large (30') clear pole setback 2. verify CCT=3000K is available before using

GE	Evolve ERS-1	ERS1x10xxX30xGRAYxxx	90-161	1	590-920	10000-15000	0.83	B2-U0-G2 B3-U0-G2	All Evolve models have a flat glass window and recessed optics
GE	Evolve ERS-2	ERS2x16xxX30xGRAYxxx	132-275	2	590-765	16000-27000	0.83	B3-U0-G2 B4-U0-G3	1. generally suitable for new roadway lighting design
GE	ERL2	ERL2xxxxx30xGRAYLRxxx	118-278	2	420-970	15000-29000	0.88	B3-U0-G3 B3-U0-G2	1. generally suitable for new roadway lighting design
GE	Evolve ERLH	ERLHx10xx30xGRAYLRxxx	90-161	1	590-1020	10000-15000	0.86	B2-U0-G2 B3-U0-G2	1. generally suitable for new roadway lighting design
Philips Lumec	RoadFocus LED Cobra Head	RFM108W32LED3K-T-xxx-xxxx-DMG-xxx-SP2-xxx-GY3	108-215	varies	700 or 1050	10000-24000	0.84	B2-U0-G2 B3-U0-G4	1. generally suitable for new roadway lighting design 2. G4: use with caution-- any G4 design must meet RP-8 Veiling Luminance criterion
HueGo	SL-01 series	SL01-x-xxx-1-xxxGY-xxxxxxx-x30-xx	80-200	2-5	-	8000-20000	0.85		1. generally suitable for new roadway lighting design 2. verify CCT=3000K before installing

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Designer Note A: An "x" in the listed part number is a placeholder; specify the complete part number in the Plans. Verify existing and proposed circuit utilization voltages.

Designer Note B: For projects with Federal funding, create illumination design with the phrase "or approved equal."

Designer Note C: Design LED lighting to IES RP-8 long-term maintained levels (not initial levels); use the Design Total Light Loss Factor (LLF) listed below for each luminaire

Designer Note D: High Mast LED lighting (especially for new design) should utilize ASSYMETRIC DISTRIBUTIONS when possible to maximize utilization and minimize light trespass in both urban and rural areas. Shields should be used for all symmetric-distribution retrofits.

Designer Note E: See TEM for design restrictions on light trespass onto agricultural fields.

Designer Note F: designers may use lower-lumen versions than those shown (if available) for LOW-MAST lighting

HIGH MAST:

MANF.	PRODUCT FAMILY	ODOT-SPECIFIC PART#	POWER (W) (typ, Type V)	#LED MODULES	DRIVE CURRENT (mA)	LUMEN OUTPUT (Typ. Type V)	DESIGN TOTAL LLF (at 60K Hrs)	B-U-G Rating (Typ. Type V)	NOTES
Holophane	HMLED-2	HMLED2_xx_3K_xx_x_AW	252-500	varies	1050	~30000-60000	0.86	varies	
Holophane	HMLED-3	HMLED3_xx_3K_xx_x_AW	209-634	varies	N/A	~30000-80000	0.86	varies	
CHM	CONDOR LED	CLED-3M-G-30-70-HO-x-xx-xx	386-419	3	850	~39000-~44000	0.86	varies	
GE	Evolve HM	ERHM-01-x-xx-xx-7-30-x-1-4B-GRAY-R-xxx	350-475	2	430	~25000-~55000	0.85	varies	
Eaton	Celesteon	CST-x-x-x-U-Tx	234-760	varies	N/A	~30000-90000	0.86	varies	A single 8-4 Light Engine version of TypeV will replace two 400W HPS Type V luminaires.
SpecGrade LED	Navigator	NAV-Mx-3000K-x-xxx-GR-SP20	240-710	1-4	N/A	33500-96800	0.85	varies	A single M2 light engine version of Type V will replace two 400W HPS Type V luminaires.

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Designer Note A: Designer may use a simplified web-based design tool such as Acuity's Visual Roadway Tool™ for basic illuminance-based underpass lighting design

Designer Note B: Generally, illuminance-based design is used for underpasses. Follow RP-8 standard practice for underpass lighting.

Designer Note C: Longer underpasses (~80 feet typically) qualify as TUNNELS and should be designed per RP-22, generally using luminance-based design.

Designer Note D: The list below is based on similarity to older HPS luminaires per TEM 1142-9 and should be used for most designs. Designers may choose model numbers differing in distribution and power from those below within the same product family, with proper design documentation.

Designer Note E: Designer may specify glass optics if desired, but must verify that option is available for each luminaire specified.

UNDERPASS:

MANF.	PRODUCT FAMILY	ODOT-SPECIFIC PART# (Typical)	POWER (W) (typ.)	#LED MODULES (typ.)	DRIVE CURRENT (mA) (typ.)	TYP. LUMEN OUTPUT (Typ.)	DESIGN TOTAL LLF (at 60K Hrs)	B-U-G Rating, Typ. (Typ.)	NOTES
ElectroMatic	AR Series B2E-mount	LE3T4S084EB2E0xSOH	84	3	700	6593 (T4S)	0.83	B1-U0-G2	1. verify CCT=3000K 2. Tilttable. 3. Acrylic optics only.
ElectroMatic	AR Series F2E mount	LE3T4S084EF2E0xSOH	84	3	700	6593 (T4S)	0.83	B1-U0-G2	1. verify CCT=3000K 2. Tilttable. 3. Acrylic optics only.
GE	Evolve EWS3	EWS3xD3D1301GRAYFxxx	65	1	525	6,500 (Asymmetric Forward)	0.85	B2-U0-G1	1. Generally suitable as a drop-in replacement for 100W HPS per TEM 1142-9 2. EWS models with wattage different than shown may be used 3. Glass flat optic protecting acrylic optics
GE	Evolve EWNB	EWNBxC47301NGRAYFR001	70	1	375	7,500 (Asymmetric Forward)	0.85	B1-U0-G2	1. Generally suitable as a drop-in replacement for 100W HPS per TEM 1142-9 2. EWNB models with wattage different than shown may be used 3. Glass flat optic protecting acrylic optics
Holophane	TunnelPass	TNLEDx3K7xxWCRDGRAxF1xx	80	3	700	7232 (Wall Mount Crossbeam)	0.85	B0-U4-G5	1. use screw-down enclosure unless owner specifies latching enclosure 2. Glass optics.
Holophane	Wallpack LED	W4GLED-10C1000-30K-T3S-xxx-SPD	27-77	NA	700	3206 (T3S)	0.86	B0-U3-G2	1. typical spacing (27W, Type3Short) for 4-lane underpass 30 feet 2. typical spacing (27W Type3Short) for 3-lane underpass 40 feet 3. "W4G" part number is borosilicate glass

Eaton/Cooper	WKP LED	WKP-6B-LED-E-X-GL-AP-10K-7030-B-DXXX	46	6	140 @480VAC	5883	0.85	B1-U4-G4	"GL" denotes Borosilicate glass option.
Eaton/Cooper	Galleon GWC	GWC-AF-0x-LED-xx-xx-xx-7030	85	2	800	8718 (T4FT)	0.86	B2-U0-G2	