

Traffic Operations

APPROVED PRODUCTS LIST

TRAFFIC SIGNALS, HIGHWAY LIGHTING, AND HIGHWAY SIGNING EQUIPMENT

TRAFFIC SIGNALS AND HIGHWAY LIGHTING EQUIPMENT

I. GENERAL

This Approved Products List (APL) is based on equipment meeting department specifications and being tested for the specified test period with satisfactory performance. All models shall conform to the latest revisions of the Missouri Standard Specifications for Highway Construction, the Missouri Standard Plans for Highway Construction, the MoDOT Engineering Policy Guide, and any other applicable documents unless otherwise indicated. In addition, all products shall comply with 2 CFR 200.216 – Prohibition on Certain Telecommunications and Video Surveillance Services or Equipment. Conformance to MoDOT standards and specifications does not guarantee addition to the APL. Other factors such as, but not limited to, build quality, durability, ease of installation and use, and cost of repair may be taken into consideration. The models indicated on the list are approved but are subject to final field inspection before acceptance.

The department frequently tests new products and equipment for traffic signals and highway lighting. These new products may be installed on a construction project, purchased on parts orders, or with controller orders. Vendors may also submit a device, at no cost to the department, for the test period. MoDOT will determine the methods and needs of the product for test. Only a limited number of units will be accepted for test statewide until an item is added to the Approved Products List. A vendor wishing to initiate a test on a new product shall submit a Product Evaluation Request Form - Signal and Lighting Equipment. Copies of this form can be obtained from our website at https://www.modot.org/traffic. Minor model changes do not require an evaluation period; however, the vendor shall submit specification sheets, a summary of changes from the current to former model, and a sample of the product for the Department to inspect.

All equipment evaluations are coordinated through MoDOT Traffic Operations. The vendor supplying the equipment shall provide equipment specifications and a certification that the equipment meets department specifications before the test is performed. The equipment is tested for the period specified in the APL. Products not performing satisfactorily or falls below established standards will be replaced with an approved product if the vendor cannot provide timely correction of the problem or if unsatisfactory operation of the intersection results.

If a vendor is proposing a product that does not meet department specifications, an explanation of why the product meets or exceeds the current specifications must be provided by the vendor in writing to Traffic Operations. If approved, the product may be tested for the specified period noted in the APL. If the product is satisfactory, the Department will consider a revision to the applicable specifications. Any modification to the device must be reviewed and approved by MoDOT prior to sale/use of the modified device. Products will not be added to the Approved Products List that do not meet department specifications.

Products on the APL shall continue to perform satisfactorily. In addition, the vendors shall support the products. Products not performing as required or not supported are subject to removal from the APL.

Grounds for removal of products include, but limited to:

- Significant change in product specifications or design without notification to the department.
- Failure to correct or replace products that are defective in manufacturing or workmanship.
- Repeated patterns of malfunctions of a product not adequately corrected by the vendor.
- Unreasonable pricing of repair parts or repair work. Repair work not completed in a reasonable time frame.
- Excessive delivery times for new purchases or replacement parts.

Changes in standard specifications may also necessitate removal of specific products from the APL. If this occurs, there will be a grace period where the product will be retained on the list after the specifications are changed. However, the product will be removed from the list if it is not revised to meet specifications.

II. TRAFFIC SIGNAL EQUIPMENT

All traffic signal equipment requires a one-year evaluation period.

CONTROLLERS

NEMA TS1 CONTROLLERS	MODEL
Econolite	
170 CONTROLLERS	MODEL
McCain	ATC eX 2070

CABINETS AND BACK PANELS (NEMA & S.S. PRETIMED)

NOTE: Cabinets and Back panels that meet MoDOT specifications from the following manufacturers will be accepted. ALL other manufacturers must provide a model that meets specifications and complete a satisfactory one-year evaluation as described above to be added to the list.

NEMA CABINET AND BACK PANEL ASSEMBLIES

Control Technologies (Southern Manufacturing)
Econolite
Bison
Trafficware
Mobotrex

CABINETS AND RACKS (TYPE 2070 CONTROLLERS)

NOTE: Cabinets and Racks that meet MoDOT specifications from the following manufacturers will be accepted. ALL other manufacturers must provide a model that meets specifications and complete a satisfactory one-year evaluation as described above to be added to the list.

332 AND 336S CABINET AND RACK ASSEMBLIES

Swarco McCain (332D, 332E, 332L and 336L) Safetran Mobotrex (33x)

CONFLICT MONITORS

NEMA CONFLICT MONITORS

Eberle Design Incorporated (EDI)	
Eberle Design Incorporated (EDI)	NSM-12E
Eberle Design Incorporated (EDI)	SSM-12LE Series
Eberle Design Incorporated (EDI)	MMU-16E
Eberle Design Incorporated (EDI)	MMU2-16LE Series
Reno A&E	MMU-1600 Series
Reno A&E	MMU2-1600 Series

MODEL

170 CONFLICT MONITORS	MODEL
Eberle Design Incorporated (EDI)	2010FCL in
Eberle Design Incorporated (EDI)	
Ebene Design Incorporated (EDI)	2010EGEIP
CABINET ACCESSORIES	
ALIVILLA DV TIME CLOCK	MODEL
AUXILIARY TIME CLOCK	MODEL
Eltec	TC-18
Eltec	TC-3000
RTC	AP22
Applied Information	AI-500-070
EXTERNAL T.B.C. COORDINATORS	MODEL
Eltec	TC-18
FLASHERS	MODEL
(NEMA & 170)	-
Eberle Design Incorporated (EDI)	810
Reno A&E	
Traffic Sensor Corp	204
Traffic Sensor Corp	
Traffic Sensor Corp	
Traffic Sensor Corp	
Power Distribution & Control (PDC)	
Power Distribution & Control (PDC)	
FLASH TRANSFER RELAYS	MODEL
Struthers-Dunn	21ACPX-2/21ACPXD-5
Mid-Tex	
Power Distribution & Control (PDC)	
Eberle Design Incorporated (EDI)	
LOAD SWITCHES	MODEL
(NEMA & 170)	
Eberle Design Incorporated (EDI)	510
Reno A&E	
Power Distribution & Control (PDC)	
Power Distribution & Control (PDC)	
Traffic Sensor Corp	
ISOLATORS (170 only) (242=DC, 252=AC)	MODEL
Eberle Design Incorporated	242L

GDI Communications	DIM242
GDI Communications	ACIM252
Power Distribution & Control (PDC)	242
Power Distribution & Control (PDC)	252
SURGE PROTECTORS	MODEL
ASCO Power Technologies	258120NF015ATBN0 (Model 258) HE1750
TONE RECEIVERS	MODEL
Iniven	IR-30M-05-30
TONE TRANSMITTERS	MODEL

DETECTORS

MICROWAVE DETECTORS	MODEL
MS Sedco	TC-CK1-SBE INTERSECTOR
PEDESTRIAN PUSH BUTTONS	MODEL
Campbell Pelco Polara Engineering, Inc.	SE-2178-Pxx
POWER SUPPLY FOR CARD RACK DETECTORS - NEMA	MODEL
Eberle Design Incorporated (EDI)	PS-175B
SINGLE CHANNEL SHELF MOUNT DETECTORS, STANDARD	MODEL
Eberle Design Incorporated (EDI)	Oracle S1E
SINGLE CHANNEL SHELF MOUNT DETECTORS, TIME DELAY	MODEL
Eberle Design Incorporated (EDI)	LMD301T
ULTRASONIC DETECTORS	MODEL
MS Sedco	TC-30
2-CHANNEL CARD RACK COUNTING DETECTORS, DUAL OUTPUT	
Eberle Design Incorporated (EDI)	Oracle 2EC
2-CHANNEL CARD RACK COUNTING	

DETECTORS, SINGLE OUTPUT PULSE MODE

MODEL

(NEMA)	
Reno A&E	
2-CHANNEL CARD RACK DETECTORS, STANDARD (170)	MODEL
Eberle Design Incorporated (EDI) Eberle Design Incorporated (EDI) Reno A&E	LMD222
Oriux	222-GP8
2-CHANNEL CARD RACK DETECTORS, STANDARD (NEMA)	MODEL
Reno A&EReno A&E	
2-CHANNEL CARD RACK DETECTORS, TIME DELAY (NEMA)	MODEL
Reno A&EReno A&E	
SIGNAL HEADS	
BACKPLATES	MODEL
Traffic Parts Intelight Pelco Pelco	BP INTLIT Series BK-100x Series
LOUVERS	MODEL
Pelco	GL-1000 Series
POLYCARBONATE SIDE-MOUNT BRACKETS WITH RELATED HARDWARE	MODEL
Component Products	
SIGNAL HEADS - OPTICALLY LIMITED	MODEL
Intelight, Inc	
SIGNAL HEADS - POLY CONVENTIONAL	MODEL
Traffic Parts, IncTraffic Parts, IncMobotrex	SIG-TPB-586-CTN-NVN-0N (5 section)

Econolite	TP Series
General Traffic Equipment Corp	T-30 POLY
McCain	MTSTP Series
North American Signal	PTxx2BBx0CBxMO
Oriux	
PEDESTRIAN HEAD - POLY 1-SECTION	MODEL
March all and a state of the st	NA000E0/ NA07404

McCain	M32258 w/ M27164
General Traffic Equipment	P8-CDLED-SAMx-GV-B
Mobotrex	SG7MZ1xC1BBF10-00

SIGNAL AND PEDESTRIAN LED SIGNAL INDICATIONS

LED signal indications must be ETL verified. The Intertek ETL Verified Directory of LED Traffic Signal Modules Certified Products is located at: https://www.intertek.com/lighting/infrastructure/traffic-signals/. Signal indications manufactured by GE/Current Lighting Solutions shall not be accepted regardless of ETL Verified status.

PROGRAMMABLE VIEW	MODEL
Dialight	P46-3R33-003 (Red Ball)
Dialight	
Dialight	
GELcore	
GELcore	DR3-YCFB-01A (Yellow Ball)
GELcore	DR3-GCFB-01A (Green Ball)

HARDWARE

NOTE: Hardware that meets MoDOT specifications from the following manufacturers will be accepted. For compatibility with existing hardware and ease of maintenance, no other hardware will be accepted.

SIGNAL HARDWARE

Pelco

STRANDVISE	MODEL
MacLean Power Systems	5202 (Reliable 3/8" Strandvise)
MacLean Power Systems	5200 (Reliable 1/4" Strandvise)

POSTS AND MAST ARMS

Note: Posts and Mast Arms do not require an evaluation period. Posts and Mast Arms shall be fabricated in accordance with MoDOT specifications and standards. Posts and Mast Arms shall be pre-approved as required by the MoDOT standards and specifications to be added to the list. The following manufacturers have pre-approved fabrication details and documentation on file with the department. Posts and Mast Arms are subject to field inspection before acceptance.

STEEL POSTS AND MAST ARMS	DRAWING NUMBER
Ameron Pole Products	MO13TR11 - Rev. B (Type C)
Ameron Pole Products	MO13TR12 - Rev. B (Type CL)
Ameron Pole Products	MO13TR13 - Rev. B (Type B)
Ameron Pole Products	MO13TR14 - Rev. B (Type BL)
JEM Engineering & Manufacturing	MODOT1-4 Rev. 2 (Types C, CL, B & BL)
Maico Industries, Inc	MOMAST 1-5A Rev. 1-6 (Types C, CL, B & BL)
Millerbernd Manufacturing Company	1005022 (Type B)
Millerbernd Manufacturing Company	1003534 (Type BL)
Millerbernd Manufacturing Company	1005004 (Type C)
Millerbernd Manufacturing Company	1003523 (Type CL)
Millerbernd Manufacturing Company	500A971 Millerbernd
Pelco Structural, LLC	MODMA1001 & 1002 (Type B)
Pelco Structural, LLC	MODMAL1001 & 1002 (Type BL)
Pelco Structural, LLC	MOSMA1001 & 1002 (Type C)
Pelco Structural, LLC	MOSMAL1001 & 1002 (Type CL)
Union Metal Industries Corp	
Valmont	DB00408 - Rev. H

MISCELLANEOUS

LOOP SEALANTS (Loop sealants do not require material certification)	MODEL
3M	575 P606 290S 296-06 Stat-A-Flex Polyseal NR-201
PEDESTAL BASES	MODEL
Akron Foundry Akron Foundry Pelco Pelco Traffic Parts	TS-1000-L-WP PB5336 PB5337
SPLICE KITS (DETECTOR LEAD-IN)	MODEL
3MHOMAC HMC Industries	
METER SERVICE PEDESTAL (SIGNALS/SIGNALS & LIGHTING	B) MODEL
Milbank 120V Signal Only (Ameren)	CP3B51C1PBAOMO2

Myers 120V Signal with 2-Circuit 240V Lighting	
Pacific Utility Products 120V Signal Only	
Pacific Utility Products 120V Signal with 2-Circuit 240V Lighting . Note: (Pacific Utility Products - product listed with "R" is ring less meter sockets utilities requiring ring type meter socket, have the "6" at the end of the catalog number 150 per	s, other
Pacific Utility Products 120V Signal with 2-Circuit 240V Lighting . Note: (Pacific Utility Products - product listed with "R" is ring less meter sockets utilities requiring ring type meter socket, have the "6" at the end of the catalog number 150 pt.	s, other
Pacific Utility Products 120V Signal with 2-Circuit 240V Lighting . Pacific Utility Products 120V Sgnl w/2-Circuit 240V Lighting Dual Tesco 120V Signal with 2-Circuit 240V Lighting Tesco 120V Signal with 2-Circuit 240V Lighting	Mtr USPD-2M2100-100-MODOT6 28-105 Type III BF

VIDEO DETECTION SYSTEMS

VIDEO DETECTOR

Cubic	Gridsmart
Econolite	Autoscope RackVision
Econolite	
Econolite	
Iteris	
Iteris	Vantage Next
Iteris	Vantage Vector
Oriux	VideoTrak IQ-P
Oriux	
FLIR	VIP 3D.x Series
Miovision	Core DCM w/ Smartview 360 camera

MODEL

RADAR DETECTION SYSTEMS

RADAR DETECTOR	MODEL
Wavetronix	SmartSensor Matrix

III. HIGHWAY LIGHTING

All highway lighting equipment require a one-year evaluation period except for items noted requiring a six-month evaluation.

LIGHTING POLES

Note: Poles do not require an evaluation period. Poles shall be fabricated in accordance with MoDOT specifications and standards. They shall be pre-approved as required by the MoDOT standards and specifications in order to be added to the list. The following manufacturers have pre-approved fabrication details and documentation on file with the department. Lighting poles are subject to field inspection before acceptance.

STEEL POLES	DRAWING NUMBER
Ameron Pole Products JEM Engineering and Manufacturing JEM Engineering and Manufacturing Millerbernd Manufacturing Co. Union Metal Industries Corp.	MO98AT3 – Rev. 4 (Type AT45) Design 1 & 2MO98AT2 – Rev. 4 (Type AT45)Design 3, 4 & 5MO98AT4 – Rev. 3 (Type AT30)MO98B2 – Rev. 3 (Type B45 & MB45)MO98B4 – Rev. 2 (Type B30)MO-AT30 – Rev. 3 (Type AT30)MO-AT45 – Rev. 3 (Type AT45)730B907 (Type AT30)730B908 (Type AT45)730B908 (Type B30)730B910 (Type B45)730B910 (Type MB45)71020-B2 - Rev. 5 (Type AT30)71019-B6 - Rev. 7 (Type AT45)71019-B7 - Rev. 4 (Types B45 & MB45)71019-B8 – Rev. 3 (Type B30)71019-B9 – Rev. 3 (Type B45)71019-B10 – Rev. 3 (Type MB45)71019-B10 – Rev. 3 (Type MB45)71020-B103 – Rev. 3 (Type AT30)
Union Metal Industries Corp	,
ValmontValmont	
ALUMINUM POLES	DRAWING NUMBER
Valmont	MO-051707 (Type AT-30)

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FOUNDATIONS

Note: Screw anchor foundations do not require an evaluation period. Screw anchor foundations shall be fabricated in accordance with MoDOT specifications and standards. They shall be pre-approved as required by the MoDOT standards and specifications in order to be added to the list. The following manufacturers have pre-approved fabrication details and documentation on file with the department. Screw anchor foundations are subject to field inspection before acceptance.

SCREW ANCHOR FOUNDATIONS

DRAWING NUMBER

Component Products, Inc.	SLSF 8-5 (Type AT30)
Component Products, Inc.	SLSF 10-7 (Type AT45)
Hubbell Chance	SA112-0696 - Rev. H (Type AT30)
Hubbell Chance	SA112-0786 – Rev. E (Type AT45)
Integrated Traffic Solutions, Inc.	ITS AT30 (Type AT30)
Integrated Traffic Solutions, Inc.	ITS AT45 (Type AT45)
J. H. Botts	JHB MOH 30 – Rev. C (Type AT30)
J. H. Botts	JHB MOH 45 – Rev. D (Type AT45)

LED LUMINAIRES

NOTE: LED Luminaires do not require a field evaluation period. LED Luminaires shall be pre-approved by submittal of documents as required by the MoDOT standards and specifications in order to be added to the list. LED Luminaires shall be fabricated in accordance with MoDOT specifications and standards. Because there is no evaluation period MoDOT reserves the right to deny a product due to evaluations or experiences with a product by other agencies.

LED Luminaire models listed meet the minimum requirements of MoDOT standards and specifications. Higher lumen outputs, as required by site-specific design, may be provided for the listed models provided that MoDOT standards and specifications continue to be met.

BRACKET ARM MOUNT (120/277V)

I FD-Δ	MODEL

American Electric Lighting (AEL)	ATB0-P203-MVOLT-R3-3K-NL-NR
American Electric Lighting (AEL)	ATB0-P203-MVOLT-R3-3K-NL-P7-SH**
Cooper	ARCH-S-PA1-60-730-U-T3-AP-10K-K
Cooper	ARCH2-60-730-U-T3-AP-10K
Cree	XSPSM-D-HT-3ME-8L-30K7-UL-SV-N-Q7*
Cree	RSWM-B-HT-3ME-9L-30K7-UL-GY-N-Q3*
GE	ERLH-0-10-C3-30-D-GRAY-G-R**
LeoTek	GCJ3-30J-MV-30K-3R-GY-075-WL-4B
LeoTek	GCJ3-30J-MV-30K-3R-GY-075-WL-4B-PCR7-SC**
Lumec	RPN-65W20LED-730-G1-R3M-UNV-DMG-NRC-GY3
Lumec	RPN-65W20LED-730-G1-R3M-UNV-DMG-PH9-TLRD7-GY3**
Solar Max	SMX-68WiE-NV-LL5-00-3070-T302-P**

^{*} ANSI C136.41 7-pin receptacle included

^{**} ANSI C136.41 7-pin receptacle with shorting cap included

LED-B	MODEL
LLD-D	MODEL

American Electric Lighting (AEL)	ATB0-P303-MVOLT-R3-3K-GRAY-NL-NR
5 5 ,	ATB0-P303-MVOLT-R3-3K-GRAY-NL-P7-SH**
	ATB2-40BLEDE10-MVOLT-R3-3K-NL-HK-NR
American Electric Lighting (AEL)	ATB2-40BLEDE10-MVOLT-R3-3K-NL-HK-P7-SH**
Cooper	ARCH-S-PA2-110-730-U-T3-AP-10K-K
Cooper	ARCH-S-PA2-110-730-U-T3-AP-10K-K-PSC-PR7**
Cooper	ARCH3-100-730-U-T3-AP-10K-K-10X-MODOT
Cree	XSPLG-D-HT-3ME-18L-30K7-UL-SV-N-Q5*
Cree	RSWL-B-HT-3ME-14L-30K7-UL-GY-N-Q9*
GE	ERLH-0-15-C3-30-D-GRAY-G-R**
Lumec	RPM-105W40LED-730-G1-R3M-UNV-DMG-NRC-GY3
Lumec	RPM-105W40LED-730-G1-R3M-UNV-DMG-PH9-TLRD7-GY3**
Solar Max	SMX-105WiE-NV-LL5-00-3070-T302-P**

^{*} ANSI C136.41 7-pin receptacle included

LED-C MODEL

American Electric Lighting (AEL)	ATB0-P453-MVOLT-R3-3K-NL-NR
American Electric Lighting (AEL)	ATB0-P453-MVOLT-R3-3K-NL-P7-SH**
Cooper	ARCH-M-PA2-160-730-U-T3-AP-10K-K
Cooper	ARCH-M-PA2-160-730-U-T3-AP-10K-K-PSC-PR7**
Cooper	ARCH3-160-730-U-T3-AP-10K-K-XPR-10X-MoDOT
Cree	XSPLG-D-HT-3ME-24L-30K7-UL-SV-N-Q6*
GE	ERL2-0-21-C3-30-D-GRAY-G-R**
Holophane	MGLEDM-P2-30K-MVOLT-MR-VH-GRSD-NL
Holophane	MGLEDM-P2-30K-MVOLT-MR-VH-GRSD-NL-PR7-SH**
Lumec	RPM-130W60LED-730-G1-R3M-UNV-DMG-NRC-GY3
Lumec	RPM-130W60LED-730-G1-R3M-UNV-DMG-PH9-TLRD7-GY3**
Solar Max	SMX-166WiE-NV-LL5-00-3070-T302-P **

^{*} ANSI C136.41 7-pin receptacle included

BRACKET ARM MOUNT (480V)

American Electric Lighting (AEL)	ATB0-P203-480-R3-3K-NL-NR
American Electric Lighting (AEL)	ATB0-P203-480-R3-3K-NL-P7-SH**
Cree	XSPSM-D-HT-3ME-8L-30K7-UH-SV-N-Q7*
Cree	RSWM-B-HT-3ME-9L-30K7-UH-GY-N-Q3*
Cooper	ARCH-S-PA1-60-730-8-T3-AP-10K-K
Cooper	ARCH-S-PA1-60-730-8-T3-AP-10K-K-PSC-PR7**

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^{**} ANSI C136.41 7-pin receptacle with shorting cap included

^{**} ANSI C136.41 7-pin receptacle with shorting cap included

Leotek	GCJ3-30J-HV-30K-3R-GY-075-WL-4B
Leotek	GCJ3-30J-HV-30K-3R-GY-075-WL-4B-PCR7-SC**
Lumec	RPN-65W20LED-730-G1-R3M-HVU-DMG-NRC-GY3
Lumec	RPN-65W20LED-730-G1-R3M-HVU-DMG-PH9-TLRD7-GY3**
Solar Ma	axSMX-68WiE-HV-LL5-00-3070-T302-P**

^{*} ANSI C136.41 7-pin receptacle included

LED-B MODEL

American Electric Lighting (AEL)	.ATB0-P303-480-R3-3K-NL-NR
American Electric Lighting (AEL)	.ATB0-P303-480-R3-3K-NL-P7-SH**
American Electric Lighting (AEL)	.ATB2-40BLEDE10-MVOLT-R3-3K-NL-HK-NR
American Electric Lighting (AEL)	.ATB2-40BLEDE10-MVOLT-R3-3K-NL-HK-P7-SH**
Cooper	.ARCH-S-PA2-110-730-8-T3-AP-10K-K
Cooper	.ARCH-S-PA2-110-730-8-T3-AP-10K-K-PSC-PR7**
Cree	.XSPLG-D-HT-3ME-18L-30K7-UH-SV-N-Q5*
Cree	.RSWL-B-HT-3ME-14L-30K7-UH-GY-N-Q9*
GE	.ERLH-5-15-C3-30-D-GRAY-G-R**
Lumec	.RPM-105W40LED-730-G1-R3M-HVU-DMG-NRC-GY3
Lumec	.RPM-105W40LED-730-G1-R3M-HVU-DMG-PH9-TLRD7-GY3**
Solar Max	.SMX-105WiE-HV-LL5-00-3070-T302-P **

^{*} ANSI C136.41 7-pin receptacle included

LED-C MODEL

American Electric Lighting (AEL)	.ATB0-P453-480-R3-3K-NL-NR
American Electric Lighting (AEL)	.ATB0-P453-480-R3-3K-NL-P7-SH**
Cooper	.ARCH-M-PA2-160-730-8-T3-AP-10K-K
Cooper	.ARCH-M-PA2-160-730-8-T3-AP-10K-K-PSC-PR7**
Cree	.XSPLG-D-HT-3ME-24L-30K7-UH-SV-N-Q6*
GE	.ERL2-5-21-C3-30-D-GRAY-G-R**
Holophane	.MGLEDM-P2-30K-480-MR-VH-GRSD-NL
Holophane	.MGLEDM-P2-30K-480-MR-VH-GRSD-NL-PR7-SH**
Lumec	.RPM-130W60LED-730-G1-R3M-HVU-DMG-NRC-GY3
Lumec	.RPM-130W60LED-730-G1-R3M-HVU-DMG-PH9-TLRD7-GY3**
Solar Max	.SMX-166WiE-HV-LL5-00-3070-T302-P **

^{*} ANSI C136.41 7-pin receptacle included

HIGH PRESSURE SODIUM LUMINAIRES

NOTE: Luminaires will not be furnished with photoelectric cells. Receptacles will have a shorting plug in place of cell. Multi-tap ballast for 120 Volt and 240 Volt fixtures is permissible.

^{**} ANSI C136.41 7-pin receptacle with shorting cap included

^{**} ANSI C136.41 7-pin receptacle with shorting cap included

^{**} ANSI C136.41 7-pin receptacle with shorting cap included

BRACKET ARM MOUNT – 150 WATT	MODEL
American Electric Lighting	115 Series
American Electric Lighting	
Holophane	
	9
BRACKET ARM MOUNT - 250 WATT	MODEL
American Electric Lighting	115 Series
American Electric Lighting	
Holophane	
•	3
BRACKET ARM MOUNT - 400 WATT	MODEL
American Electric Lighting	125 Series
American Electric Lighting	
Holophane	
	3
HIGH MAST LIGHTING	MODEL
NOTE: High mast lighting is custom designed for the location series are considered pre-approved.	Fixtures from the following manufacturer's
Cooper	HMC Series
General Electric (GE)	HMA Series
Holophane	
Holophane	
Metrolux	VA Series
POLE TOP MOUNTING	MODEL
Holophane	HL2A Series
Holophane	
	geede dened
SIGN LIGHTING - 250 WATT	MODEL
General Electric (GE)	V2FN Series
Guth	
Holophane	
Holophane	
SIGN LIGHTING - 400 WATT	MODEL
Holophane	PANL Series
Holophane	
UNDERPASS (WALLPACKS)	MODEL
American Electric Lighting	582 Series
Cooper	
General Electric (GE)	
	VVAL Series
Holophane	MDWP Series
Holophane	MDWP Series WL2K Series
	MDWP Series WL2K Series

CONTROL EQUIPMENT

CONTACTORS-ELECTROMECHANICAL	MODEL
Square D	.Type S .A202 Series
CONTACTORS-MERCURY	MODEL

BASE MOUNTED CONTROL CABINETS

NOTE: Cabinets that meet MoDOT specifications from the following manufacturers will be accepted. All other manufacturers must provide a model that meets specifications and complete a satisfactory sixmonth evaluation as described above to be added to the list.

Cleveland Switchboard Coxline Hoffman Myers Power Products Shallbetter Inland Technologies

MOUNTING SUCKET FOR PROTUCLECTRIC CONTROL MODE	MOUNTING	S SOCKET FOR PHOTOELECTRIC CONTROL	MODEL
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NOTE: Mounting sockets require a six-month evaluation.

American Electric Lighting	DUR
Fischer-Pierce	S476-71

PHOTOELECTRIC CONTROL MODEL

TE ConnectivitySST-120 (120 volt)
TE ConnectivitySST-240 (240 volt)
TE ConnectivitySST-PV (120/240 volt)
American Electric Lighting
American Electric LightingD124-1.0-STJ (120/240 volt)
American Electric LightingD240-1.0-STJ (240 volt)
American Electric LightingDE480-1.0-TJ (480 volt)
Fischer-Pierce
Fischer-Pierce
Fischer-PierceFPN7794 (480 volt)
Fischer-PierceFPN7760 (120 volt)
General Electric (GE)PEC01TL (>120v/< 305v w/ time delay)
General Electric (GE)PEC1TL (120v)
General Electric (GE)PEC5TL (480v)
ITTSAT-15
Tyco6190 VPS

TYPE A CIRCUIT BREAKERS MODEL

Square DWestinghouse/Cutler-HammerWestinghouse/Cutler-Hammer	EHD Series (1-Pole)
MISCELLANEOUS	
AVIATION LIGHTING	MODEL
Hughey & Philips (hugheyandphillips.com) Hughey & Phillips Flight Light, Inc. (flightlight.com)	FlashGuard 3000B
NAVIGATION LIGHTING	MODEL
Tideland (orgasignal.com) Tideland Pharos Marine Automatic Power, Inc. Pharos Marine Automatic Power, Inc.	Nova-65 FA-143 LED LR
FUSED SLIP CONNECTORS	MODEL
NOTE: Slip connectors require a six-month evaluation.	
Bussmann	HEB-JW-RYC
METER SERVICE PEDESTAL (LIGHTING)	MODEL
Milbank 4-Circuit 240V Lighting	CP3B51D1PBAOMO1 CP3B51D1PBAOMOCS1 USP24-M2100-100-MODOT6 USP16-M2100-100-MODOT
SPLICE KITS	MODEL
3M 3M 3M 3M HOMAC HMC Industries	82A2 (Single) 82B1 (Three Way) 82B2 (Three Way)
TRANSFORMER BASES	MODEL
Akron FoundryAkron Foundry	

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IV. POWER SUPPLY EQUIPMENT AND PULL BOXES

All items require a six-month evaluation period.

MAIN SERVICE DISCONNECT ENCLOSURE WITH SAFETY SWITCH (NEMA 4)	MODEL
General Electric (GE)	TE 100 CS
Square D	
Westinghouse	WFDN 100
PREFORMED PULL BOX-CLASS 1 Straight	MODEL
Armorcast Products Company	A6001640TAPCX22 (Box & Lid)
CDR	,
Composite Industries	
GlasMasters	
NewBasis	
Oldcastle	,
Oldcastle	
Oldcastle	` ,
Strongwell/Quazite	PG1730B532 (Box)
•	PG1730H511 (Lid)
	PG1730BA Series
Synertech	S1730B24AA (Box)
	S1730HBB0A (Lid)
Flared	
American Polymer Company	
Armorcast Products Company	
CDR	
Oldcastle	
Oldcastle	
NewBasis	` ,
Pencell Plastics	PEM-1830-PCX (Box & Lid)
PREFORMED PULL BOX-CLASS 2 Straight	MODEL
Armorcast Products Company	A6001974TAPCX26 (Box & Lid)
Armorcast Products Company	
CDR	A14-2436 series-24" (Box & Lid)
Composite Industries	Cl243624PB1P
GlasMasters	AP243624P22P-4J6
NewBasis	PCA243624-MODOT2 (Box & Lid)
Oldcastle	H2436-24 (Box)
	H2436-PI (Lid)
Oldcastle	
Oldcastle	
Strongwell/Quazite	PG2436B539 (Box)
	PG2436H508 (Lid)
	PG2436BA Series
Synertech	S2436B26AA (Box)

S2436HCB0A (Lid)

PREFORMED PULL BOX-CLASS 2	MODEL
Flared	
American Polymer Company	
Armorcast Products Company	
Armorcast Products Company	
CDR	A12-2436 series-24" (Box & Lid)
Oldcastle	CHA243624HO1R
Oldcastle	
NewBasis	FCA243624T Series (Box & Lid)
Pencell Plastics	PEM-2436-36 (Box & Lid)
Pencell Plastics	PEM-2436-PCX-24 (Box & Lid)
Synertech	S2436B24AA (Box)
	S2436HCB0A (Lid)
PREFORMED PULL BOX-CLASS 3	MODEL
Straight	
Armorcast Products Company	
CDR	
Composite Industries	
NewBasis	· · · · · · · · · · · · · · · · · · ·
Oldcastle	
	,
Oldcastle	
Oldcastle	
Strongwell/Quazite	PG3048B560 (Box)
	PG3048H517 (Lid)
	PG3048BA Series
Synertech	S3048B36AA (Box)
	S3048HCB0A (Lid)
Flared	
American Polymer Company	
Armorcast Products Company	A6001550TAX36 (Box & Lid)
CDR	A12-3048-series 36" (Box & Lid)
Oldcastle	CHA304836HO1R
Oldcastle	
NewBasis	FCA304836T Series (Box & Lid)
Pencell Plastics	PEM-3048-36-PCX-SPLIT (Box & Lid)
PREFORMED PULL BOX-CLASS 5	MODEL
Flared	A COO (4 CCT A (Dov. 9 L ; d)
Armorcast Products Company	
Armorcast Products Company	
CDR	,
Oldcastle	
Oldcastle	
NewBasis	
NewBasis	
Quazite	PR3944Z504

HIGHWAY SIGNING EQUIPMENT

V. GENERAL

This Approved Products List (APL) for highway signing equipment contains current pre-approved products for highway signing. This list is applicable to department purchases and construction contracts. The list includes products that have been approved for use based on satisfactory performance during a specified test period. Products listed have undergone sufficient field testing to be considered acceptable for use at any time. All field tests of new products or pending products should be arranged with Central Office Traffic.

The department frequently tests new products and equipment for highway signing. These new products may be installed on a construction project or used for normal department installations and maintenance. Vendors may also submit items, at no cost to the department, for the test period. Only a limited number of units will be accepted for test statewide until the product is added to the Approved Products List. A vendor wishing to initiate a test on a new product shall submit a Product Evaluation Request Form. Copies of this form can be obtained from our website at www.modot.state.mo.us or contact MoDOT Central Office Traffic. Minor model changes of previously approved products do not require a new evaluation period, although the vendor shall submit specification sheets and a sample of the product for the Department to inspect. Any modifications determined to potentially alter the performance of the product may require the product to undergo additional field testing and evaluation.

All product evaluations are coordinated through MoDOT Central Office Traffic. The vendor supplying the equipment shall provide equipment specifications and a certification that the equipment meets department specifications before the test is performed. The equipment is tested for the period specified by Central Office Traffic (typically one year). Products that are not performing satisfactorily will be left off of the list. Products that were previously approved that begin to perform unsatisfactorily will be removed or replaced with an approved product if the vendor cannot provide timely correction of the problem.

If a vendor is proposing a product that does not meet department specifications, an explanation of why the product meets or exceeds the current specifications must be provided by the vendor in writing to Central Office Traffic. If approved, the product may be tested for the specified period as described above. If the product is satisfactory, the Department will consider a revision to the applicable specifications. Products will not be added to the Approved Products List that does not meet department specifications.

Products on the APL shall continue to perform satisfactorily. In addition, the vendors shall support the products. Products not performing as required or not supported are subject to removal from the APL.

Grounds for removal of products include but are not limited to:

- Significant change in product specifications or design without notification to the department.
- Failure to correct or replace products that are defective in manufacturing or workmanship.
- Repeated patterns of malfunctions of a product not adequately corrected by the vendor.
- Unreasonable pricing of repair parts or repair work. Repair work not completed in a reasonable time frame.
- Excessive delivery times for new purchases or replacement parts.

Changes in standard specifications may also necessitate removal of specific products from the APL. If this occurs, there will be a grace period where the product will be retained on the list after the specifications are changed. However the product will eventually be removed from the list if it is not revised to meet specifications.

VI. HIGHWAY SIGNING EQUIPMENT

BREAKAWAY DEVICES

MANUFACTURER	DESCRIPTION, MODEL
Ultimate Highway Products Xcessories Squared Xcessories Squared	. Kleen Break 425 for 2" PSST, XKB42520-G
Xcessories Squared	. Redi-Torque 280 for 2.5" PSST, SB8C-250A-G . Redi-Torque 280 Pre-Assembled Slip Base for 2.5" PSST, RT8UX-25C25-G
Xcessories Squared	. Redi-Torque Triangular Surface Mount Base, SMSB9-10-G
Xcessories Squared	Redi-Torque Bolt Kit RTSB-MPHDW
Northwest Pipe Company	
Designovations, Inc	
Designovations, Inc	. Snap n Safe S250 and S250 S (2.5")
Dent Breakaway Industries, Inc	
Dent Breakaway Industries, Inc Dent Breakaway Industries, Inc	
Done Droakaway muusines, mo	. O/T WIGHING DETIL DOIL, #0002

<u>4 INCH SQUARE STEEL TUBE SIGNPOST – SINGLE POST INSTALLATION ONLY</u> This post is only used to support the following items:

- Exit Gore Signs
- Flat Sheet Signs 48" wide ranging in height from 60" to 96"
- Community Wayfinding Signs

MANUFACTURER

DESCRIPTION, MODEL

Xcessories Squared	. MASSH-400 Signpost System with 54" concrete anchor
Atkore Allied Tube and Conduit	. SafeSign Signpost System with 54" concrete anchor

SIGN HARDWARE

MANUFACTURER	DESCRIPTION, MODEL
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Xcessories Squared	. Aluminum Post Clamp for 2.5" Pipe, XAPC278RD
Xcessories Squared	. Aluminum Post Clamp for 3" Pipe, XAPC350RD
Xcessories Squared	. Aluminum Post Clamp for 4" Pipe, XAPC450RD
Xcessories Squared	. Aluminum Post Clamp for Backer Bar, XAB750
Xcessories Squared	. Aluminum Sign Backer Bar, ASB200P1
Xcessories Squared	. Extruded Panel Clamp for 4" Square Post, EPPCS400SQ
Xcessories Squared	. Extruded Panel Clamp for 2" PSST, EPPCS200SQ
Xcessories Squared	. Extruded Panel Clamp for 2.5" PSST, EPPCS250SQ

Xcessories Squared	. Flat Sheet Post Clamp for 4" Square Post, SBPCS400SQ
(Used with aluminum sign backer bar ASB200P1)	
Xcessories Squared	. Extruded Panel Clamp for 2.5" Pipe, EPPCS250RD
Xcessories Squared	. Extruded Panel Clamp for 3" Pipe, EPPCS300RD
Xcessories Squared	. Extruded Panel Clamp for 4" Pipe, EPPCS400RD
Xcessories Squared	. Extruded Panel Clamp for 4x4 Wood, EPPCS44W
Xcessories Squared	. Extruded Panel Clamp for 4x6 Wood, EPPCS46W
Xcessories Squared	

SIGNS

MANUFACTURER	DESCRIPTION, MODEL

Tapco Blinkersigns

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RECENTLY ADDED:

II. TRAFFIC SIGNAL EQUIPMENT

CO	NT	'RO	LLE	RS

170 CONTROLLERS MODEL

McCainATC eX 2070

(Added December 2024)

CONFLICT MONITORS

NEMA CONFLICT MONITORS MODEL

Reno A&EMMU2-1600 Series

(Added December 2024)

CABINET ACCESSORIES

AUXILIARY TIME CLOCK MODEL

EltecTC-3000

(Added December 2024)

SURGE PROTECTORS MODEL

Hesco/RLSHE1750

(Added December 2024)

SIGNAL HEADS

BACKPLATES MODEL

(Added December 2024)

III. HIGHWAY LIGHTING

LED LUMINAIRES

BRACKET ARM MOUNT (120/277V)

LED-A MODEL

CooperARCH2-60-730-U-T3-AP-10K

(Added December 2024)

LED-B MODEL

 Cooper
 ARCH3-100-730-U-T3-AP-10K-K-10X-MODOT

 LED-C
 MODEL

 Cooper
 ARCH3-160-730-U-T3-AP-10K-K-XPR-10X-MoDOT

 (Added December 2024)
 ARCH3-160-730-U-T3-AP-10K-K-XPR-10X-MoDOT

BASE MOUNTED CONTROL CABINETS

Myers Power Products (Added December 2024)

IV. POWER SUPPLY EQUIPMENT AND PULL BOXES

PREFORMED PULL BOX-CLASS 1	MODEL
Straight GlasMasters(Added June 2024)	AP173024P22P-4J6
NewBasis(Added December 2024)	PCA173024-MODOT1 (Box & Lid)
Flared American Polymer Company(Added December 2024)	P173024U22 (Box & Lid)
PREFORMED PULL BOX-CLASS 2	MODEL
Straight NewBasis(Added December 2024)	PCA243624-MODOT2 (Box & Lid)
GlasMasters(Added June 2024)	AP243624P22P-4J6
Flared American Polymer Company(Added December 2024)	P243624U22 (Box & Lid)
PREFORMED PULL BOX-CLASS 3	MODEL
Straight NewBasis(Added December 2024)	PCA304836-MODOT3 (Box & Lid)
Flared American Polymer Company(Added December 2024)	P304836HU22 (Box & Lid)
PREFORMED PULL BOX-CLASS 5 Flared	MODEL
NewBasis	FCA400036T Series
(Added December 2024 to replace outdated product number)	

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VI. HIGWAY SIGNING EQUIPMENT
No updates

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RECENTLY REMOVED:

II. TRAFFIC SIGNAL EQUIPMENT

CONTROLLERS

NEMA TS1 CONTROLLERS Intelight(Removed December 2024, item no longer manufactured)	MODEL X-3 Series – NEMA X3C
NEMA ON-STREET MASTER CONTROLLER	MODEL
Econolite(Removed December 2024, item no longer manufactured)	ASC/2M
170 CONTROLLERS	MODEL
McCain Econolite(Removed December 2024)	

CONFLICT MONITORS

NEMA CONFLICT MONITORS	MODEL
Trafficware(Removed December 2024, item no longer manufactured)	NM512
170 CONFLICT MONITORS	MODEL
Eberle Design Incorporated (EDI)	2018

CABINET ACCESSORIES

FLASH TRANSFER RELAYS	MODEL
AMECO(Removed December 2024, item no longer manufactured)	136-4962
ISOLATORS (170 only) (242=DC, 252=AC)	MODEL
Reno A&E	
Safetran	
Safetran	252
(Removed December 2024, item no longer manufactured)	

DETECTORS

MICROWAVE DETECTORS	MODEL	
Image Sensing Systems (ISS)(Removed December 2024, item no longer manufactured)	RTMS X-2 (RTMS Sx-300)	
2-CHANNEL CARD RACK COUNTING DETECTORS, SINGLE OUTPUT PULSE MODE (NEMA)	MODEL	
Eberle Design Incorporated (EDI)(Removed December 2024, item no longer manufactured)	LMD632T	
2-CHANNEL CARD RACK DETECTORS, STANDARD (NEMA)	MODEL	
Eberle Design Incorporated (EDI)(Removed December 2024, item no longer manufactured)	LMD602R	
2-CHANNEL CARD RACK DETECTORS, TIME DELAYMODEL (NEMA)		
Eberle Design Incorporated (EDI)(Removed December 2024, item no longer manufactured)	LMD602T	

III. HIGHWAY LIGHTING No updates

IV. POWER SUPPLY EQUIPMENT AND PULL BOXES

PREFORMED PULL BOX-CLASS 1 Flared	MODEL
NewBasis	,
NewBasis(Removed December 2024, item model number changes)	FCA173022CC4749-61 (Box & Lid)
PREFORMED PULL BOX-CLASS 2 Flared	MODEL
NewBasis	FCA243630CC4126-61 (Box & Lid)
NewBasis	FCA243630CC4749-61 (Box & Lid)
(Removed December 2024, item model number changes)	
PREFORMED PULL BOX-CLASS 3 Flared	MODEL
NewBasis	FCA304836EE4749-61 (Box & Lid)
(Removed December 2024, item model number changes)	67 100 1000EE 17 10 01 (Box & Eld)
PREFORMED PULL BOX-CLASS 5 Flared	MODEL
NewBasis	FCA540036C4800 (Box & Lid)
NewBasis	,
NewBasis	

(Removed December 2024, item model number changes)

VI. HIGWAY SIGNING EQUIPMENT
No updates

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RECENTLY REVISED:

II. TRAFFIC SIGNAL EQUIPMENT

CABINET ACCESSORIES

Eberle Design Incorporated242L

DETECTORS

2-CHANNEL CARD RACK COUNTING DETECTORS, DUAL OUTPUT

SIGNAL HEADS

III. HIGHWAY LIGHTING

LED LUMINAIRES

BRACKET ARM MOUNT (120/277V)

LED-A MODEL

 Cree
 RSWM-A-HT-3ME-9L-30K7-UL-GY-N-Q3*

 Changed December 2024, revised model number:
 RSWM-B-HT-3ME-9L-30K7-UL-GY-N-Q3*

 LeoTek
 GCJ2-20H-MV-WW-3-GY-1A-WL-4B

 Changed December 2024, revised model number:
 GCJ3-30J-MV-30K-3R-GY-075-WL-4B

 LED-B
 MODEL

 Cree
 RSWL-A-HT-3ME-14L-30K7-UL-GY-N-Q9*

 Changed December 2024, revised model number:
 Cree

 Cree
 RSWL-B-HT-3ME-14L-30K7-UL-GY-N-Q9*

BRACKET ARM MOUNT (480V)

LED-A **MODEL** CreeRSWM-A-HT-3ME-9L-30K7-UH-GY-N-Q3* Changed December 2024, revised model number: CreeRSWM-B-HT-3ME-9L-30K7-UH-GY-N-Q3* LeotekGCJ2-20H-HV-WW-3-GY-1A-WL-4B Changed December 2024, revised model number: LeotekGCJ3-30J-HV-30K-3R-GY-075-WL-4B LED-B **MODEL**RSWL-A-HT-3ME-14L-30K7-UH-GY-N-Q9* Cree Changed December 2024, revised model number:RSWL-B-HT-3ME-14L-30K7-UH-GY-N-Q9* Cree

IV. POWER SUPPLY EQUIPMENT AND PULL BOXES No updates

VI. HIGWAY SIGNING EQUIPMENT
No updates

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