



Traffic Operations

APPROVED PRODUCTS LIST

**TRAFFIC SIGNALS, HIGHWAY LIGHTING,
AND HIGHWAY SIGNING EQUIPMENT**

**MISSOURI DEPARTMENT OF TRANSPORTATION
APPROVED PRODUCTS LIST
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.

MISSOURI DEPARTMENT OF TRANSPORTATION APPROVED PRODUCTS LIST

II. TRAFFIC SIGNAL EQUIPMENT

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

CONTROLLERS

NEMA TS1 CONTROLLERS

MODEL

Econolite	ASC/3-2100
Econolite	Cobalt Series
Intelight.....	X-3 Series
McCain	ATC eX2 NEMA
Trafficware	980

NEMA ON-STREET MASTER CONTROLLER

MODEL

Econolite	ASC/2M
Siemens	EPAC M52 with SEMARC

SOLID STATE PRETIMED CONTROLLERS (ALL TYPES)

MODEL

No currently accepted models.

170 CONTROLLERS

MODEL

McCain	170E
Phillips/Sisson Industries, Inc.	170E
Safetran.....	170E

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 Technology
Econolite
Henke/Bison
IDC/Gibbons
Trafficware
Eagle

SOLID STATE PRETIMED CABINET AND BACK PANEL ASSEMBLIES

Eagle

CABINETS AND RACKS (TYPE 170 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.

MISSOURI DEPARTMENT OF TRANSPORTATION APPROVED PRODUCTS LIST

332 AND 336S CABINET AND RACK ASSEMBLIES

McCain
Phillips/Sisson Industries, Inc.
Safetran
Eagle

CONFLICT MONITORS

NEMA CONFLICT MONITORS

MODEL

Eberle Design Incorporated (EDI).....	NSM-6E
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
Trafficware	NM512
Power Distribution & Control (PDC).....	CM82-03
Power Distribution & Control (PDC).....	CM82-06
Power Distribution & Control (PDC).....	CM82-12
Reno A&E	MMU-1600 Series
Solid State Devices	NM-6
Solid State Devices	NM-12
Solid State Devices	LCD-6P
Solid State Devices	LCD-12P

170 CONFLICT MONITORS

MODEL

Eberle Design Incorporated (EDI).....	2010ECLip
Eberle Design Incorporated (EDI).....	2018ECLip
Reno A & E	2018

CABINET ACCESSORIES

AUXILIARY TIME CLOCK

MODEL

Eltec	NTC-17E
Eltec	TC-14
RTC	AP41
Applied Information	AI-500-070

EXTERNAL T.B.C. COORDINATORS

MODEL

Eltec	TC-14
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FLASHERS (NEMA & 170)

MODEL

Eberle Design Incorporated (EDI).....	810
Power Distribution & Control (PDC).....	SSF-86
Power Distribution & Control (PDC).....	SSF-88
Reno A & E	FL-200
Traffic Sensor Corp.....	204

MISSOURI DEPARTMENT OF TRANSPORTATION APPROVED PRODUCTS LIST

Traffic Sensor Corp	204-15
Traffic Sensor Corp	304
Traffic Sensor Corp	304-15

FLASH TRANSFER RELAYS **MODEL**

AMECO	136-4962
Struthers-Dunn	21ACPX-2/21ACPXD-5
Mid-Tex	136-62T-3A1
Power Distribution & Control (PDC).....	FTR 91
Reno	TR-200

LOAD SWITCHES **MODEL**
(NEMA & 170)

Eberle Design Incorporated (EDI).....	510
Power Distribution & Control (PDC).....	SSS-86
Power Distribution & Control (PDC).....	SSS-88
Reno A & E	LS-200
Traffic Sensor Corp	200
Traffic Sensor Corp	200-15
Traffic Sensor Corp	300
Traffic Sensor Corp	300-15

ISOLATORS (170 only) **MODEL**
(242=DC, 252=AC)

Eberle Design Incorporated	242
GDI	242
GDI	252
Power Distribution & Control (PDC).....	242
Power Distribution & Control (PDC).....	252
RENO A&E	242 (2 Channel)
Safetran.....	242
Safetran.....	252

SURGE PROTECTORS **MODEL**

ASCO	258120NF015ATBN0
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TONE RECEIVERS **MODEL**

Iniven.....	IR30M-05-30
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TONE TRANSMITTERS **MODEL**

Iniven.....	IT30
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DETECTORS

MICROWAVE DETECTORS **MODEL**

Microwave Sensors.....	TC-26B
Electronic Integrated Systems, Inc. (EIS)	RTMS X-2

MISSOURI DEPARTMENT OF TRANSPORTATION APPROVED PRODUCTS LIST

MICROLOOP, PROBE	MODEL
3M	Canoga 701

PEDESTRIAN PUSH BUTTONS	MODEL
Campbell	4 EVR 120
Pelco	SE-2178-Pxx
Polara Engineering, Inc.....	BDSP-010-B

POWER SUPPLY FOR CARD RACK DETECTORS - NEMA	MODEL
ICC	PS24
EDI	PS-175B

SINGLE CHANNEL SHELF MOUNT DETECTORS, STANDARD	MODEL
Eberle Design Incorporated (EDI).....	LMD301S
Sarasota.....	535B/MS

SINGLE CHANNEL SHELF MOUNT DETECTORS, TIME DELAY	MODEL
Eberle Design Incorporated (EDI).....	LMD301T
Sarasota.....	535T/MS

ULTRASONIC DETECTORS	MODEL
Microwave Sensors.....	TC-30

2-CHANNEL CARD RACK COUNTING DETECTORS, DUAL OUTPUT	
Eberle Design Incorporated (EDI).....	LMD632

2-CHANNEL CARD RACK COUNTING DETECTORS, SINGLE OUTPUT PULSE MODE (NEMA)	MODEL
Eberle Design Incorporated (EDI).....	LMD632T
ICC	S27B
Reno A & E	C

2-CHANNEL CARD RACK DETECTORS, STANDARD (170)	MODEL
Eberle Design Incorporated (EDI).....	LM222
Eberle Design Incorporated (EDI).....	LMD222
Reno A & E	222
Sarasota.....	222-GP5
Sarasota.....	222 GP6

2-CHANNEL CARD RACK DETECTORS, STANDARD (NEMA)	MODEL
Eberle Design Incorporated (EDI).....	LMD602R

MISSOURI DEPARTMENT OF TRANSPORTATION APPROVED PRODUCTS LIST

ICC	S27B
Reno A & E	C
Reno A & E	G

**2-CHANNEL CARD RACK DETECTORS, TIME DELAYMODEL
(NEMA)**

Eberle Design Incorporated (EDI).....	LMD602TR
Reno A & E	C
Reno A & E	GT

SIGNAL HEADS

BACKPLATES

MODEL

Chapel Hill	44xx Series
Intelight	BP INTLIT Series
Pelco	BK-100x Series
Neodesia Plastics	BP Series

LOUVERS

MODEL

Pelco	GPL
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**POLYCARBONATE SIDE-MOUNT BRACKETS
WITH RELATED HARDWARE**

MODEL

Component Products	Any
Eagle.....	UKS1452AB

SIGNAL HEADS - OPTICALLY LIMITED

MODEL

Intelight, Inc.	ESB Series
McCain.....	HPTS Series

SIGNAL HEADS - POLY CONVENTIONAL

MODEL

Chapel Hill	SIG-TPB-305-CTN-NVN-0N (3 section)
Chapel Hill	SIG-TPB-586-CTN-NVN-0N (5 section)
Eagle.....	SA Series
Econolite	TP Series
General Traffic Equipment Corp.....	T-30 POLY
IDC/Safetrans	LT Series
McCain.....	MTSTP Series
North American Signal	PTXOBB_0CB
Peek.....	PSS Series

PEDESTRIAN HEAD – POLY 1-SECTION

MODEL

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

MISSOURI DEPARTMENT OF TRANSPORTATION APPROVED PRODUCTS LIST

PEDESTRIAN LED SIGNAL INDICATION

Pedestrian LED signal indications must be ETL verified. The ETL verified listing is located at: <http://www.intertek.com/lighting/infrastructure/traffic-signals/>

HARDWARE

NOTE: Hardware that meets MoDOT specifications from the following manufacturers will be accepted. ALL other manufacturers must provide equipment that meets specifications and complete a satisfactory six-month evaluation as described above to be added to the list.

SIGNAL HARDWARE

Pelco

STRANDWISE	MODEL
Reliable 3/8" Strandwise	5202
Reliable 1/4" Strandwise	5200

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
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.	30443-B202 - Rev. 19 (Types C, CL, B & BL)
Valmont	DB00408 - Rev. H (Types B, BL, C, & CL)

MISSOURI DEPARTMENT OF TRANSPORTATION APPROVED PRODUCTS LIST

MISCELLANEOUS

LOOP SEALANTS

(Loop sealants do not require material certification)

	MODEL
3M	5000
Bondo.....	575
Bondo.....	P606
Chemque	290S
Chemque	296-06
Durant Paints	Stat-A-Flex Polyseal
Pecora	NR-201
RAI Products.....	Pro-Seal 6006

PEDESTAL BASES

	MODEL
Akron Foundry	TS-1000-L-P
Akron Foundry	TS-1000-L-WP
Pelco.....	PB5336
Pelco.....	PB5337
Traffic Parts	TP 289 X

SPLICE KITS (DETECTOR LEAD-IN)

	MODEL
3M	DBY Series
HOMAC HMC Industries	RAB 1/0 Series

METER SERVICE PEDESTAL (SIGNALS/SIGNALS & LIGHTING) MODEL

Milbank 120V Signal Only (Ameren)	CP3B51C1PAAOMO1
Milbank 120V Signal with 2-Circuit 240V Lighting (Ameren).....	CP3B51C1PBAOMO2
Milbank 120V Signal with 2-Circuit 240V Lighting Dual Meter	CP3B62C2NBAOMO1
Myers 120V Signal with 2-Circuit 240V Lighting	MEUGLA-M100-MDOT
Myers 120V Signal with 2-Circuit 240V Lighting	MEUG 20
Pacific Utility Products 120V Signal Only	USP16-M2100-112C-MODOT6-TS

Pacific Utility Products 120V Signal with 2-Circuit 240V LightingUSPAR-100-100-MODOT

Note: -- (Pacific Utility Products - product listed with "R" is ring less meter sockets, other utilities requiring ring type meter socket, have the "6" at the end of the catalog number)

Pacific Utility Products 120V Signal with 2-Circuit 240V LightingUSP16R-M2100-112C-MODOT

Note: -- (Pacific Utility Products - product listed with "R" is ring less meter sockets, other utilities requiring ring type meter socket, have the "6" at the end of the catalog number)

Pacific Utility Products 120V Signal with 2-Circuit 240V LightingUSP24-M2100-100-MODOT6-TSL

Pacific Utility Products 120V Sgnl w/2-Circuit 240V Lighting Dual Mtr USP24-M2100-100-MODOT6

Tesco 120V Signal with 2-Circuit 240V Lighting28-105 Type III BF

Tesco 120V Signal with 2-Circuit 240V Lighting28-102F

MISSOURI DEPARTMENT OF TRANSPORTATION APPROVED PRODUCTS LIST

LIGHT EMITTING DIODES (LED)

LEDs (circular and arrow) must be ETL verified. The ETL verified listing is located at:
<http://www.intertek.com/lighting/infrastructure/traffic-signals/>

PROGRAMMABLE VIEW	MODEL
Dialight.....	P46-3R33-003 (Red Ball)
Dialight.....	P46-3Y33-003 (Yellow Ball)
Dialight.....	P46-3G33-003 (Green Ball)
GELcore.....	DR3-RCFB-01A (Red Ball)
GELcore.....	DR3-YCFB-01A (Yellow Ball)
GELcore.....	DR3-GCFB-01A (Green Ball)

VIDEO DETECTION SYSTEMS

VIDEO DETECTOR	MODEL
Cubic.....	Gridsmart
Econolite	Autoscope RackVision
Econolite	Autoscope RackVision Terra
Econolite	Autoscope Vision
Iteris	Vantage Edge2
Iteris	Vantage Next
Iteris	Vantage Vector
Peek Traffic Corp.....	VideoTrak IQ-P
Peek Traffic Corp.....	VideoTrak IQ-ITS
FLIR	VIP 3D.x Series

MISSOURI DEPARTMENT OF TRANSPORTATION APPROVED PRODUCTS LIST

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.....	MO98AT3 – Rev. 4 (Type AT45) Design 1 & 2
Ameron Pole Products.....	MO98AT2 – Rev. 4 (Type AT45)Design 3, 4 & 5
Ameron Pole Products.....	MO98AT4 – Rev. 3 (Type AT30)
Ameron Pole Products.....	MO98B2 – Rev. 3 (Type B45 & MB45)
Ameron Pole Products.....	MO98B4 – Rev. 2 (Type B30)
JEM Engineering and Manufacturing	MO-AT30 – Rev. 3 (Type AT30)
JEM Engineering and Manufacturing	MO-AT45 – Rev. 3 (Type AT45)
Millerbernd Manufacturing Co.	730B907 (Type AT30)
Millerbernd Manufacturing Co.	730B653 (Type AT45)
Millerbernd Manufacturing Co.	730B908 (Type B30)
Millerbernd Manufacturing Co.	730B909 (Type B45)
Millerbernd Manufacturing Co.	730B910 (Type MB45)
Union Metal Industries Corp.	71020-B2 - Rev. 5 (Type AT30)
Union Metal Industries Corp.	71020-B3 - Rev. 4 (Type B30)
Union Metal Industries Corp.	71019-B6 - Rev. 7 (Type AT45)
Union Metal Industries Corp.	71019-B7 - Rev. 4 (Types B45 & MB45)
Union Metal Industries Corp.	71019-B8 – Rev. 3 (Type B30)
Union Metal Industries Corp.	71019-B9 – Rev. 3 (Type B45)
Union Metal Industries Corp.	71019-B10 – Rev. 3 (Type MB45)
Union Metal Industries Corp.	71020-B103 – Rev. 3 (Type AT30)
Union Metal Industries Corp.	71020-B104 – Rev. 4 (Type AT45)
Valmont.....	DB00019 – Rev. N (Types AT30 & B30)
Valmont.....	DB00020 – Rev. N (Types AT45, B45 & MB45)

ALUMINUM POLES

DRAWING NUMBER

Valmont.....	MO-051707 (Type AT-30)
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MISSOURI DEPARTMENT OF TRANSPORTATION APPROVED PRODUCTS LIST

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.

BRACKET ARM MOUNT (120/277V)

LED-A	MODEL
American Electric Lighting (AEL)	ATB0-20BLEDE10-MVOLT-R3-3K-NL-NR
American Electric Lighting (AEL)	ATB0-20BLEDE10-MVOLT-R3-3K-NL-P7-SH**
Cree	BXSP1-HO-HT-3ME-100W-30K-UL-SV-UTL
Cree	BXSP1-HO-HT-3ME-100W-30K-UL-SV-R-UTL*
Eaton	ARCH-AF24-70-D-U-T3-7030-10K-K-AP
Eaton	ARCH-AF24-70-D-U-T3-7030-4N7-10K-K-AP-OA/RA1013**
LeoTek	GCJ2-20H-MV-WW-3-GY-1A-PCR7-WL-4B-SC
Philips/Lumec.....	RFM-72W32LED-3K-G2-R3M-UNV-DMG-SP1-API-GY3
Philips/Lumec.....	RFM-72W32LED-3K-G2-R3M-UNV-DMG-RCD7-PH9-SP1-API-GY3**
Solar Max	SMX-72WIE-NV-LV2-00-3070-T302-P-10**

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

LED-B	MODEL
American Electric Lighting (AEL)	ATBM-P30-MVOLT-R3-4 BOLT-3K-GRAY-NL-NR
American Electric Lighting (AEL)	ATBM-P30-MVOLT-R3-4 BOLT-3K-GRAY-NL-P7-SH**
American Electric Lighting (AEL)	ATB2-40BLEDE10-MVOLT-R3-3K-NL-HK-NR

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American Electric Lighting (AEL)	ATB2-40BLEDE10-MVOLT-R3-3K-NL-HK-P7-SH**
Cree	BXSP2-HO-HT-3ME-165W-30K-UL-SV-UTL
Cree	.....	BXSP2-HO-HT-3ME-165W-30K-UL-SV-R-UTL*
Eaton	.....	ARCH-M-AF48-130-D-U-T3-7030-10K-K-AP
Eaton	.....	ARCH-M-AF48-130-D-U-T3-7030-4N7-10K-K-AP-OA/RA1013**
GE	.....	ERLH-0-15-C3-30-D-GRAY-G-R**
Philips/Lumec	.....	RFL-145W64LED-3K-G2-R3M-UNV-DMG-SP1-API-GY3
Philips/Lumec	.....	RFL-145W64LED-3K-G2-R3M-UNV-DMG-RCD7-PH9-SP1-API-GY3**
Solar Max	.....	SMX-115WIE-NV-LV2-00-3070-T302-P-10**

* ANSI C136.41 7-pin receptacle included

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

LED-C MODEL

American Electric Lighting (AEL)	.....	ATB2-60BLEDE10-MVOLT-R3-3K-NL-NR
American Electric Lighting (AEL)	.....	ATB2-60BLEDE10-MVOLT-R3-3K-NL-P7-SH**
GE	.....	ERL2-0-21-C3-30-D-GRAY-G-R**
Holophane	.....	MGLEDM P2 30K MVOLT NR VH GRSD NL
Holophane	.....	MGLEDM P2 30K MVOLT NR VH GRSD NL PR7 SH**
Philips/Lumec	.....	RFL-180W80LED-3K-G2-R3M-UNV-DMG-SP1-API-GY3
Philips/Lumec	.....	RFL-180W80LED-3K-G2-R3M-UNV-DMG-RCD7-PH9-SP1-API-GY3**
Solar Max	.....	SMX-190WIE-NV-LV2-00-3070-T302-P-10**

* ANSI C136.41 7-pin receptacle included

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

BRACKET ARM MOUNT (480V)

LED-A MODEL

American Electric Lighting (AEL)	.....	ATB0-20BLEDE10-480-R3-3K-NL-NR
American Electric Lighting (AEL)	.....	ATB0-20BLEDE10-480-R3-3K-NL-P7-SH**
Cree	.....	BXSP1-HO-HT-3ME-100W-30K-UH-SV-UTL
Cree	.....	BXSP1-HO-HT-3ME-100W-30K-UH-SV-R-UTL*
Eaton	.....	ARCH-AF24-70-D-8-T3-7030-10K-K-AP
Eaton	.....	ARCH-AF24-70-D-8-T3-7030-4N7-10K-K-AP-OA/RA1013**
Leotek	.....	GCJ2-20H-HV-WW-3-GY-1A-PCR7-WL-4B-SC
Philips/Lumec	.....	RFM-72W32LED-3K-G2-R3M-HVU-DMG-SP1-API-GY3
Philips/Lumec	.....	RFM-72W32LED-3K-G2-R3M-HVU-DMG-RCD7-PH9-SP1-API-GY3**
Solar Max	.....	SMX-72WIE-HV-LV2-00-3070-T302-P-10**

* ANSI C136.41 7-pin receptacle included

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

LED-B MODEL

American Electric Lighting (AEL)	ATBM-P30-480-R3-4 BOLT-3K-GRAY-NL-NR
American Electric Lighting (AEL)	ATBM-P30-480-R3-4 BOLT-3K-GRAY-NL-P7-SH**

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American Electric Lighting (AEL)	ATB2-40BLEDE10-480-R3-3K-NL-NR
American Electric Lighting (AEL)	ATB2-40BLEDE10-480-R3-3K-NL-P7-SH**
Cree	BXSP2-HO-HT-3ME-165W-30K-UH-SV-UTL
Cree	BXSP2-HO-HT-3ME-165W-30K-UH-SV-R-UTL*
Eaton	ARCH-M-AF48-130-D-8-T3-7030-10K-K-AP
Eaton	ARCH-M-AF48-130-D-8-T3-7030-4N7-10K-K-AP-OA/RA1013**
GE	ERLH-5-15-C3-30-D-GRAY-G-R**
Philips/Lumec.....	RFL-145W64LED-3K-G2-R3M-HVU-DMG-SP1-API-GY3
Philips/Lumec.....	RFL-145W64LED-3K-G2-R3M-HVU-DMG-RCD7-PH9-SP1-API-GY3**
Solar Max	SMX-115WIE-HV-LV2-00-3070-T302-P-10**

* ANSI C136.41 7-pin receptacle included

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

LED-C MODEL

American Electric Lighting (AEL)	ATB2-60BLEDE10-480-R3-3K-NL-NR
American Electric Lighting (AEL)	ATB2-60BLEDE10-480-R3-3K-NL-P7-SH**
GE	ERL2-5-21-C3-30-D-GRAY-G-R**
Holophane.....	MGLEDM P2 30K MVOLT NR VH GRSD NL
Holophane.....	MGLEDM P2 30K MVOLT NR VH GRSD NL PR7 SH**
Philips/Lumec.....	RFL-180W80LED-3K-G2-R3M-HVU-DMG-SP1-API-GY3
Philips/Lumec.....	RFL-180W80LED-3K-G2-R3M-HVU-DMG-RCD7-PH9-SP1-API-GY3**
Solar Max	SMX-190WIE-HV-LV2-00-3070-T302-P-10**

* ANSI C136.41 7-pin receptacle included

** ANSI C136.41 7-pin receptacle with shorting cap 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.

BRACKET ARM MOUNT – 150 WATT

MODEL

American Electric Lighting	115 Series
American Electric Lighting	Durastar 2000, Series 30
Crouse-Hinds/Cooper	OVZ Series
Crouse-Hinds/Cooper	OVX Series
General Electric (GE).....	M2RR Series
Holophane.....	Mongoose Series

BRACKET ARM MOUNT - 250 WATT

MODEL

American Electric Lighting	115 Series
American Electric Lighting	Durastar 2000, Series 30
Crouse-Hinds/Cooper	OVZ Series
Crouse-Hinds/Cooper	OVX Series
General Electric (GE).....	MSRL Series
Holophane.....	Mongoose Series

MISSOURI DEPARTMENT OF TRANSPORTATION APPROVED PRODUCTS LIST

BRACKET ARM MOUNT - 400 WATT

MODEL

American Electric Lighting	125 Series
American Electric Lighting	Durastar 2000, Series 30
Crouse-Hinds/Cooper	OVX Series
General Electric (GE)	MSRL Series
Holophane	Mongoose Series

HIGH MAST LIGHTING

MODEL

NOTE: High mast lighting is custom designed for the location. Fixtures from the following manufacturer's series are considered pre-approved.

Cooper	HMC Series
General Electric (GE)	HMA Series
Holophane	HMAO Series
Holophane	HMS Series
Metrolux	VA Series

POLE TOP MOUNTING

MODEL

Holophane	HL2A Series
Holophane	Mongoose Series

SIGN LIGHTING - 250 WATT

MODEL

General Electric (GE)	V2FN Series
Guth	B17632 Series
Holophane	PANL Series
Holophane	SNVW Series

SIGN LIGHTING - 400 WATT

MODEL

Holophane	PANL Series
Holophane	SNVW Series

UNDERPASS (WALLPACKS)

MODEL

American Electric Lighting	582 Series
Cooper	WPK Series
General Electric (GE)	WAL Series
Holophane	MDWP Series
Holophane	WL2K Series
Hubbell	PGM-150S Series

CONTROL EQUIPMENT

CONTACTORS-ELECTROMECHANICAL

MODEL

Square D	Type S
Westinghouse/Cutler-Hammer	A202 Series

CONTACTORS-MERCURY

MODEL

**MISSOURI DEPARTMENT OF TRANSPORTATION
APPROVED PRODUCTS LIST**

Dayton/Duracool	6A/6X Series
Magnecraft	WM Series

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 six-month evaluation as described above to be added to the list.

Cleveland Switchboard
Coxline
Hoffman
Shallbetter
Inland Technologies

MOUNTING SOCKET FOR PHOTOELECTRIC CONTROL MODEL

NOTE: Mounting sockets require a six-month evaluation.

American Electric Lighting	DUR
Fischer-Pierce	S476-71
General Electric (GE)	MB-PECTL

PHOTOELECTRIC CONTROL MODEL

TE Connectivity	SST-120 (120 volt)
TE Connectivity	SST-240 (240 volt)
TE Connectivity	SST-PV (120/240 volt)
American Electric Lighting	D120-1.0-STJ (Dark to Light) (120 volt)
American Electric Lighting	D124-1.0-STJ (120/240 volt)
American Electric Lighting	D240-1.0-STJ (240 volt)
American Electric Lighting	DE480-1.0-TJ (480 volt)
Fischer-Pierce	FPN7790B (105 – 285 volt)
Fischer-Pierce	FPN7772 (195 – 305 volt)
Fischer-Pierce	FPN7794 (480 volt)
Fischer-Pierce	FPN7760 (120 volt)
General Electric (GE)	PEC01TL (>120v/< 305v w/ time delay)
General Electric (GE)	PEC1TL (120v)
General Electric (GE)	PEC5TL (480v)
ITT	SAT-15
Tyco	6190 VPS

TYPE A CIRCUIT BREAKERS MODEL

Square D	BDL Series
Westinghouse/Cutler-Hammer.....	EHD Series (1-Pole)
Westinghouse/Cutler-Hammer.....	FDB Series (2-Pole)

MISCELLANEOUS

AVIATION LIGHTING MODEL

Hughey & Philips.....	KG114
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MISSOURI DEPARTMENT OF TRANSPORTATION APPROVED PRODUCTS LIST

FUSED SLIP CONNECTORS

MODEL

NOTE: *Slip connectors require a six-month evaluation.*

BussmannHEB-JW-RYC

METER SERVICE PEDESTAL (LIGHTING)

MODEL

Milbank 4-Circuit 240V Lighting.....CP3B51C1PBAOMO3
 Milbank 4-Circuit 480V Lighting.....CP3B51D1PBAOMO1
 Milbank 4-Circuit 480V Lighting (used for Ameren cold sequence).....CP3B51D1PBAOMOCS1
 Pacific Utility Products 4-Circuit 240V Lighting.....USP24-M2100-100-MODOT6
 Pacific Utility Products 4-Circuit 480V Lighting.....USP16-M2100-100-MODOT
 Pacific Utility Products 4-Circuit 480V Lighting.....USP24-M2100-100-MODOT6-480

NAVIGATION LIGHTING

MODEL

TidelandML-140 with TF-3AC Lamp Changer
 Pharos Marine Automatic Power, Inc.....FA-143

SPLICE KITS

MODEL

3M82A1 (Single)
 3M82A2 (Single)
 3M82B1 (Three Way)
 3M82B2 (Three Way)
 HOMAC HMC Industries.....RAB 1/0 Series

TRANSFORMER BASES

MODEL

Akron Foundry.....TB1-17H (for AT30)
 Akron Foundry.....TB3-17H (for AT45)

MISSOURI DEPARTMENT OF TRANSPORTATION APPROVED PRODUCTS LIST

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	FA-100-DS Series E2
Westinghouse	WFDN 100

PREFORMED PULL BOX-CLASS 1

MODEL

Straight

Armorcast Products Company	A6001640TAPCX22 (Box & Lid)
Carson Industries	H1730-24 (Box)
CDR	A14-1730 series-22" (Box & Lid)
Composite Industries	CI183024PB1P
Highline	PHA173024HO1R
.....	H1730-PI (Lid)
Martin Enterprises	173022PC
Strongwell/Quazite	PG1730B532 (Box)
	PG1730H511 (Lid)
	PG1730BA Series
Synertech	S1730B24AA (Box)
	S1730HBB0A (Lid)

Flared

Armorcast Products Company	A6001640TAX24 (Box & Lid)
CDR	A12-1730 series-22" (Box & Lid)
Highline	CHA173024HO1R
Martin Enterprises	1730/22 FRP
NewBasis	FCA173022CC4126-62 (Box & Lid)
NewBasis	FCA173022CC4749-61 (Box & Lid)
NewBasis	FCA173024T Series (Box & Lid)
Pencell Plastics	PEM-1830-PCX (Box & Lid)

PREFORMED PULL BOX-CLASS 2

MODEL

Straight

Armorcast Products Company	A6001974TAPCX26 (Box & Lid)
Armorcast Products Company	A6001974TAPCX24
Carson Industries	H2436-24 (Box)
.....	H2436-PI (Lid)
CDR	A14-2436 series-24" (Box & Lid)
Composite Industries	CI243624PB1P
Highline	PHA243624HO1R
Martin Enterprises	243624PC
Strongwell/Quazite	PG2436B539 (Box)
	PG2436H508 (Lid)
	PG2436BA Series
Synertech	S2436B26AA (Box)
	S2436HCB0A (Lid)

MISSOURI DEPARTMENT OF TRANSPORTATION APPROVED PRODUCTS LIST

PREFORMED PULL BOX-CLASS 2

Flared

	MODEL
Armorcast Products Company	A6001974TAX26 (Box & Lid)
Armorcast Products Company	A6001974TAX24
CDR	A12-2436 series-24" (Box & Lid)
Highline	CHA243624HO1R
Martin Enterprises	2436/24 FRP
NewBasis	FCA243630CC4126-61 (Box & Lid)
NewBasis	FCA243630CC4749-61 (Box & Lid)
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

Straight

	MODEL
Armorcast Products Company	A6001430TAPCX36 (Box & Lid)
Carson Industries	H3048-36 (Box)
.....	H3048-P1 (Lid)
CDR	A14-3048 series-36" (Box & Lid)
Composite Industries	CI304836PB1P
Highline	PHA304836HO1R
Martin Enterprises	304836PC
Strongwell/Quazite	PG3048B560 (Box)
.....	PG3048H517 (Lid)
.....	PG3048BA Series
Synertech	S3048B36AA (Box)
.....	S3048HCB0A (Lid)

Flared

Armorcast Products Company	A6001550TAX36 (Box & Lid)
CDR	A12-3048-series 36" (Box & Lid)
Highline	CHA304836HO1R
Martin Enterprises	3048/36 FRP
NewBasis	FCA304836EE4749-61 (Box & Lid)
NewBasis	FCA304836T Series (Box & Lid)
Pencell Plastics	PEM-3048-36-PCX-SPLIT (Box & Lid)

PREFORMED PULL BOX-CLASS 5

Flared

	MODEL
Armorcast Products Company	A6001466TA (Box & Lid)
Armorcast Products Company	A6000172TAX36 (Box & Lid)
CDR	A12-3200 series-36" (Box & Lid)
Highline Products	CRA3236H01
Martin Enterprises	320036 FRP
NewBasis	FCA320036T Series
NewBasis	FCA540036C4800 (Box & Lid)
NewBasis	FCA540036C40336 (Box & Lid)
NewBasis	FCA540036-MODOT
Quazite	PR3944Z504

MISSOURI DEPARTMENT OF TRANSPORTATION APPROVED PRODUCTS LIST

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.

MISSOURI DEPARTMENT OF TRANSPORTATION APPROVED PRODUCTS LIST

VI. HIGHWAY SIGNING EQUIPMENT

BREAKAWAY DEVICES

MANUFACTURER	DESCRIPTION, MODEL
Ultimate Highway Products	Triangular Slip Base for 2.5" PSST, Slip-Mate
Xcessories Squared	Kleen Break 425 for 2" PSST, XKB42520-G
Xcessories Squared	Kleen Break Surface Mount 425 for 2" PSST, XKBSM42520-G
Xcessories Squared	Redi-Torque 280 for 2.5" PSST, SB8C-250A-G
Xcessories Squared	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	S-Q 8" Square Slipbase for 2.5" PSST, 31209
Designovations, Inc	Snap n Safe S200 and S200S (2")
Designovations, Inc	Snap n Safe S250 and S250 S (2.5")
Dent Breakaway Industries, Inc	3/4" Dent Bolt, #6882
Dent Breakaway Industries, Inc	5/8" Dent Bolt, #6878
Dent Breakaway Industries, Inc	1/2" Dent Bolt, #6874
Dent Breakaway Industries, Inc	5/8" Ground Anchors (Galvanized)
Dent Breakaway Industries, Inc	5/8" Modified Dent Bolt, #6220
Dent Breakaway Industries, Inc	3/4" Modified Dent Bolt, #6882

FOUNDATIONS/ANCHORS

MANUFACTURER	DESCRIPTION, MODEL
None	None

SIGN HARDWARE

MANUFACTURER	DESCRIPTION, MODEL
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 Bar for Post Clamps, XAB750
Xcessories Squared	Aluminum Sign Backer Bar, ASB200P1
Xcessories Squared	Extruded Panel Clamp for 2" PSST, EPPCS200SQ
Xcessories Squared	Extruded Panel Clamp for 2.5" PSST, EPPCS250SQ
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	Extruded Panel Clamp for 6x6 Wood, EPPCS66W

MISSOURI DEPARTMENT OF TRANSPORTATION APPROVED PRODUCTS LIST

SIGNS

MANUFACTURER

DESCRIPTION, MODEL

Tapco Blinkersigns

**MISSOURI DEPARTMENT OF TRANSPORTATION
APPROVED PRODUCTS LIST – RECENT REVISIONS**

TRAFFIC SIGNALS AND HIGHWAY LIGHTING EQUIPMENT

RECENTLY ADDED:

II. TRAFFIC SIGNAL EQUIPMENT

CONTROLLERS

NEMA TS1 CONTROLLERS

MODEL

McCainATC eX2 NEMA
(Added March 2021)

SIGNAL HEADS

SIGNAL HEADS - POLY CONVENTIONAL

MODEL

North American Signal PTXOBB_0CB
(Added May 2020)

MISCELLANEOUS

LOOP SEALANTS

MODEL

PecoraNR-201
(Added March 2021)

III. HIGHWAY LIGHTING

No updates

IV. POWER SUPPLY EQUIPMENT AND PULL BOXES

No updates

VI. HIGHWAY SIGNING EQUIPMENT

No updates

**MISSOURI DEPARTMENT OF TRANSPORTATION
APPROVED PRODUCTS LIST – RECENT REVISIONS**

RECENTLY DELETED:

II. TRAFFIC SIGNAL EQUIPMENT

CONTROLLERS

NEMA TS1 CONTROLLERS	MODEL
Siemens	EPAC M52
<i>(Removed August 2021, item no longer manufactured)</i>	

MISCELLANEOUS

PEDESTAL BASES	MODEL
Component Products	CPI-BAS-1
Pelco	PB5340
Pelco	PB5341
<i>(Removed August 2021, materials do not meet specifications)</i>	

III. HIGHWAY LIGHTING

MISCELLANEOUS

FUSED SLIP CONNECTORS	MODEL
IDEAL	30-S2212
<i>(Removed August 2021)</i>	

IV. POWER SUPPLY EQUIPMENT AND PULL BOXES
No updates

VI. HIGHWAY SIGNING EQUIPMENT
No updates

**MISSOURI DEPARTMENT OF TRANSPORTATION
APPROVED PRODUCTS LIST – RECENT REVISIONS**

RECENTLY REVISED:

II. TRAFFIC SIGNAL EQUIPMENT

No updates

III. HIGHWAY LIGHTING

CONTROL EQUIPMENT

PHOTOELECTRIC CONTROL

MODEL

Area Lighting Research	SST-120 (120 volt)
Area Lighting Research	SST-240 (240 volt)
Area Lighting Research	SST-PV (120/240 volt)
<i>Changed to:</i>	
TE Connectivity	SST-120 (120 volt)
TE Connectivity	SST-240 (240 volt)
TE Connectivity	SST-PV (120/240 volt)
<i>(TE Connectivity purchased Area Lighting Research – March 2021)</i>	

TYPE A CIRCUIT BREAKERS

MODEL

Square D	FAL Series
<i>Changed to:</i>	
Square D	BDL Series
<i>(FAL Series is obsolete – March 2021)</i>	

IV. POWER SUPPLY EQUIPMENT AND PULL BOXES

No updates

VI. HIGHWAY SIGNING EQUIPMENT

No updates