

# ON-LINE GUIDE TO LUMINAIRE SUPPORTS

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## User's Guide

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## Introduction

The On-Line Guide to Luminaire Supports is a web-based content management system for luminaire support systems that was developed through a pooled-fund project championed by the Wyoming DOT. The web utility allows full viewing, submission, management, and reporting services to its users (e.g., State DOT personnel and construction contractors). The On-Line Guide to Luminaire Supports is one of six on-line guides maintained by the AASHTO-AGC-ARTBA Joint Committee on New Highway Materials Task Force 13 (TF13). AASHTO-ARTBA-AGC Task Force 13 (TF13) has been a strong force in the roadside safety industry for over 30 years. TF13 has accomplished its mission primarily by developing and publishing Guides that essentially serve as catalogs for all types of roadside hardware including guardrails, guardrail terminals, crash cushions, small sign supports, luminaire supports, bridge railings and transitions (<http://www.aashtotf13.org>). The homepage for the On-Line Guides is shown in Figure 1 and can be found online at <http://guides.roadsafellc.com/>.

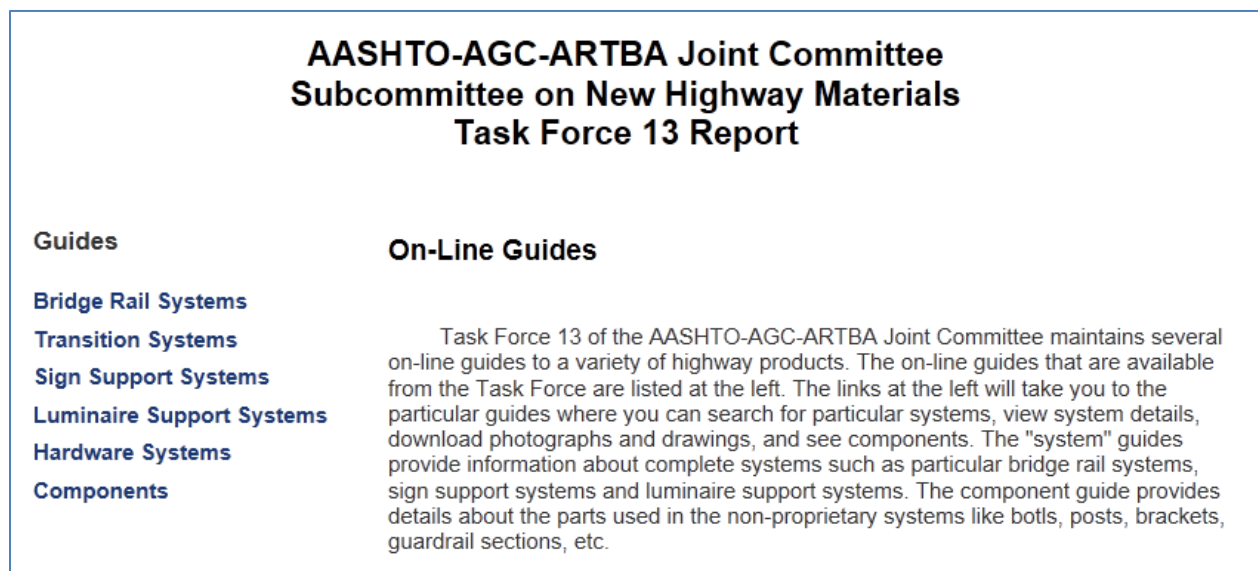


Figure 1. Homepage for the AASHTO-AGC-ARTBA Task Force 13 On-Line Guides to Highway Products.

The luminaire support systems included in the On-Line Guide have been successfully crash tested according to *NCHRP Report 350* or the Manual for Assessing Safety Hardware (*MASH*) and comply with the AASHTO Standard Specification for Structural Supports for Highway Signs, Luminaires and Traffic Signals. [Ross03; AASHTO09; AASHTO85] As such, all luminaire support system configurations included in the Guide are eligible for use on federally funded highways. A link to the appropriate FHWA Eligibility Letter (sometimes referred to as Acceptance Letter or Approval Letter) is included in the index listing for each system, but users may want to refer to the [FHWA website](#) for the most current information on a particular system.

This document is a tutorial on how to use the On-Line Guide to Luminaire Supports. It discusses the general layout of the Guide, the nomenclature for naming luminaire support systems and their components, and guidance on how to use the Guide for finding luminaire systems.

Some materials require third-party software to view the files. Files with the PDF extension require the free [Adobe Acrobat](#). AutoCAD files can be viewed with the free [DWG Viewer](#) or the free [ModelPress](#) software. Most video files should be readable by commonly installed software like the [Windows Media Player](#) or [RealPlayer](#) although sometimes a free driver might be required. Photographs are generally stored as JPG files which should be compatible with most web browsers. Every effort has been made to ensure the correctness of the drawings and specifications at the time of publication, but a designer wishing to use details in this Guide should contact the system or component manufacturers directly to verify the geometric and structural adequacy of the design.

## Content

The database currently includes more than 8,000 luminaire configurations, all of which meet the AASHTO “Standard Specification for Structural Supports for Highway Signs, Luminaires and Traffic Signals” and the FHWA eligible requirements for use on federally funded projects. The materials included in the Guide are provided by the manufacturers; thus not all of the FHWA approved systems are currently in the Guide, pending submission from manufacturers. To date, the Guide includes luminaire support systems corresponding to eleven FHWA Approval Letters, (i.e., LS- 15, LS-23, LS-27, LS-29, LS-32, LS-35, LS-45, LS-55, LS-64, LS-65 and LS-66). The information page for each luminaire support system configuration provides the system manufacturer, luminaire base manufacturer, FHWA approval letter number, material type, base type, test specification, crash test level, mounting height, type of arm, arm length, bolt-circle diameter, and pole dimensions. Also included on the information page are the system drawings, photographs, and links to the detailed component pages for each individual component of the system.

## FHWA Eligibility

All roadside safety devices, including luminaire supports, installed on Federal-Aid Projects are required to meet the current crash test requirements adopted by the FHWA. The first test procedures were documented in the 1985 AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals. [AASHTO85] The test criteria for luminaire supports were essentially unchanged in the 1993 NCHRP Report 350 crash test procedures [Ross03] and thus all luminaire testing done between 1985 and 1993 was considered acceptable under NCHRP Report 350. The current crash test guidelines were published in the AASHTO 2009 *Manual for Assessing Safety Hardware (MASH)*. [AASHTO09]

Until the acceptance of *MASH*, the test criteria were based on “stub height” and occupant impact velocity (i.e., computed based on vehicle velocity change), both of which could be determined via pendulum testing. The new procedures maintain these same evaluation criteria for the small car, which

have been unchanged since the 1985 testing guidelines; however, new criteria regarding windshield damage and roof-crush have been added in *MASH* which cannot readily be evaluated via simple pendulum tests. Thus, at-least one full-scale test must be conducted with the test vehicles mandated in *MASH* (i.e., 1100-kg sedan, 2270-kg pickup, or both) in order to qualify for FHWA eligibility.[AASHTO09]

## Units

Dimensions in the drawings are given in both inches and millimeters, with the millimeter measurement in brackets. For example, a height of 30 inches (762 millimeters) is labeled as 30 [760]. In general, unit conversions and rounding conform to the recommendations in the “Guide to Metric Conversions” [AASHTO93].

## Nomenclature

The naming convention used in the *On-Line Guide* is designed to establish a unique name for each luminaire support system and its associated components. The nomenclature is determined according to the category, function, type of the component or system and, indirectly, according to the manufacturer. In some cases additional nomenclature will be used to denote specific variations of a system or component, such as the length, diameter and thickness of a particular luminaire pole. The nomenclature system used for the luminaire guide is similar in structure that used in all the other TF13 on-line guides.

## Components

Components are named according to category, function and type. Valid designators for luminaire components are shown in Table 1. The nomenclature consists of three uppercase letters (e.g., LAC01de), two digits ((e.g., LAC01de), and optional alphanumeric characters to further describe the component (e.g., LAC01de). This nomenclature is consistent with style used in the other Guides and easily integrates into the On-Line Guide to Components.

The first letter in the component name identifies the category of the component (i.e., Fastener, Post, Rail, or Luminaire), the next letter denotes the function of the component, (e.g., Pole, Base or Arm) and the third letter provides another level of detail about the component. The next two digits in the nomenclature further identify the component by indicating the order in which the component was entered into the Guide. For example, LAC01de is the first entry of an aluminum cross arm into the Guide. These designators also serve to indirectly associate the component with a specific manufacturer, and/or a specific make and model of the component. For example, LPA01 and LPA02 are both aluminum poles and, in this case, both made by the same manufacturer; however, LPA01 is a smooth, round, tapered pole whereas LPA02 is a fluted, straight, decorative pole.

The first five characters (e.g., LAC01), therefore, denote the general component name. Additional nomenclature may be used to more clearly define variations of the component, such as variations in

dimensions or decorative styles. There is not, however, a separate component drawing for each variation. Rather, all components with the same prefix (e.g., LAC01) are included on the same drawing, which will be discussed in more detail later.

**Table 1. Nomenclature used for naming luminaire components.**

Category	Function	Type	Sequence No.
<u>L</u> uminaire (L)	<u>P</u> ole (P)	<u>A</u> luminum (A)	01-99
		<u>S</u> teel (S)	01-99
		<u>P</u> lastic (P)	01-99
		<u>C</u> omposite(C )	01-99
		<u>O</u> ther (O)	01-99
	<u>B</u> ase (B)	Breakaway <u>J</u> oint (J)	01-99
		<u>S</u> hoebase (S)	01-99
		<u>T</u> ransformer (T)	01-99
		Direct <u>B</u> uried (B)	01-99
		<u>C</u> oupling (C )	01-99
	<u>A</u> rm (A)	<u>D</u> avitt (D)	01-99
		<u>M</u> ast (M)	01-99
		<u>T</u> russ (T)	01-99
		<u>C</u> ross (C )	01-99
		Teno <u>N</u> (N)	01-99

Figure 2, Figure 3, and Figure 4 illustrate the basic naming convention for luminaire base components, pole components and arm components, respectively. In most cases, luminaire base components can be uniquely defined using the general component name (i.e., the five primary designators). For luminaire poles, on the other hand, additional nomenclature is needed to more clearly define its many dimensions (e.g., length, butt diameter, top diameter, wall thickness, straight, tapered, fluted, etc.), as shown in Figure 3; where, for example, LPA01-20-7-4-5 is an aluminum pole that is 20 feet tall, with a base diameter of 7 inches, a top diameter of 4 inches, and a wall thickness of 5/32 inch (0.156 inch). This conforms to the way most manufacturers tend to specify their pole products.

Similarly, with regard to luminaire arm components, additional nomenclature is used to define arm length and/or arm style. For example, if the arm component is a cross arm, the next designator will indicate is it is a double-arm (d), triple-arm (t) or quad-arm (q). Then if there are variations of this component with regard to length or style, additional nomenclature will be used to denote it, as further



illustrated in Figure 5. If, however, the arm component is a mast, davit, or truss then the next designator will indicate the standard arm length, as defined in Figure 4. These designations also conform to the way most manufacturers tend to specify their arm products.

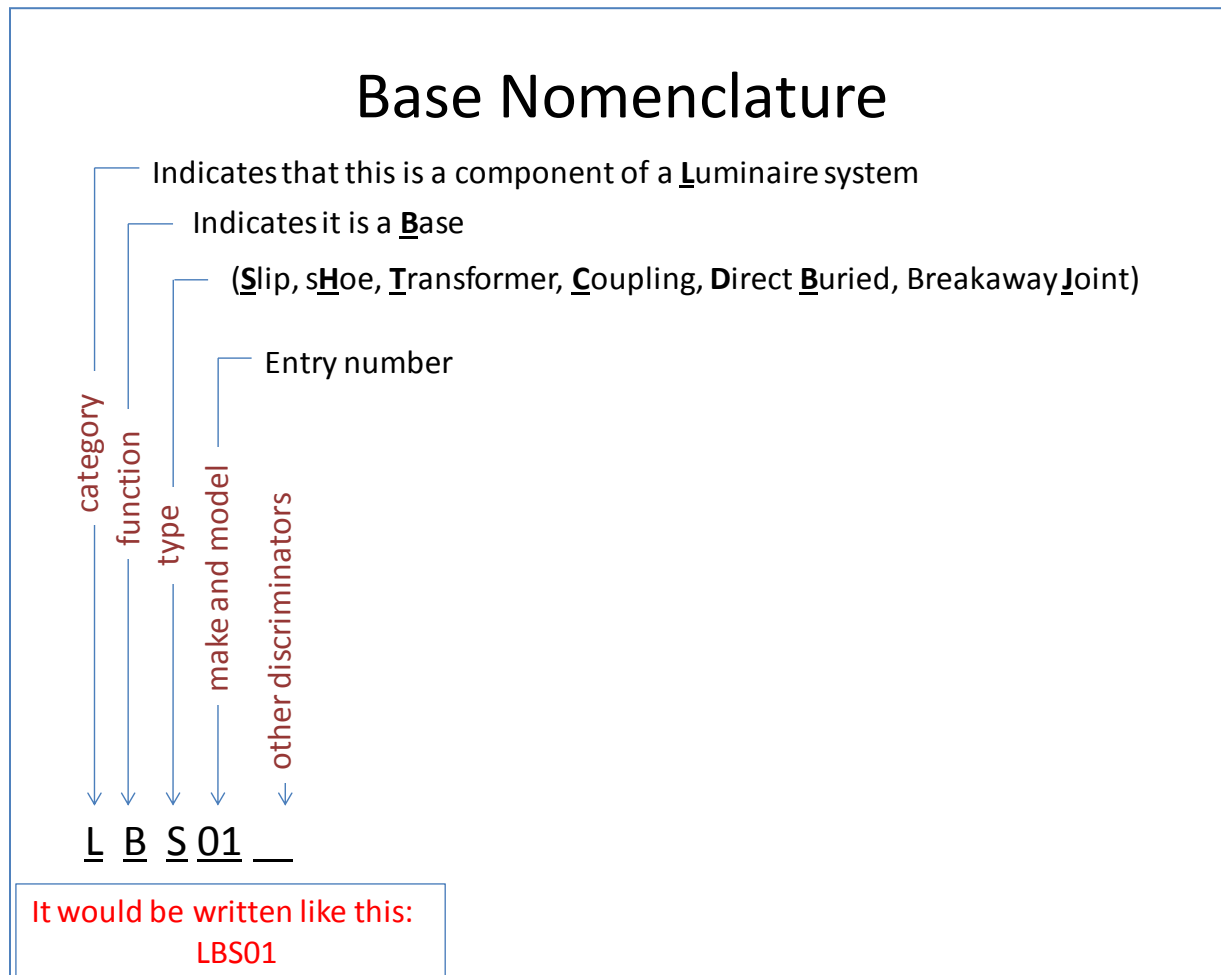
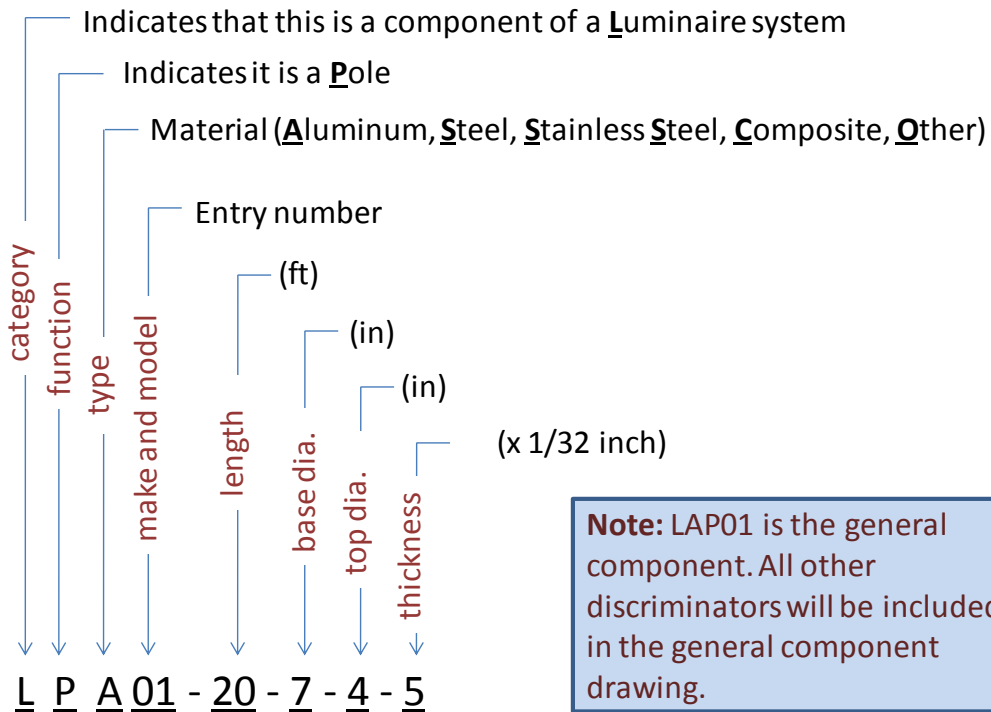


Figure 2. Naming convention for luminaire base components.

# Pole Nomenclature



**Note:** LAP01 is the general component. All other discriminators will be included in the general component drawing.

It would be written like this:  
LPA01-20-7-4-5

Figure 3. Naming convention for luminaire pole components.

# Arm Nomenclature

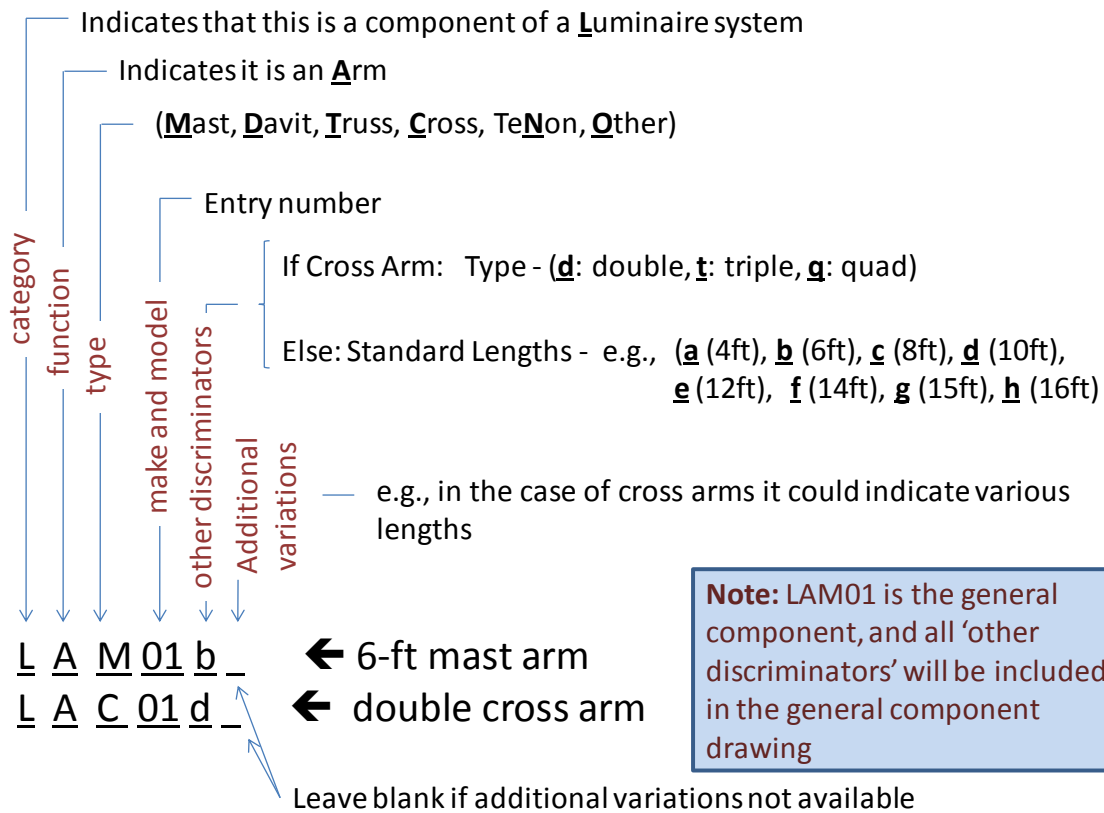


Figure 4. Naming convention for luminaire arm components.

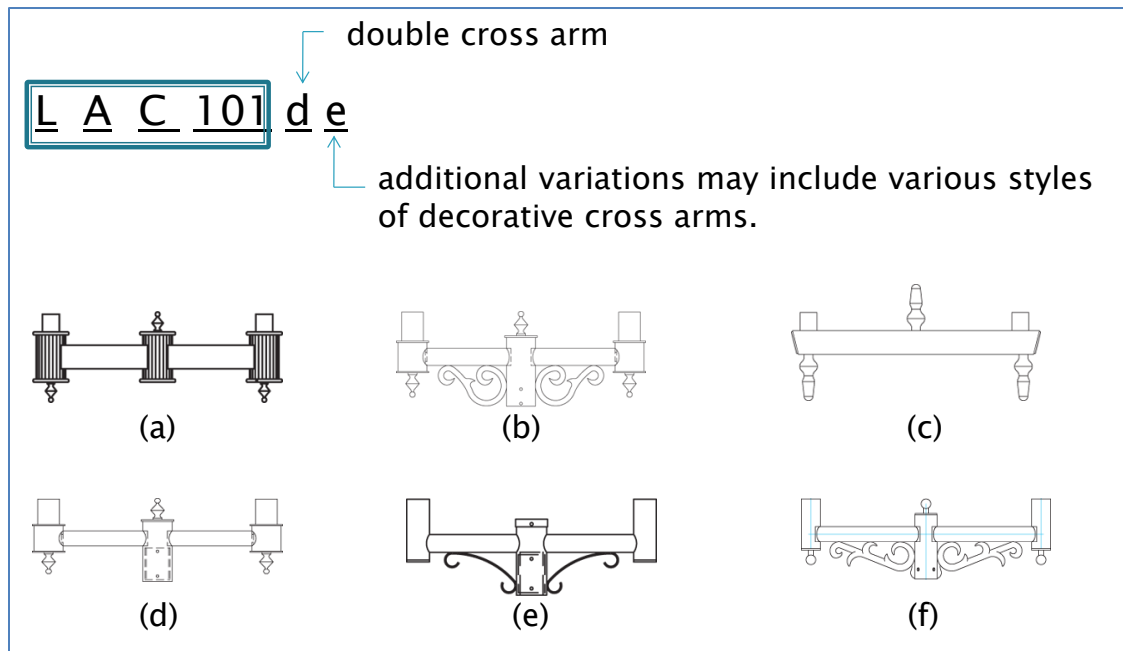


Figure 5. Example of naming convention for a double cross arm with multiple design options.

## Systems

There are two basic naming conventions for luminaire systems in this Guide: one that denotes the *general system name* and another that denotes the *specific system name*. A specific system refers to a specific luminaire base, pole and arm configuration of a general system that meets FHWA eligibility for use on Federally funded projects.

### General Systems Nomenclature

The nomenclature for *general systems* includes five alphanumeric characters, as defined in Table 2 and illustrated in Figure 6. All *system* designators in the TF13 Guides begin with the letter **S**. The second letter identifies the type of system, where **L** denotes a luminaire system. For all luminaire systems, the third letter indicates the type of base that is used, while the last two numeric digits denote the sequence in which a luminaire system with this general base type was entered into the Guide. For example, the general system name SLH01 represents the first entry (**01**) of a **L**uminaire **s**Hoebase system into the Guide. The information provided on the *general systems* webpages include a summary of the *full range* of system configurations encompassed within the FHWA eligibility letter. More details on the *General Systems* pages will be discussed in a later section.

### Specific Systems Nomenclature

The nomenclature for the *specific systems*, on the other hand, is intended to provide key information that sufficiently and uniquely defines each configuration of the parent *general system*. The

system nomenclature includes mounting height, base component, pole component with specific dimensions, arm component with additional descriptors, and number of arms, where, for example:

- The first letter denotes that the name corresponds to a **S**ystem and the second identifies the type of system, such as **L**uminaire (**SL20/H01/A01-7-4-5/M01b2**).
- The following two numbers define the mounting height of the system (feet) (**SL20/H01/A01-7-4-5/M01b2**).
- The next three alphanumeric characters specify the base component name (**SL20/H01/A01-7-4-5/M01b2**).
- The next three alphanumeric characters specify the general pole component name (**SL20/H01/A01-7-4-5/M01b2**).
- The following three numbers define the pole's base diameter (inches), top diameter (inches), and wall thickness (32<sup>nd</sup> of an inch) (**SL20/H01/A01-7-4-5/M01b2**).
- The next four alphanumeric characters define the arm component name (**SL20/H01/A01-7-4-5/M01b2**).
- The last number defines the number of arms (**SL20/H01/A01-7-4-5/M01b2**).

Figure 7 provides a more detailed annotation of the nomenclature for *Specific Systems* in the Luminaire Support Guide. More details on the *Specific Systems* pages will be discussed in a later section.

**Table 2. Nomenclature used for General System names for Luminaires.**

Category	Type	Frangible Base	Sequence No.
<b>S</b> ystem (S)	<b>L</b> uminaire (L)	<b>S</b> lip (S)	01-99
		<b>S</b> Hoe (H)	01-99
		<b>T</b> ransformer (T)	01-99
		<b>C</b> oupling (C)	01-99
		Direct <b>B</b> uried (B)	01-99
		Breakaway <b>J</b> oint (J)	01-99
		<b>O</b> ther (O)	01-99

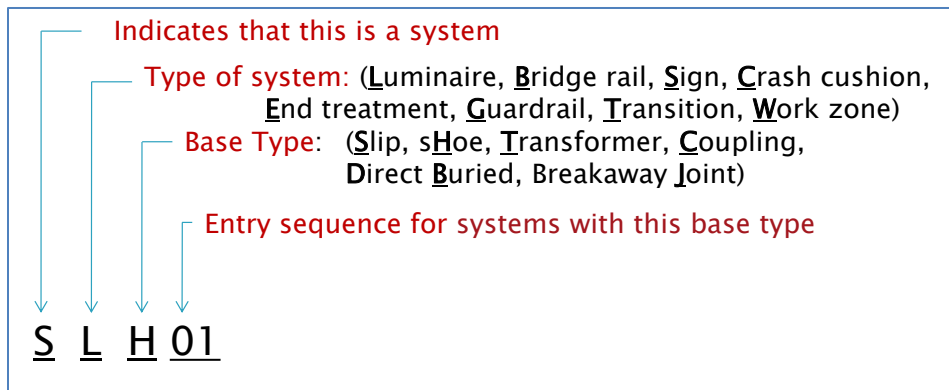


Figure 6. Naming convention for *General Systems* in the Luminaire Guide.

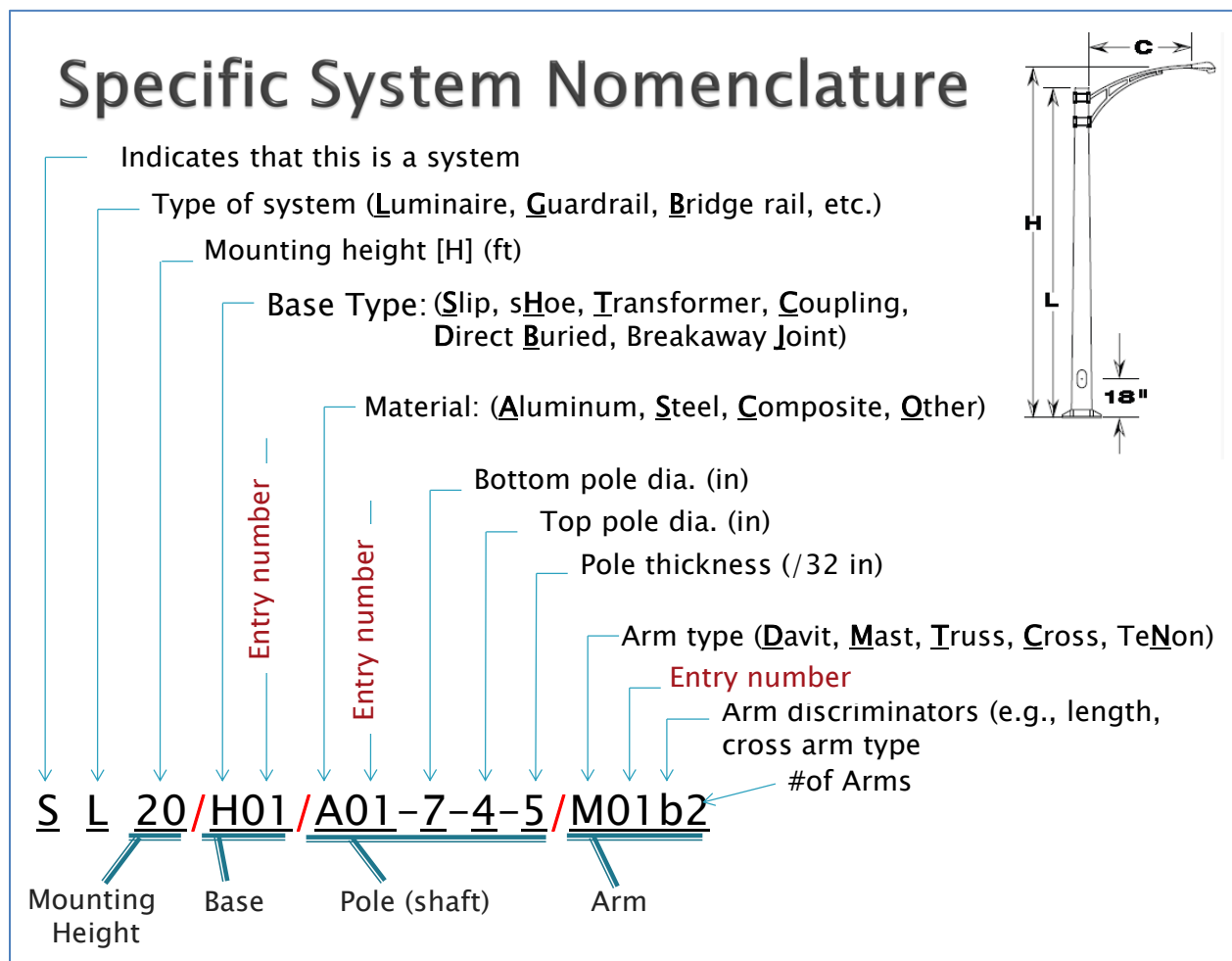


Figure 7. Naming convention for *Specific Systems* in the Luminaire Guide.

## Methods for Searching for Luminaire Support Systems

A portion of the home page for the On-Line Guide to Luminaire Supports is shown in Figure 8. A navigation menu is provided on the left side of the page, as well as links to the other AASHTO On-Line Guides. There are two ways to search for luminaire systems from the Navigation menu: (1) [Browse Luminaire Supports](#) and (2) [Search Luminaire Supports](#), which are both highlighted in Figure 8. An alternative option for finding luminaire supports is by their [associated components](#).

### Online Guide To Luminaire Supports

Navigation	Use
<a href="#">Luminaire Supports Home</a>	
<a href="#">Browse Luminaire Supports</a>	This web utility is a content management system for FHWA approved luminaire supports. The web utility will allow full viewing, submission, management, and reporting services to its users and the general public. The luminaire support systems shown in this guide are included here for review and informational purposes. <a href="#">Click here</a> to view systems that have been approved by the Task Force.
<a href="#">Search Luminaire Supports</a>	
<a href="#">Manufacturers/Contacts</a>	
<a href="#">About</a>	An index for the luminaire support guide is shown at upper left. Users may browse a list of all the systems in the guide or search for particular systems based on several pre-defined search criteria. Contact information for people and organizations that have submitted materials are shown in the contacts section. Some useful links and background information are shown in the Links and About sections respectively.
<a href="#">Links</a>	
<b>Other Guides</b>	
<a href="#">Bridge Rail Systems</a>	In general, all the luminaire support systems included in this Guide have been successfully crash tested according to NCHRP Report 350 or MASH and comply with the <a href="#">AASHTO Standard Specification for Structural Supports for Highway Signs, Luminaires and Traffic Signals</a> . A link to the appropriate FHWA approval letter or memorandum is included in the index listing for each system but users may want to refer to the <a href="#">FHWA website</a> for the most current information on a particular system.
<a href="#">Transition Systems</a>	
<a href="#">Sign Support Systems</a>	
<a href="#">Luminaire Support Systems</a>	Some materials require third-party software to view the files. Files with the PDF extension require the free <a href="#">Adobe Acrobat</a> . AutoCAD files can be viewed with the <a href="#">free DWG Viewer</a> or the <a href="#">free ModelPress</a> software. Most video files should be readable by commonly installed software like the <a href="#">Windows Media Player</a> or <a href="#">RealPlayer</a> although sometimes a free driver might be required. Photographs are generally stored as JPG files which should be compatible with most web browsers.
<a href="#">Hardware Systems</a>	
<a href="#">Components</a>	

Figure 8. On-Line Guide to Luminaire Supports home page.

The *Browse Luminaire Supports* option directs the user to a page which contains a list of all luminaire support systems contained in the Guides, denoted by their [general system name](#). The browse option provides a photo of each *general system*, along with other basic information, and thus provides a convenient means for a user to browse the various luminaire support designs in order to narrow their selection, for example, based on aesthetics or manufacturer. Of course, once a general system has been selected, the Guide will provide additional search criteria for identifying all available configurations of the system that meet user-specific design criteria, such as mounting height, bolt-circle diameter, arm type, etc. The *Search Luminaire Supports* option searches all systems in the database to find those that meet user-specified design criteria. This option does not provide thumbnail images; however, it does include all systems corresponding to specified design criteria in a single list. Alternatively, a user can search for luminaire systems directly from a component's webpage. Each of these methods is discussed in detail in the following sections.

## Browse Luminaire Supports

When the *Browse Luminaire Supports* option is selected, the user will be directed to a webpage with basic information about the systems, including the *general system* name, number of system configurations, a photograph of the system, the system manufacturer, the base component and manufacture, type of material the system is made from, and the FHWA eligibility letter number, as illustrated in Figure 9. For example, the first system listed on the Browse Luminaire Supports page is SLC01, which is an aluminum luminaire support system manufactured by HAPCO that uses the Precision Form LBC01 coupling base. The SLC01 has 601 different configurations of poles dimensions and arm types that correspond to the system accepted under FHWA eligibility letter LS-23.

The systems listed on the *Browse Page* can be resorted in ascending or descending order with respect to any of the table headings to facilitate the search process. For example, clicking on the heading “Base Component” will sort the systems in descending alphabetical order with respect to that heading; clicking on the same heading a second time will resort the systems in ascending alphabetical order with respect to that heading. The information in the table also includes links to other pages within the Guide that provide additional information about that particular aspect of the system. For example, clicking on the link for LBC01 directs the user to the LBC01 component page, or clicking on the link for SLC01 directs the user to the general system page for the SLC01 systems.

### Online Guide To Luminaire Supports

#### Navigation

[Luminaire Supports Home](#)  
[Browse Luminaire Supports](#)  
[Search Luminaire Supports](#)  
[Manufacturers/Contacts](#)  
[About](#)  
[Links](#)  
  
**Other Guides**  
[Bridge Rail Systems](#)  
[Transition Systems](#)  
[Sign Support Systems](#)  
[Luminaire Support Systems](#)  
[Hardware Systems](#)  
[Components](#)

#### Browse Generalized Luminaire Supports

Click on a column heading to arrange the list in order of that luminaire support characteristic.




Name	Photo	BaseComponent	Base Manufacturer	System Manufacturer	Material	FHWAAcceptanceLetter
SLC01 601 configuration (s).		LBC01 Coupling (C)	Precision Form	HAPCO	Aluminum	LS-23.pdf
SLC02 34 configuration (s).	No photo.	LBC02 Coupling (C)	Transpo Industries Inc.	Valmont Industries	Aluminum	LS-45.pdf
SLH01 95 configuration (s).		LBH01 Shoe (H)	HAPCO	HAPCO	Aluminum	LS-27.pdf
SLJ01 77 configuration (s).		LBJ01 Breakaway Joint (J)	HAPCO	HAPCO	Aluminum	LS-65.pdf

Figure 9. Example of luminaire system information displayed when the *Browse Luminaire Support* option is selected.



### **General System's Page**

When the link to a particular system name is selected from the Browse Luminaire Supports page, the user will be directed to a General System page that lists all the options for that system. The General System page provides a summary of the complete range of system variables that are encompassed by the FHWA eligibility letter. For example, Figure 10 shows the General System SLH01. The information on the SLH01 webpage shows that there are 95 different configurations of this shoe base system that meet the safety criteria of NCHRP Report 350 according to FHWA letter LS-27. The page lists the manufacturers of the luminaire support system and provides links to supplemental pages with contact information and a list of other systems developed by the manufacture. The General System page also includes photographs, drawings and other associated documents and images related to the luminaire support system.

Another important feature of the General System page is a search option that allows the user to search for configurations of that system that meet specific search criteria, including pole dimensions, bolt circle diameter, arm type, number of arms, and arm length, as shown in Figure 10. For example, in Figure 11 the SLH01 systems are searched to find luminaire support configurations with a 20 foot mounting height and two mast arms. In this case, four configurations were identified and additional descriptive information about each configuration is provided in table format.

### **Specific System's Page**

Selecting a system from the search results page (i.e., clicking on the system name) will direct the user to a page which provides a detailed description of the system, as shown in Figure 12; this page also echoes the search criteria. The information on this page includes test specifications, manufacturer catalog number, manufacturer name, system dimensions, a photo of each system component, link to each component page and system drawings.

## SLH01: General System

This page provides only general information about this system. To view the specific configurations of this system, use the search criteria at the bottom of this page. To search through specific configurations of all systems, please use the [Search Luminaires Supports](#) page.

Specific Configurations:	95 specific systems
Acceptance:	Submitted
FHWA Acceptance Letters:	LS-27.pdf
Test Specification:	Report 350
System Manufacturer:	HAPCO
Base Manufacturer:	HAPCO
Base Type:	Shoe (H)
Base Component:	LBH01
Arm Type:	Davit (D) Tenon (N) Cross (C) Mast (M) Truss (T)
Num. of Arms:	0, 1, 2, 3, 4 (arms)
Mounting Height:	20, 25, 30 (feet)
Base Diameter Range:	7.00 to 7.00 (inches)
Top Diameter Range:	4.50 to 7.00 (inches)
Wall Thickness of Pole:	0.156 to 0.188 (inches)
Contact:	<a href="#">Mr. Joe Bowman</a> (Click for details)



Drawings	Other Documents	Images
<ul style="list-style-type: none"> <li>SLH01.pdf</li> <li>SLH01.dwg</li> </ul>	<ul style="list-style-type: none"> <li>Test Report 72785 July 1 1992.pdf</li> <li>3-Second Gust Wind Map.pdf</li> <li>FHWA-Acceptance-Letter_LS-27.pdf</li> </ul>	<ul style="list-style-type: none"> <li>Thumbnail Gallery</li> </ul>

### Search Specific Configurations of SLH01

Pole/Mounting Height	<input type="text"/> Minimum	to	<input type="text"/> Maximum	ft
Pole Base Diameter	<input type="text"/> Minimum	to	<input type="text"/> Maximum	in
Pole Top Diameter	<input type="text"/> Minimum	to	<input type="text"/> Maximum	in
Pole Thickness	<input type="text"/> Minimum	to	<input type="text"/> Maximum	in
Bolt Circle Diameter	<input type="text"/> Any			
Arm Type	<input type="text"/> Any ArmType <input type="button" value="v"/>			
Number of Arms	<input type="text"/> Any			
Arm Length	<input type="text"/> Minimum	to	<input type="text"/> Maximum	in
<input type="button" value="Search"/>				

Figure 10. General System Page for SLH01.

## Search Specific Configurations of SLH01

Pole/Mounting Height  to  ft

Pole Base Diameter  to  in

Pole Top Diameter  to  in

Pole Thickness  to  in

Bolt Circle Diameter

Arm Type  ▼

Number of Arms

Arm Length  to  in

Click on a column heading to arrange the list in order of that luminaire characteristic.

Name/Designator	Mounting Height (ft)	Base Type	Material	Pole Base Dia. (in)	Pole Thickness (in)	Num. Arms	Arm Type	Arm Length (ft)
<a href="#">SL20/H01/A01-7-4.5-5/M01b2</a>	20	Shoe (H)	Aluminum	7.00	0.156	2	Mast (M)	6' 0"
<a href="#">SL20/H01/A01-7-4.5-5/M01c2</a>	20	Shoe (H)	Aluminum	7.00	0.156	2	Mast (M)	8' 0"
<a href="#">SL20/H01/A01-7-4.5-6/M01b2</a>	20	Shoe (H)	Aluminum	7.00	0.188	2	Mast (M)	6' 0"
<a href="#">SL20/H01/A01-7-4.5-6/M01c2</a>	20	Shoe (H)	Aluminum	7.00	0.188	2	Mast (M)	8' 0"

Figure 11. Example results from a search of the SLH01 systems that have a maximum mounting height of 20 ft and two mast arms.

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### SL20/H01/A01-7-4.5-6/M01b2 (SLH01)

Aluminum Shoe Base with 20 ft Mtg. Ht. and 2 Mast Arms

Acceptance:	Submitted	
Test Level:	TL-3	
Test Specification:	Report 350	
Manufacturer's Catalog #:	Not Provided	
System Manufacturer:	<a href="#">HAPCO</a>	
Base Manufacturer:	<a href="#">HAPCO</a>	
Base Type:	Shoe (H)	
Arm Type:	Mast (M)	
Arm Length:	6' 0" (feet)	
Num. of Arms:	2 (arms)	
Material:	Aluminum	
Mounting Height:	20 (feet)	
Bolt Circle Diameter:	10.00 to 11.00 (inches)	
Pole Length:	N/A	Not searchable.
Pole Base Diameter:	7.00 (inches)	
Pole Top Diameter:	4.50 (inches)	
Wall Thickness of Pole:	0.188 (inches)	Not searchable.
Contact:	<a href="#">Mr. Joe Bowman</a>	Not searchable.
Last Updated:	September 5, 2012	Not searchable.
FHWA Acceptance Letters:	<a href="#">Letter LS27</a>	Not searchable.





General System	Base Component	Pole Component	Arm Component
<b>SLH01</b> 	<b>LBH01</b> 	<b>LPA01-x-7-4.5-6</b> 	<b>LAM01b</b> 
<b>Drawings</b> <ul style="list-style-type: none"> <li>SLH01.pdf</li> <li>SLH01.dwg</li> </ul>		<b>Other Documents</b> <ul style="list-style-type: none"> <li>Test Report 72785 July 1 1992.pdf</li> <li>3-Second Gust Wind Map.pdf</li> <li>FHWA-Acceptance-Letter_LS-27.pdf</li> </ul>	

Figure 12. Webpage displaying details for luminaire support configuration SL20/H01/A01-7-4-5/M01b2.

## Search Luminaire Supports

The *Search Luminaire Supports* Option, located on the left hand side of the webpage in the Navigation List, allows the user to search through the entire database for luminaire support system configurations that meet specific search criteria. The search options included with this feature are shown in Figure 13, which include the search options shown previously on the *General System* page (refer to Figure 10), plus several additional search options including test specification, manufacture, material type, and base type. Using *Search Luminaire Supports* Option to search for systems based on the same search criteria specified in the previous example (refer to Figure 11) results in over 30 luminaire support configurations, as shown in Figure 14 (note that results are abridged). Included in this list is the subset of SLH01 systems that were identified in the previous search via the SLH01 General System page illustrated in Figure 11.

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**Search Luminaire Supports**  
Acceptance   
Test Specification   
System Manufacturer   
Base Manufacturer   
Material   
Base Type   
Pole/Mounting Height  to  ft  
Pole Base Diameter  to  in  
Pole Top Diameter  to  in  
Pole Thickness  to  in  
Bolt Circle Diameter  in  
Arm Type   
Number of Arms   
Arm Length  to    
**Show advanced search options**

Figure 13. *Search Luminaire Systems* page.

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### Search Luminaire Supports

Acceptance   
 Test Specification   
 System Manufacturer   
 Base Manufacturer   
 Material   
 Base Type   
 Pole/Mounting Height  to  ft  
 Pole Base Diameter  to  in  
 Pole Top Diameter  to  in  
 Pole Thickness  to  in  
 Bolt Circle Diameter  in  
 Arm Type   
 Number of Arms   
 Arm Length  to  Feet

Show advanced search options

[Search](#)

Click on a column heading to arrange the list in order of that luminaire support characteristic.

Name/Designator	System Manufacturer	Mounting Height (ft)	Base Type	Material	Pole Base Dia. (in)	Pole Thickness (in)	Num. Arms	Arm Type	Arm Length (ft)
SL20/T07/A03-7-4-6/M02b2	Valmont Industries	20	Transformer (T)	Aluminum	7.00	0.188	2	Mast (M)	6' 0"
SL20/T07/A03-7-4-5/M02c2	Valmont Industries	20	Transformer (T)	Aluminum	7.00	0.156	2	Mast (M)	8' 0"
SL20/T07/A03-7-4-6/M02c2	Valmont Industries	20	Transformer (T)	Aluminum	7.00	0.188	2	Mast (M)	8' 0"
SL20/T07/A03-7-4-6/M02b2	Valmont Industries	20	Transformer (T)	Aluminum	7.00	0.188	2	Mast (M)	6' 0"
SL20/T07/A03-7-4-6/M02c2	Valmont Industries	20	Transformer (T)	Aluminum	7.00	0.188	2	Mast (M)	8' 0"
SL20/T07/A03-7-4-5/M02b2	Valmont Industries	20	Transformer (T)	Aluminum	7.00	0.156	2	Mast (M)	6' 0"
SL20/T07/A03-7-4-5/M02c2	Valmont Industries	20	Transformer (T)	Aluminum	7.00	0.156	2	Mast (M)	8' 0"
SL20/T07/A03-7-4-5/M02b2	Valmont Industries	20	Transformer (T)	Aluminum	7.00	0.156	2	Mast (M)	6' 0"
SL20/H01/A01-7-4.5-6/M01b2	HAPCO	20	Shoe (H)	Aluminum	7.00	0.188	2	Mast (M)	6' 0"
SL20/H01/A01-7-4.5-6/M01c2	HAPCO	20	Shoe (H)	Aluminum	7.00	0.188	2	Mast (M)	8' 0"
SL20/H01/A01-7-4.5-5/M01b2	HAPCO	20	Shoe (H)	Aluminum	7.00	0.156	2	Mast (M)	6' 0"
SL20/H01/A01-7-4.5-5/M01c2	HAPCO	20	Shoe (H)	Aluminum	7.00	0.156	2	Mast (M)	8' 0"
SL20/C01/A01-6-4.5-5/M01c2	HAPCO	20	Coupling (C)	Aluminum	6.00	0.156	2	Mast (M)	8' 0"
SL20/C02/A03-7-4-5/M02c2	Valmont Industries	20	Coupling (C)	Aluminum	7.00	0.156	2	Mast (M)	8' 0"
SL20/C01/A01-6-4.5-6/M01c2	HAPCO	20	Coupling (C)	Aluminum	6.00	0.188	2	Mast (M)	8' 0"
SL20/C01/A01-7-4.5-5/M01b2	HAPCO	20	Coupling (C)	Aluminum	7.00	0.156	2	Mast (M)	6' 0"
SL20/C02/A03-7-4-6/M02b2	Valmont Industries	20	Coupling (C)	Aluminum	7.00	0.188	2	Mast (M)	6' 0"
SL20/C01/A01-7-4.5-6/M01b2	HAPCO	20	Coupling (C)	Aluminum	7.00	0.188	2	Mast (M)	6' 0"
SL20/C01/A01-7-4.5-5/M01c2	HAPCO	20	Coupling (C)	Aluminum	7.00	0.156	2	Mast (M)	8' 0"
SL20/C02/A03-7-4-6/M02c2	Valmont Industries	20	Coupling (C)	Aluminum	7.00	0.188	2	Mast (M)	8' 0"

Subset of systems identified in previous example

Figure 14. Partial results using *Search Luminaire Supports* option to find systems with 20-ft mounting height and two mast arms.

## Advanced Search Criteria

Also included on the *Search Luminaire Supports* page is an *Advanced Search Option* which allows users to search for systems that include a specific base component, pole component, arm component, or any combination thereof. For example, a search for systems with a double cross-arm, a mounting height of 12-ft, and a bolt-circle diameter of 7 inches results in a relatively large number of configurations. However, if after reviewing the configurations, it was determined that a particular base type, arm type, and/or pole type was of interest, the search could be further refined to include only systems with those particular components. Figure 15 shows the results of using the advanced options to restrict the search to systems with base component LBT01, pole component LPA02 and arm component LAC02.

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**Search Luminaire Supports**

Acceptance:

Test Specification:

System Manufacturer:

Base Manufacturer:

Material:

Base Type:

Pole/Mounting Height:  to  ft

Pole Base Diameter:  to  in

Pole Top Diameter:  to  in

Pole Thickness:  to  in

Bolt Circle Diameter:  in

Arm Type:

Number of Arms:

Arm Length:  to


[Hide advanced search options](#)

Base Component Name:  (e.g., LBS99)


Pole Component Name:  (e.g., LPA99)

Arm Component Name:  (e.g., LAT99)

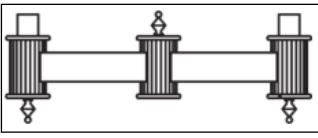
**LPA02**



**LBT01**



**LAC02**



Click on a column heading to arrange the list in order of that luminaire support characteristic.

Name/Designator	System Manufacturer	Mounting Height (ft)	Base Type	Material	Pole Base Dia. (in)	Pole Thickness (in)	Num. Arms	Arm Type	Arm Length (ft)
SL12/T01/A02-4-4-4/C02d	HAPCO	12	Transformer (T)	Aluminum	4.00	0.125	2	Cross (C)	3' 0"
SL12/T01/A02-5-4.1-4/C02d	HAPCO	12	Transformer (T)	Aluminum	5.00	0.125	2	Cross (C)	3' 0"
SL12/T01/A02-5-4.1-6/C02d	HAPCO	12	Transformer (T)	Aluminum	5.00	0.188	2	Cross (C)	3' 0"
SL12/T01/A02-5-5-4/C02d	HAPCO	12	Transformer (T)	Aluminum	5.00	0.125	2	Cross (C)	3' 0"
SL12/T01/A02-5-5-6/C02d	HAPCO	12	Transformer (T)	Aluminum	5.00	0.188	2	Cross (C)	3' 0"

Figure 15. Example of using the *Advanced Search Options* on the *Search Luminaire Supports* page.



## Search Based on Associated Components

As mentioned previously, detailed information pertaining to any component of a luminaire support system can be viewed by clicking on the component name on the luminaire system webpage (refer to Figure 12). The user is then directed to the component webpage which provides the manufacturer's name and contact information, a photo of the component, drawing files, other documents related to the component (e.g., brochures, FHWA eligibility letter, etc.), a link to the photo gallery, and a list of all the systems that utilize the component. For example, Figure 16 shows the information provided on the component webpage for component LBT07 (i.e., the Modified TB1-17 transformer base manufactured by Akron Foundry). Currently, no drawing files have been submitted for this component, but other documents are available, as well as photos of the component. At the lower, right-side of the page is a list of systems that use this component; in this case, luminaire support system SLT07. Clicking on the system name (e.g., SLT07) will direct the user to the webpage for the *general system*.

Alternatively, a user can search for components directly from the On-Line Guide to Components webpage by selecting "Components" under the "Other Guides" menu list shown on the lower-left-side of any webpage in the Guide (e.g., refer to Figure 16). This link directs the user to the home page for the components Guide, as shown in Figure 17.

The options and procedures for searching luminaire components are analogous to those for search luminaire support systems discussed earlier, that is via the *Browse Components* and *Search Components* links under the *Navigation* menu. The *Browse Components* option directs the user to a page which contains a list of all components contained in the Guides, as shown in Figure 18, and provides basic information about each one including the component name, a general description, a photo, and the Category/Function/Type designators (e.g., refer to the [Nomenclature](#) section of this tutorial).

The *Search Components* page provides four search options, as shown in Figure 19. The first three options are "relational" and thus must be entered in order. In other words, a component's *function* will depend on the *category* that is selected; likewise, the component *type* will depend on its *category* and *function* (refer to A simple example illustrating the search for luminaire transformer bases is shown in Figure 20 and Figure 21. When the search is executed, the Guide will display all the components that meet the search criteria, using the same format as was shown in Figure 18 from the *Browse Component* results.



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### Akron Foundry Modified TB1-17 Transformer Base (LBT07)

Category:	Luminaire (L)
Function:	Frangible Base (B)
Type:	Transformer (T)
Manufacturer:	Akron Foundry Company
Contact:	<a href="#">Robert A. Sik</a> (Click for details)
Last Updated:	August 26, 2010



Drawings	Other Documents	Images	Systems
No files found.	<ul style="list-style-type: none"><li>• <a href="#">Break_Trns_Brochure [1].pdf</a></li><li>• <a href="#">ls58.pdf</a></li></ul>	<ul style="list-style-type: none"><li>• <a href="#">Thumbnail Gallery</a></li></ul>	<b>Luminaire Systems</b> <ul style="list-style-type: none"><li>• SLT07</li></ul> <b>Sign Systems</b> <ul style="list-style-type: none"><li>• None</li></ul> <b>Transitions</b> <ul style="list-style-type: none"><li>• None</li></ul>

### Existing Comments

Click [here](#) to post a new comment.

There are no comments for this system yet.

Figure 16. Component webpage.

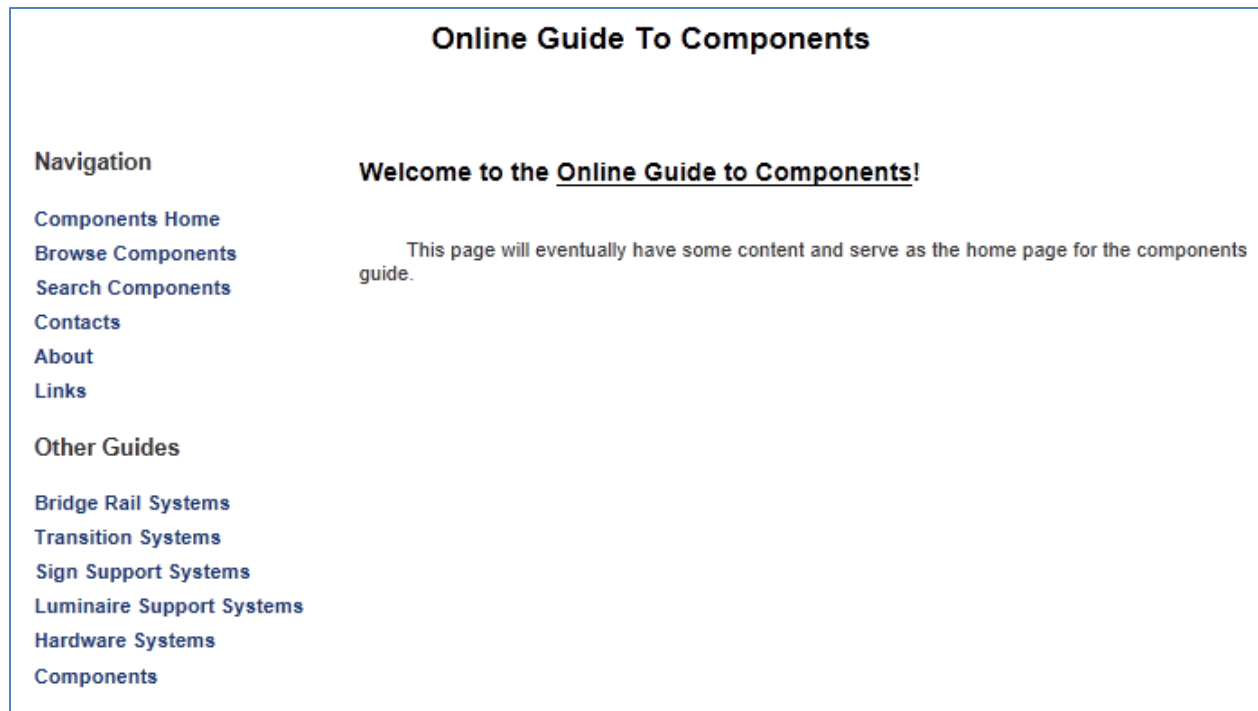


Figure 17. On-Line Guide to Components home page.

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### Browse Components

Click on a column heading to arrange the list in order of that component characteristic.

Name/Designator	Photo	Category	Function	Type	Manufacturer
<b>FBF01-05</b> Guardrail Bolt and Recessed Nut		Fastener (F)	Bolt (B)		
<b>FBX06a-24</b> Class 4.6 Hex Bolt and Nut		Fastener (F)	Bolt (B)	Hex (X)	
<b>FLS01</b> Dent Universal Base System		Fastener (F)	Plate (L)	Slipbase (S)	<b>Dent Breakaway Industries</b>
<b>FMA01</b> TRANSP0 Anchor		Fastener (F)	Misc Fastener (M)	Anchor (A)	<b>TRANSP0 Industries, Inc.</b>
<b>FMC01</b> SNAP'n SAFE Round Post Ground-Mount Coupler		Fastener (F)	Misc Fastener (M)	Coupling (C)	<b>Designovations</b>
<b>FMC02</b> SNAP'n SAFE Round Post Surface Mounted Coupler		Fastener (F)	Misc Fastener (M)	Coupling (C)	<b>Designovations</b>
<b>FMC03</b> SNAP'n SAFE U		Fastener (F)	Misc Fastener (M)	Coupling (C)	<b>Designovations</b>

Figure 18. Browse Components Page.

Navigation	Search Components
<a href="#">Components Home</a>	
<a href="#">Browse Components</a>	
<a href="#">Search Components</a>	
<a href="#">Contacts</a>	
<a href="#">About</a>	
<a href="#">Links</a>	
<b>Other Guides</b>	
<a href="#">Bridge Rail Systems</a>	
<a href="#">Transition Systems</a>	
<a href="#">Sign Support Systems</a>	
<a href="#">Luminaire Support Systems</a>	
<a href="#">Hardware Systems</a>	
<a href="#">Components</a>	
	Category <input type="text" value="Any Category"/>
	Function <input type="text" value="Any Function"/>
	Type <input type="text" value="Any Type"/>
	Manufacturer <input type="text" value="Any Manufacturer"/>
	<input type="button" value="Search"/>

Figure 19. Search Components page.

Select category

**Search Components**  
  

Category
Function
Type
Manufacturer

Any Category  
Any Category  
Fastener (F)  
Post (P)  
Rail (R)  
Luminaire (L)

Search

Select function

**Search Components**  
  

Category
Function
Type
Manufacturer

Luminaire (L)  
Any Function  
Any Function  
Frangible Base (B)  
Pole (P)  
Arm (A)

Search

Select type

**Search Components**  
  

Category
Function
Type
Manufacturer

Luminaire (L)  
Frangible Base (B)  
Any Type  
Any Type  
Breakaway Joint (J)  
Shoebase (H)  
Transformer (T)  
Direct Buried (B)  
Coupling (C)

Search

Select manufacturer

**Search Components**  
  

Category
Function
Type
Manufacturer

Luminaire (L)  
Frangible Base (B)  
Transformer (T)  
Any Manufacturer

Search

Figure 20. Search option example for finding luminaire transformer bases components.

Name/Designator	Photo	Category	Function	Type	Manufacturer
<b>LBT01</b> HAPCO Decorative GEORGETOWN Transformer Base [GES]		Luminaire (L)	Frangible Base (B)	Transformer (T)	HAPCO
<b>LBT03</b> HAPCO Decorative ARLEN Transformer Base		Luminaire (L)	Frangible Base (B)	Transformer (T)	HAPCO
<b>LBT04</b> HAPCO Decorative YORK Transformer Base [YTS]		Luminaire (L)	Frangible Base (B)	Transformer (T)	HAPCO
<b>LBT05</b> HAPCO Decorative GRAND Transformer Base [GR5]		Luminaire (L)	Frangible Base (B)	Transformer (T)	HAPCO
<b>LBT06</b> HAPCO Decorative WINCHESTER Transformer base [WMS]		Luminaire (L)	Frangible Base (B)	Transformer (T)	HAPCO
<b>LBT07</b> Akron Foundry Modified TB1-17 Transformer Base		Luminaire (L)	Frangible Base (B)	Transformer (T)	Akron Foundry Company
<b>LBT08</b> Akron Foundry TB1-17 Transformer Base		Luminaire (L)	Frangible Base (B)	Transformer (T)	Akron Foundry Company
<b>LBT09</b> Akron Foundry TB2-17 Transformer Base		Luminaire (L)	Frangible Base (B)	Transformer (T)	Akron Foundry Company
<b>LBT10</b> Akron Foundry TB3-17 Transformer Base		Luminaire (L)	Frangible Base (B)	Transformer (T)	Akron Foundry Company

Figure 21. Partial results from search for luminaire transformer base components using the Search Components option.

## Summary

The information provided in this document serves as a tutorial for how to navigate and use the On-Line Guide to Luminaire Supports. It discusses the general layout of the Guide, the nomenclature for naming luminaire support systems and their components, and guidance on how to use the Guide for finding luminaire systems. The Guide contains only luminaire support systems that are eligible for use on federally funded projects and comply with the [AASHTO Standard Specification for Structural Supports for Highway Signs, Luminaires and Traffic Signals](#). A link to the appropriate FHWA Eligibility Letter is included in the index listing for each system, but users may want to refer to the [FHWA website](#) for the most current information on a particular system.

## References

- AASHTO85      AASHTO, Standard Specification for Structural Supports for Highway Signs, Luminaires and Traffic Signals, American Association of State Highway and Transportation Officials (AASHTO), Subcommittee on Bridges and Structures, Washington, D.C., 1985.
- AASHTO93      American Association of State Highway and Transportation Officials, *Guide to Metric Conversions*, Washington, D.C. (1993).
- AASHTO09      American Association of State Highway and Transportation Officials, *Manual for Assessing Safety Hardware*, AASHTO Subcommittee on Bridges and Structures, Washington, D.C. (2009).
- Ross03          Ross, H.E., D.L. Sicking, and H.S. Perrara, "Recommended Procedures for the Safety Performance Evaluation of Highway Appurtenances," *National Cooperative Highway Research Program Report No. 350*, National Academy of Sciences, Washington, D.C (1993).