



SURFACE VEHICLE RECOMMENDED PRACTICE

J573™

DEC2022

Issued 1918-03
Revised 2022-12

Superseding J573 JUN2011

Signal and Marking Light Sources

RATIONALE

The following revisions were made:

- a. Inserted 2.2.2 with references for UN Regulations 37 and 128 and UN R.E.5.
- b. A cross-reference to SAE J2560 was added for halogen filament light sources suitable for signal and marking lighting.
- c. Added the option of using IEC 60809, UN Regulations 37 and 128, and UN R.E.5 as alternate sources for determining filament, or light emitting area location.
- d. Table 2A was expanded to include more typical signal and marking filament light sources for motor vehicles.
- e. Table 2B was expanded to include new standardized LED light sources: LW2, LR3A/B, LW3A/B, LY3A/B, LR4A/B, LR5A/B, LW5A/B, LY5A/B, LR6A/B, L1A/6, and L1B/6.
- f. Newly entered light source specification data was taken from U.N. R.E.5 and/or provided by light source manufacturers.
- g. The definition of light center was harmonized with UN R.E.5, which is an improved definition that also adequately covers LED light sources.
- h. The test section (4.3) for LED light sources was split between the legacy LR1 light source (present in the June 2011 issue of SAE J573) and the other new LED light sources. Test methods for all LED light sources other than LR1 are included through normative referencing to UN Regulation 128, UN R.E.5, and IEC-60061-1, where the newly introduced Table 9 provides the references.
- i. The requirements sections for LED light sources (5.4 and following) are dedicated to all LED light sources other than LR1. Specifications and requirements for all LED light sources other than LR1 are included through normative referencing to UN Regulation 128, UN R.E.5, and IEC-60061-1, where the newly introduced Table 9 (Replaceable LED light sources and related dimensional figures) provides the references.
- j. The existing requirements for the LR1 were moved to a new Section 6.
- k. Introduction of a new Table 10 to provide a direct reference to UN Regulation 128 and UN R.E.5 for the thermal behavior of the luminous flux of LED light sources.
- l. Existing tables were converted to a new format.

SAE Executive Standards Committee Rules provide that: "This report is published by SAE to advance the state of technical and engineering sciences. The use of this report is entirely voluntary, and its applicability and suitability for any particular use, including any patent infringement arising therefrom, is the sole responsibility of the user."

SAE reviews each technical report at least every five years at which time it may be revised, reaffirmed, stabilized, or cancelled. SAE invites your written comments and suggestions.

Copyright © 2022 SAE International

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of SAE.

TO PLACE A DOCUMENT ORDER: Tel: 877-606-7323 (inside USA and Canada)
Tel: +1 724-776-4970 (outside USA)
Fax: 724-776-0790
Email: CustomerService@sae.org
<http://www.sae.org>

SAE WEB ADDRESS:

For more information on this standard, visit
https://www.sae.org/standards/content/J573_202212/

1. SCOPE

Most signal and marking lighting devices have light sources (bulbs), which can be based on either filament or LED technology. To assure field replacement, it is important that light source types employed be readily available in normal service channels. This document defines the physical, electrical, and photometric characteristics necessary to achieve a proper replacement for popular types of signal and marking light sources.

Some of the design characteristics in this document are listed solely for the sake of standardization and are not intended to describe the performance of lighting devices (lamp assemblies) on the vehicle.

Halogen filament light sources suitable for signal and marking lighting are specified in SAE J2560.

2. REFERENCES

2.1 Applicable Documents

The following publications form a part of this specification to the extent specified herein. Unless otherwise indicated, the latest issue of SAE publications shall apply.

2.1.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or +1 724-776-4970 (outside USA), www.sae.org.

SAE J567	Light Source Retention System
SAE J578	Chromaticity Requirements for Ground Vehicle Lamps and Lighting Equipment
SAE J1330	Photometry Laboratory Accuracy Guidelines
SAE J2357	Application Guidelines for Electronically Driven and/or Controlled Exterior Automotive Lighting Equipment
SAE J2560	Halogen Light Source Performance Requirements for Motor Vehicle Forward Lighting

2.1.2 ANSI Accredited Publications

Copies of these documents are available online at <https://webstore.ansi.org/>.

ANSI_ANSLG_C81.61	Electric Lamp Bases
ANSI_ANSLG_C81.62	Lamp Holders for Electric Lamps
ANSI_ANSLG_C81.63	Gauges for Electrical Lamp Bases and Lamp Holders
ANSI ANSLG SR25e - 2009	Assigned Miniature Lamp Codes

2.1.3 International Electrotechnical Commission (IEC) Publications

Available from IEC Central Office, 3, rue de Varembe, P.O. Box 131, CH-1211 Geneva 20, Switzerland, Tel: +41 22 919 02 11, www.iec.ch.

IEC Publication 60061-1	Lamp Caps and Holders Together with Gauges for the Control of Interchangeability and Safety - Part 1: Lamp caps
IEC Publication 60809	Lamps and Light Sources for Road Vehicles - Dimensional, Electrical and Luminous Requirements

IEC Publication 60810	Lamps, Light Sources and LED Packages for Road Vehicles - Performance Requirements
IEC Technical Report 62471-2	Photobiological Safety of Lamps and Lamp Systems - Part 2: Guidance on Manufacturing Requirements Relating to Non-Laser Optical Radiation Safety

2.2 Related Publications

The following publications are provided for information purposes only and are not a required part of this SAE Technical Report.

2.2.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or +1 724-776-4970 (outside USA), www.sae.org.

SAE J387	Terminology - Motor Vehicle Lighting
SAE J2442	Harmonized Provisions for Installation of Exterior Lamps and Retro-Reflecting Devices on Road Vehicles Except Motorcycles

2.2.2 United Nations Publications

Available from United Nations Economic Commission for Europe, Palais des Nations, CH-1211, Geneva 10, Switzerland, Tel: +41-0-22-917-12-34, www.unece.org.

UN Regulation 37	Uniform Provisions Concerning the Approval of Filament Light Sources for Use in Approved Lamp Units of Power-Driven Vehicles and of Their Trailers
UN Regulation 128	Uniform Provisions Concerning the Approval of Light Emitting Diode (LED) Light Sources for Use in Approved Lamp Units on Power-Driven Vehicles and Their Trailers
UN R.E.5	Consolidated Resolution on the Common Specification of Light Source Categories (R.E.5) (ECE/TRANS/WP.29/1127 and revisions)

2.2.3 CIE Publications

Available from CIE Central Bureau, Babenbergerstrasse 9/9A, 1010 Vienna, Austria, Tel: +43 1 714 31 87, www.cie.co.at.

Publication No. 70 - 1987	The Measurement of Absolute Luminous Intensity Distributions
---------------------------	--

2.2.4 IES Publications

Available from Illuminating Engineering Society, 120 Wall Street, Floor 17, New York, NY 10005-4001, Tel: 212-248-5000, www.ies.org.

LM-45	Approved Method for Electrical and Photometric Measurements of General Service Incandescent Filament Lamps, IES Lighting Handbook, Reference Volume, III.NA
LM-79-19	Approved Method: Optical and Electrical Measurements of Solid-State Lighting Products