



SURFACE VEHICLE RECOMMENDED PRACTICE

J1383™

MAY2018

Issued 1985-04
Revised 2018-05

Superseding J1383 MAY2010

(R) Performance Requirements for Motor Vehicle Headlamps

RATIONALE

Added Table of Contents.

2.1, 2.2 – Revised reference information.

3.4, 3.7, 3.8, 3.10, 3.12, 3.13, 3.17, 3.18, 3.20 – Removed definitions which are currently in SAE J387.

2.2.1 – Added section; moved SAE J387 and SAE J2442 from 2.1.1. Added SAEJ2560, SAE J2650, and SAE J3069 references.

4.2.1 through 4.2.5 – Updated for modern technology and added provisions to ensure legibility.

5. – Clarified test voltage to be used.

5.1.1.1 – Added note for aiming of ADB system types.

Figure 5, Figure 6 – Changes made to improve pedestrian and obstacle detection.

6.8.5.1 – Clarified aim method to be used in the case of a headlamp incorporating ADB.

7.1 – Deleted “glass cover” and substituted “transparent cover” due to common use of other materials, moved to 6.9.

7.4, 7.4.1.3 – replaced “bulbs” with “light sources” due to new technology.

7.5 – Note added for stop-start system performance.

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TABLE OF CONTENTS

1.	SCOPE.....	4
2.	REFERENCES.....	4
2.1	Applicable Documents	4
2.1.1	SAE Publications.....	4
2.2	Related Documents.....	4
2.2.1	SAE Publications.....	4
2.2.2	Federal Publications.....	5
2.2.3	ASTM Publications.....	5
3.	DEFINITIONS	5
4.	LIGHTING IDENTIFICATION CODE, MARKINGS AND NOTICES.....	6
4.1	SAE J759 Lighting Identification Code.....	6
4.1.1	Replaceable Bulb	6
4.1.2	Integral Beam.....	6
4.1.3	Combination Headlamp.....	6
4.2	Headlamp Marking Requirements	6
4.3	Headlamp Aim-Type Code.....	7
4.3.1	Mechanical Aim Headlamp	7
4.3.2	Visual/Optical Aim Headlamp	9
4.3.3	VHAD Aim Headlamp.....	9
4.4	Replacement Component Marking	9
4.5	Optical Axis Marking	9
5.	TESTS.....	10
5.1	SAE J575 Tests for Motor Vehicle Lighting Devices and Components	10
5.2	Color Test.....	11
5.3	Plastic Materials	11
5.4	Aiming Adjustment Test	11
5.5	Aim Range Test	11
5.6	Inward Force Test	11
5.7	Torque Deflection Test.....	12
6.	PERFORMANCE REQUIREMENTS	12
6.1	SAE J575 Test Requirements.....	12
6.2	Color Requirement	15
6.3	Plastic Materials Requirements	15
6.4	Aiming Adjustment Requirement	15
6.5	Aim Range Requirements	16
6.6	Inward Force Requirements.....	16
6.7	Torque Deflection Requirement	16
6.8	Headlamp Aim Requirements	16
6.9	Installation Requirements.....	21
7.	GUIDELINES	21
7.1	Headlamp Design Requirements	21
7.2	Fixed Horizontal Aim Guideline.....	21
7.3	High beam hotspot design guideline.....	21
7.4	Out-of-Focus Test	21
7.5	Start-Stop	21
8.	NOTES	22
8.1	Revision Indicator.....	22

Figure 1	Dimensional specifications for location of aiming pads on headlamps.....	7
Figure 2	Detail example of aiming pad.....	8
Figure 3	Dimensional specifications for location of aiming pads on headlamp units.....	8
Figure 4	Inward force tester	12
Figure 5	Low beam headlamp photometric requirement luminous intensity (cd)	13
Figure 6	High beam headlamp photometric requirement luminous intensity (cd).....	14
Figure 7	"3 line" horizontal aim VOLH2.....	19
Figure 8	"0.2 D" horizontal aim VORH or VOLH1	20
Figure 9	"0.2 D" horizontal aim VORH or VOLH1	20
Table 1	Dimensional specifications for location of aiming pads on headlamp units.....	9
Table 2	Combinations of aim mechanisms and aim tolerance allowed	20

1. SCOPE

This SAE Recommended Practice is intended as a guide toward standard practice and is subject to change to keep pace with experience and technical advances. This document establishes performance requirements for headlamps.

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 J575	Test Methods and Equipment for Lighting Devices for Use on Vehicles Less than 2032 mm in Overall Width
SAE J576	Plastic Material or Materials for Use in Optical Parts Such as Lenses and Reflex Reflectors of Motor Vehicle Lighting Devices
SAE J578	Color Specification
SAE J599	Lighting Inspection Code
SAE J600	Headlamp Aim Test Machines
SAE J602	Headlamp Aiming Device for Mechanically Aimable Headlamp Units
SAE J759	Lighting Identification Code
SAE J2560	Forward Lighting Halogen Bulb Performance Requirements for Motor Vehicles
SAE J2595	Performance Requirements for Sealed Beam Motor Vehicle Headlamps
SAE J2650	Performance Requirements for Light Emitting Diode (LED) Road Illumination Devices

2.2 Related Documents

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
SAE J2592	Limited Adaptive Forward Lighting System
SAE J2838	Full Adaptive Forward Lighting systems
SAE J3069	Adaptive Driving Beam

2.2.2 Federal Publications

Available from the Superintendent of Documents, U. S. Government Printing Office, Mail Stop: SSOP, Washington, DC 20402-9320 or at: <http://www.gpo.gov/fdsys/browse/collectionCfr.action?collectionCode=CFR>

CFR Title 49 Part 571.108 Lamps, Reflective Devices and Associated Equipment (FMVSS 108)

2.2.3 ASTM Publications

Available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, Tel: 610-832-9585, www.astm.org.

ASTM E308-85 Standard Method for Computing the Color of Objects by Using the CIE System

3. DEFINITIONS

3.1 HEADLAMP

A lighting device providing a high and/or a low beam designed to provide illumination forward of the vehicle.

3.2 REPLACEABLE LIGHT SOURCE

A light source with related envelope and mounting base which is removable from the headlamp for the purpose of replacement.

3.3 MECHANICALLY AIMABLE HEADLAMP

A headlamp having three pads on the lens, forming an aiming plane or an aiming ring, the aiming plane or aiming ring being used for laboratory photometric testing and for inspecting the aim of the headlamp when installed on the vehicle.

3.4 HEADLAMP OPTICAL AXIS

The line formed by the intersection of a horizontal and a vertical plane through the light source parallel to the longitudinal axis of the vehicle. If the optical axis of the headlamp is not at the geometric center of the lens or multiple light sources are used, then the location will be indicated by the manufacturer on the headlamp.

3.5 SEASONING - FILAMENT BULBS

Process of energizing the filament of a bulb at design voltage for a period of time equal to 1% of design life or 10 h, whichever is shorter

3.6 HEADLAMP TEST FIXTURE

Device specifically designed to support a headlamp in the test position during laboratory testing. Mounting hardware and components shall be representative of those necessary to operate the headlamp in its normal manner.

3.7 VEHICLE HEADLAMP AIMING DEVICE (VHAD)

An aiming device incorporated in the headlamp system which allows for inspection and adjustment of headlamp aim without the use of aim measuring equipment external to the vehicle.

3.8 HIGH BEAM FILAMENT SOURCE(S)

Filament coil designed to provide high beam function.

3.9 LOW BEAM FILAMENT SOURCE(S)

Filament coil designed to provide low beam function.

3.10 AIMING REFERENCE PLANE

A plane which is perpendicular to the longitudinal axis of the vehicle and tangent to the forward most aiming pad on the headlamp or, where such a plane would intersect the surface of the lens between the aiming pads, a plane which is perpendicular to the longitudinal axis of the vehicle and is located forward of and as close to the lens as possible without causing interference.

3.11 VISUALLY/OPTICALLY AIMABLE HEADLAMP

A headlamp which is designed to be visually/optically aimable.

3.12 INTEGRAL BEAM HEADLAMP

A headlamp, other than a standardized sealed beam headlamp or a replaceable bulb headlamp, comprising an integral and indivisible optical assembly including lens, reflector, and light source.

3.13 COMBINATION HEADLAMP

A headlighting system comprised of two different headlamp types, each of which shall be either a sealed beam headlamp, an integral beam headlamp, or a replaceable bulb headlamp.

3.14 REPLACEABLE LIGHT SOURCE HEADLAMP

A headlamp utilizing a replaceable light source(s) to provide illumination.

4. LIGHTING IDENTIFICATION CODE, MARKINGS AND NOTICES

4.1 SAE J759 Lighting Identification Code

4.1.1 Replaceable Bulb

Headlamps meeting the requirements herein for replaceable bulb headlamps shall be identified by the code "HR" in accordance with SAE J759.

4.1.2 Integral Beam

Headlamps meeting the requirements herein for integral beam headlamps shall be identified by the code "HI" in accordance with SAE J759.

4.1.3 Combination Headlamp

Headlamps meeting the requirements herein for combination headlamps shall be identified by the codes of the headlamp types incorporated in the headlamp system in accordance with SAE J759.

4.2 Headlamp Marking Requirements

Headlamps shall be permanently marked with the following markings:

4.2.1 Name and/or trademark of the manufacturer, importer, or vehicle manufacturer shall be readily legible when the headlamp is installed on the vehicle.

4.2.2 Except on sealed beam headlamps, design voltage and replaceable light source type designator(s) shall be readily legible when the headlamp is installed on the vehicle. On sealed beam headlamps, design voltage and part number or trade number shall be readily legible when the sealed beam is installed and/or removed from the vehicle.

- 4.2.3 Aim markings specified in 4.3 of this document shall be readily legible when the headlamp is installed on the vehicle.
- 4.2.4 Any markings molded onto the outer surface of the lens shall protrude not more than 0.5 mm from the lens surface.
- 4.2.5 Letters, numbers, and other symbols in markings shall be not less than 3 mm in height.

4.3 Headlamp Aim-Type Code

4.3.1 Mechanical Aim Headlamp

- 4.3.1.1 The lens shall have three aiming pads which meet the requirements of Figures 1 to 4, which detail the dimensional specifications for the location of aiming pads on replaceable bulb headlamps. The aiming pads need not be centered at the geometric center of the lens, or on the optical axis. Except as provided in 4.3.1.2, a whole number, which represents the distance in tenths of an inch (i.e., 0.3 inch = 3) from the aiming reference plane to the respective aiming pads which are not in contact with that plane, shall be inscribed adjacent to each respective aiming pad on the lens. The height of these numbers shall be not less than 0.157 inch (4 mm). If there is interference between the plane and the area of the lens between the aiming pads, the whole number represents the distance to a secondary plane. The secondary plane shall be located parallel to the aiming reference plane and as close to the lens as possible without causing interference.
- 4.3.1.2 If the forward aiming pad is the lower inboard aiming pad, then the dimensions may be placed anywhere on the lens. The dimension for the outboard aiming pad (Dimension F in Table 1) shall be followed by the letter "H" and the dimension for the center aiming pad shall be followed by the letter "V." The dimensions shall be expressed in tenths of an inch.

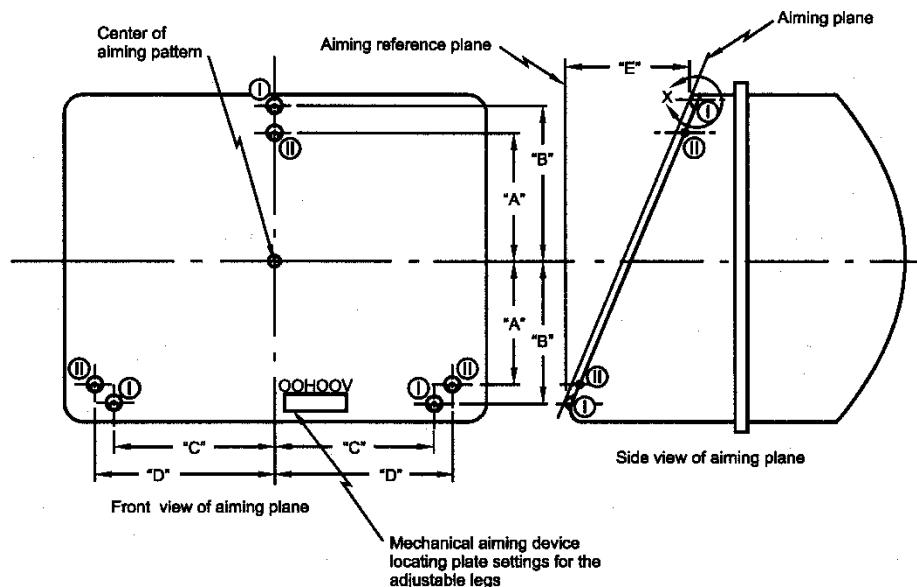


Figure 1 - Dimensional specifications for location of aiming pads on headlamps