

	<b>SURFACE VEHICLE RECOMMENDED PRACTICE</b>	<b>SAE</b> <b>J1735 FEB2011</b>
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		Superseding J1735 DEC2006
Harmonized Vehicle Headlamp Performance Requirements		

#### RATIONALE

The technical report covers technology, products, or processes which are mature and not likely to change in the foreseeable future.

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## 1. SCOPE

This SAE Recommended Practice provides headlamp beam pattern test points for harmonized low and high beam headlamp beam patterns that incorporate elements of European, Asian, and U.S. photometric tables. These photometric tables are optional to those found in SAE J1383.

## 2. REFERENCES

### 2.1 Applicable Publications

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

#### 2.1.1 SAE Publications

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

SAE J387 Terminology—Motor Vehicle Lighting

SAE J575 Test Methods and Equipment for Lighting Devices and Components for Use on Vehicles Less than 2032 mm in Overall Width

SAE J759 Lighting Identification Code

SAE J1383 Performance Requirements for Replaceable Bulb Motor Vehicle Headlamps

### 2.2 Related Publications

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

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### 2.2.1 SAE Publications

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

SAE J599 Lighting Inspection Code

SAE J600 Headlamp Aim Test Machines

SAE J602 Headlamp Aiming Device for Mechanically Aimable Headlamp Units

SAE Paper 870238 The Potential Impact of Automotive Headlight Changes on the Visibility of Reflectorized Highway Signs, J. B. Arens, Office of Safety and Traffic Operations, Research and Development, Federal Highway Administration

### 2.2.2 ECE Publications

Available from Commission of the European Communities, Rue de la Loi 200, B-1049 Brussels, Belgium, [www.europa.eu.int](http://www.europa.eu.int).

ECE Regulation R112 Headlamps Emitting an Asymmetrical Passing Beam

ECE Regulation R98 Headlamps with Gas-Discharge Light Sources

### 2.2.3 JIS Publication

Available from Japanese Standards Association, 4-1-24 Akasaka Minato-ku, Tokyo 107-8440, Japan, Tel: +81-3-3583-8005, [www.jsa.or.jp](http://www.jsa.or.jp).

JIS D 5500 Automobile Parts—Lighting and Light Signaling Devices

### 2.2.4 Other Publications

"Headlamp Beam Pattern Philosophy," Lidstrom, O., Minutes of the SAE Headlamp Beam Task Force, April 4, 1990

"Obstacle Detection Rationale for Upper Beam Intensity," Kosmatka, W.J., Minutes of the SAE Headlamp Beam Task Force, February 26, 1992

"Headlamp Beam Gradient Aim Study," Kosmatka, W.J., Minutes of the SAE Headlamp Beam Task Force, October 4, 1993

"Partial Harmonization of International Standards for Low-Beam Headlighting Patterns," Sivak, M. and Flannagan, M., UMTRI-93-11, Univ. of Mich. Trans. Res. Institute, 1993

## 3. DEFINITIONS

### 3.1 Harmonized Beam Pattern

Optional low beam and high beam patterns that may be used in place of those specified in SAE J1383.

#### 4. LIGHTING IDENTIFICATION CODE, MARKINGS AND NOTICES

##### 4.1 SAE J759 Lighting Identification Code

Headlamps meeting the requirements of this document may be identified by the code "1" following the "H" designation in accordance with SAE J759.

4.2 The marking requirements for headlamps per SAE J1383 shall also apply.

#### 5. TESTS

5.1 The testing procedures per SAE J575 shall apply except as noted.

##### 5.2 Photometric Test Voltage

The voltage for all testing shall be design voltage  $\pm 0.1$  V DC as measured at the terminals of the headlamp unless otherwise specified. Separate headlamps shall be used for each test. Unless otherwise indicated, all drain holes, breathing devices or other openings or vents of headlamp units under test shall be in their normal operating condition.

##### 5.3 Photometry

Test samples shall be new, unused headlamps manufactured from production tooling and assembled by means of production processes.

###### 5.3.1 Bulbs

The lamp shall be fitted with an accurate rated bulb (selected per SAE J387) and tested at the rated luminous flux output. Where special bulbs are used, they shall be seasoned per SAE J387 and operated at their rated luminous flux output. If the luminous flux output of the bulb is intentionally modified from specifications for the device through internal or external circuitry, operate the bulb at its modified voltage, or with the voltage modification circuitry attached and with the specified design voltage applied to the input of the modification circuitry.

###### 5.3.2 Conversion

For conversion of halogen light source photometric values for voltages other than 12.8 Volts, the following factors are recommended:

For 12.0 V—0.81

For 13.2 V—1.11

5.3.3 The headlamp shall be photometered at the appropriate test points as listed in Table 1. The headlamp shall be in operation a minimum of 3 minutes prior to photometry.

5.3.4 Headlamps designed to harmonized low beam requirements may be photometrically tested utilizing either the  $\frac{1}{4}$  degree reaim at each test point or may utilize a complete shift of the beam pattern a maximum of 0.5 degree horizontally and 0.5 degree vertically to meet requirements. If the pattern movement option is chosen, the  $\frac{1}{4}$  degree reaim may not be additionally used.

#### 6. PERFORMANCE REQUIREMENTS

A headlamp, when tested in accordance with the test procedures specified in Section 5, shall meet the following requirements.

6.1 Test requirements for motor vehicle lighting devices and components per SAE J575.

6.2 Headlamps shall meet the requirements specified in SAE J1383 except as noted.

6.3 Photometric Performance Requirements

Headlamps shall be designed to conform to the photometric requirements of Tables 1 and 2.

7. GUIDELINES

The guidelines of SAE J1383 shall apply.

TABLE 1 - HARMONIZED LOW BEAM HEADLAMP

