SURFACE VEHICLE STANDARD

J279™ JUN2021

Issued 1977-03
Reaffirmed 2011-03
Revised 2021-06

Superseding J279 MAR2011

(R) Snowmobile Tail (Rear Position) Lamp

RATIONALE

This revision aligns with other lamp standards (e.g., SAE J584, SAE J585, SAE J586, CMVSS 108, SAE J1623, SAE J1383, SAE J2442, UNECE R50, UNECE R7, etc.). The layout of the documents is inspired by SAE J584. There is need to clarify the document and to better align it with SAE J575 test methods for lighting equipment. In this revision, sequentially, the test methods are first defined, and then the performance expectations are defined. The order of the tests now matches those of SAE J575. This is in line with the structures of SAE J584, SAE J585, and SAE J586.

This document was converted from a SAE Recommended Practice to a SAE Standard.

1. SCOPE

This SAE Standard provides test procedures, performance requirements, design guidelines, and installation guidelines for snowmobile tail (rear position) lamp.

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 J33 Snowmobile Definitions and Nomenclature - General

SAE J387 Terminology - Motor Vehicle Lighting

SAE J567 Lamp Bulb Retention System

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

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SAE J576 Plastic Material or Materials for Use in Optical Parts Such as Lenses and Reflex Reflectors of Motor Vehicle Lighting Devices

SAE J578 Chromaticity Requirements for Ground Vehicle Lamps and Lighting Equipment

SAE J1889 LED Signal and Marking Lighting Devices

3. DEFINITIONS

TAIL (REAR POSITION) LAMP: Whether separate or in combination with other lamps, a tail lamp is located on the rear of the vehicle to indicate the presence of a vehicle by a steady operating when viewed from the rear.

SNOWMOBILE: As defined by SAE J33.

MULTIPLE-COMPARTMENT LAMP: A device which gives its indication by two or more separately lighted areas which are joined by one or more common parts such as a housing or lens.

MULTIPLE LAMP ARRANGEMENT: An array of two or more separated lamps on each side of the snowmobile which operate together for a particular lighting function.

OPTICAL CENTER: As defined by SAE J387.

3.1 Motor Vehicle Lighting Terminologies

The terminologies contained in SAE J387 apply to this standard.

4. TESTS

4.1 SAE J575:2018 Test Methods

SAE J575:2018 is a part of this document. The following tests from SAE J575:2018 are applicable with the modifications as indicated.

Test voltage application shall be per SAE J575:2018 4.1.2.2 on test voltage. A multiple compartment lamp or multiple lamps may be used.

If LED light sources are present in the lamp, the test methods and procedures of SAE J1889 may additionally be applied in whole or in part.

4.1.1 Photometry Test

4.1.1.1 The optical center is formed by the H-V axis.

4.1.1.2 Photometric measurements of multiple compartment lamp or multiple lamp arrangements shall be made by either of the following methods:

a. If a multiple lamp arrangement is used to obtain the tail (rear position) signal function, all lamps shall be photometered together provided that a line from the optical axis of each lamp to the center of the photometer sensing device does not make an angle of more than 0.6 degree with the photometer H-V axis. When lamps are photometered together, the H-V axis shall intersect the midpoint between their optical axes.

b. Each lamp shall be photometered separately by aligning the axis of each lamp with the photometer. The photometric measurement for the multiple lamp arrangement shall be determined by adding the photometric outputs from each individual lamp at corresponding test points.

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4.1.2 Vibration Test

4.1.3 Warpage Test on Devices with Plastic Components

4.1.4 Water Intrusion (Moisture) Test

4.1.5 Dust Exposure Test

4.1.6 Corrosion Test

4.2 Plastic Materials Used in Optical Parts

SAE J576:2017 is a part of this document.

4.3 Color Test

SAE J578:2020 is a part of this document.

5. PERFORMANCE REQUIREMENTS

5.1 A tail (rear position) lamp, when tested in accordance with the test procedure specified in Section 4, shall comply with the following requirements.

If LED light sources are present in the lamp, the requirements of SAE J1889 may additionally be applied in whole or in part.

5.1.1 Photometric Requirements

5.1.1.1 The lamp shall be designed to conform to the photometric requirements of Figures 1, 2, or 3. The corresponding footnotes apply to all figures.

5.1.1.2 A multiple lamp arrangement may be used to meet the photometric requirements of a tail (rear position) lamp. If multiple lamps are used, then the entire lamp arrangement must be used to meet the photometric requirements of Figures 1, 2, or 3.

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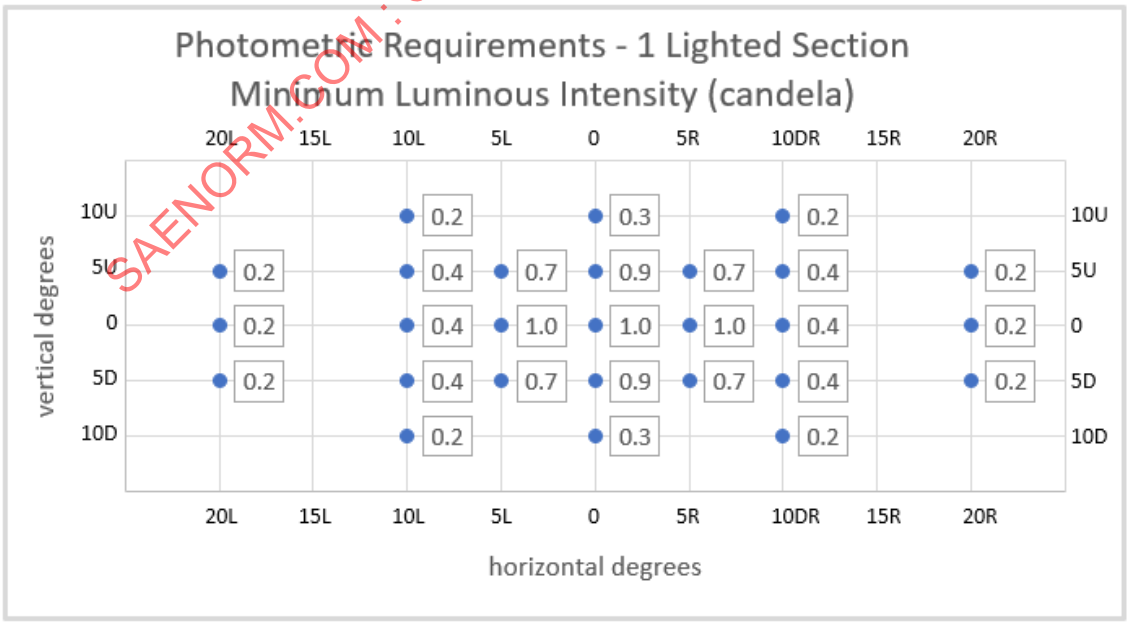

Figure 1 - Photometric requirements of a snowmobile tail (rear position) lamp with one lighted section

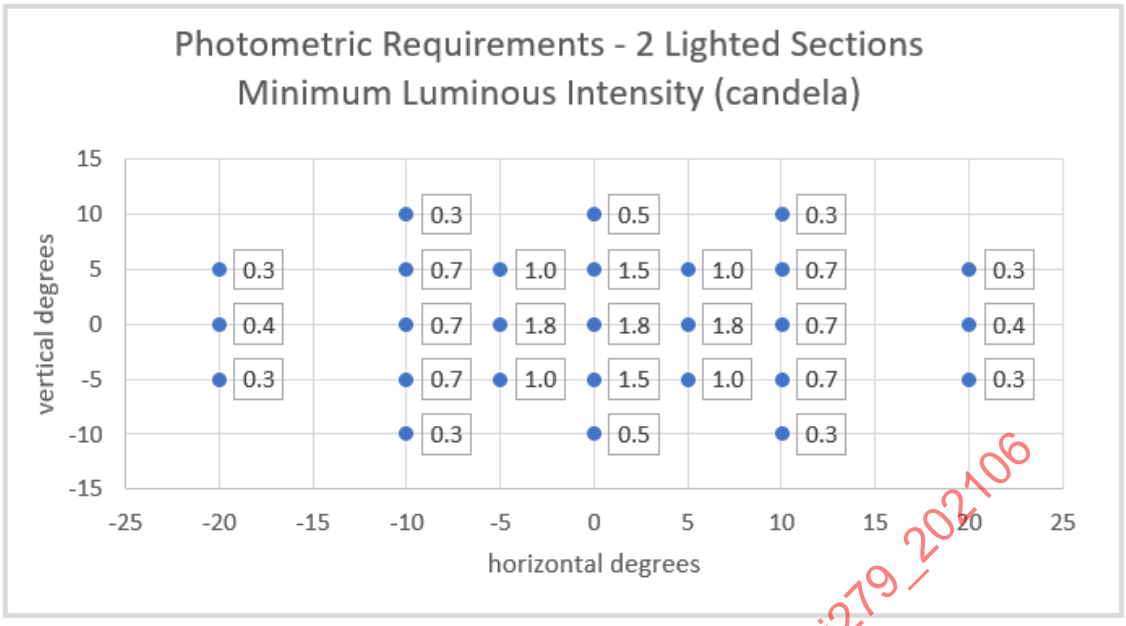

Figure 2 - Photometric requirements of a snowmobile tail (rear position) lamp with two lighted sections

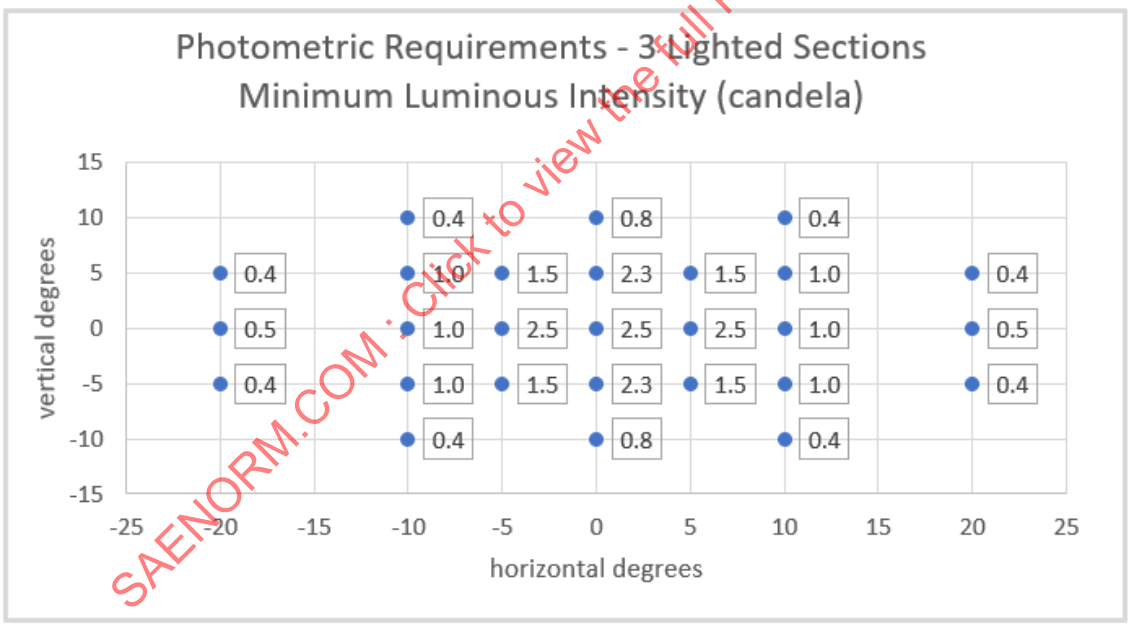

Figure 3 - Photometric requirements of a snowmobile tail (rear position) lamp with three lighted sections

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NOTE 1: Specifications are based on laboratories using accurate, rated bulbs during testing.

NOTE 2: A multiple device tail (rear position) lamp gives its indication by two or more separately lighted sections which may be separate lamps, or areas that are joined by common parts. The photometric values are to apply when all sections which provide the tail signal are considered as a unit.

NOTE 3: Test point nomenclature is explained in SAE J575:2018 4.1.2.4.

5.1.2 Vibration

The lamp shall comply with the performance requirements of SAE J575:2018.

5.1.3 Warpage on Devices with Plastic Component(s)

The lamp shall comply with the performance requirements of SAE J575:2018.

5.1.4 Water Intrusion (Moisture)

The lamp shall comply with the performance requirements of SAE J575:2018.

5.1.5 Dust Exposure

The lamp shall comply with the performance requirements of SAE J575:2018.

5.1.6 Corrosion

The lamp shall comply with the performance requirements of SAE J575:2018.

5.2 Plastic Materials

Plastic Materials shall comply with the performance requirements of SAE J576:2017.

5.3 Color

The color of the light shall be red per SAE J578:2020.

6. DESIGN REQUIREMENTS

If a stop lamp is optically combined with the tail (rear position) lamp and a two-filament replaceable bulb is used, the bulb shall have an indexing base and the socket shall be designed so that bulbs with non-indexing bases cannot be used. Removable sockets shall have an indexing feature so that they cannot be reinserted into lamp housings in random positions, unless the lamp will perform its intended function with random light source orientation.

7. INSTALLATION REQUIREMENTS

The tail (rear position) lamp shall comply with the following requirements as installed on the snowmobile.

7.1 Vehicular Obstructions

The tail (rear position) lamp shall be designed to comply with all photometric requirements of Figures 1, 2, or 3 with all vehicular obstructions considered.

7.2 Visibility Requirements

Each tail (rear position) lamp arrangement shall be designed to conform to one of the following visibility requirements.

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