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INTERNATIONAL
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SURFACE VEHICLE RECOMMENDED PRACTICE

An American National Standard

SAE J280 | REV. JUN84

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Superseding J280 JUN84

SNOWMOBILE HEADLAMPS

***Foreword*—**This Document has not changed other than to put it into the new SAE Technical Standards Board Format.

This SAE Recommended Practice is intended as a guide toward standard practice, but may be subject to frequent change to keep pace with experience and technical advances. Hence, its use where flexibility of revision is impractical is not recommended.

***1. Scope*—**This recommended practice provides test methods and requirements for snowmobile headlamps.

2. References

2.1 Applicable Publication—The following publication forms a part of the specification to the extent specified herein. Unless otherwise indicated the lastest revision of SAE publications shall apply.

2.1.1 SAE PUBLICATION—Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

SAE J575—Tests for Motor Vehicle Lighting Devices and Components

The following sections from SAE J575 are a part of this recommended practice:

Section B - Samples for test
Section C - Lamp Bulbs
Section D - Laboratory Facilities
Section E - Vibration Test
Section F - Moisture Test
Section G - Dust Test
Section H - Corrosion Test
Section I - Color Test - The light should be white to amber.
Section J - Photometry
Section L - Warpage Test Devices with Plastic Lenses

Sealed Beam headlamps do not need to comply with sections F or G of SAE J575.

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3. Definitions

3.1 Snowmobile Headlamps—Snowmobile headlamps are one or more lamps mounted on the front of a snowmobile used as the major lighting device to provide general illumination ahead of the snowmobile. The photometric requirements stated in Tables 1 and 2 represent the total headlamp illumination requirement for a snowmobile.

3.1.1 If multiple headlamps are used to meet this recommended practice, the combination of lamps, as mounted on the snowmobile, shall meet the requirements when treated as one lamp.

3.1.2 The headlamp shall not be obstructed by any part of the snowmobile throughout the photometric test angles for the lamp, unless the lamp is designed to comply with all photometric requirements with these obstructions considered.

4. Aiming Adjustment Tests

4.1 A minimum aiming adjustment of ±4 deg shall be provided in the vertical plane from a basic aiming position of 1/2 D-V (±0.5 deg) with the machine on a hard surface, the suspension adjusted to the manufacturer's recommended setting and the machine loaded to simulate an 80 kg operator at the designated seating position.

4.2 The mechanism, including the aiming adjustment, shall be so designed as to prevent the unit from receding into the lamp body or housing when an inward force of 50 lb (22.7 N) is exerted at the geometric center of the outer surface of the lens.

4.3 When adjusting screws are employed, they shall be equipped with self-locking devices which will operate satisfactorily for a minimum of 10 adjustments on each screw, over a length of screw thread of ±1/8 in (3.175 mm).

4.4 Headlamp Mounting—The headlamp should be mounted on the snowmobile as high as practicable above the surface of the ground and below the snowmobile operator's line of sight.

In order to facilitate setting and maintaining the proper adjustment of the headlamp on snowmobiles in use, the following requirements for headlamp design and mounting shall be adopted and followed in general practice and be equally applicable to new designs of headlamps and headlamp mountings. Headlamps and headlamp mountings shall be designed and constructed so that:

4.4.1 The axis of the light beam may be adjusted conveniently by one person using ordinary tools, up and down from the designed setting, in the amount determined by practical operating conditions.

4.4.2 When the headlamp is secured, the aim will not be disturbed under ordinary conditions of operation.

4.5 Visual Service Aiming—The geometric center of the high intensity zone of the upper beam of the multiple beam headlamps shall be deemed sufficiently defined for the purpose of service aiming if it can be set by three experienced observers on a vertical screen at 25 ft (7.6 m) within a maximum vertical deviation of ±0.2 deg [1 in (25.4 mm)] and within a maximum horizontal deviation of ±0.4 deg [2 in (50.8 mm)]. The aim for each observer shall be taken as the average of at least three observations.

4.6 Beam Aim During Photometric Test—The upper beam of a multiple beam headlamp shall be aimed photoelectrically so that the center of the zone of highest intensity falls 0.4 deg vertically below the lamp axis and is centered laterally. The center of the zone of highest intensity shall be established by the intersection of a horizontal plane passing through the point of maximum intensity, and the vertical plane established by balancing the photometric values at 6 deg left and 6 deg right.

4.7 Photometric Tests—Shall be made with the photometer at a distance of 60 ft (18.3 m) from the lamp. The headlamp shall be operated at its rated voltage during the test and in accordance with 3.1.2.

4.8 At Focus Tests—The light source shall be located in the design position with respect to the reflector as specified by the manufacturer.

4.8.1 When aimed as described in 4.6, the high beam of the headlamp shall meet the candela requirements in Table 1.

TABLE 1—UPPER BEAM

Position, deg	Candela, cd
3U-V	1200 min
1/2D-V	12 000 min
1-1/2D-6L to 6R	6000 min
1-1/2D-9L to 9R	3000 min
1-1/2D-15L to 15R	1000 min
4-1/2D-V	1200 min

NOTE—A tolerance of ± 1/4 deg should be allowed at any test point.

4.8.2 When aimed, as described in 4.6, the low beam of the headlamp shall meet the candela requirements in Table 2.

TABLE 2—LOWER BEAM

Position, deg	Candela, cd
1/2U-Anywhere	2000 max
1–1/2D-V	5000 min
3D-V	9000 min
1–1/2D–6L to 6R	3000 min
3D-6L to 6R	6000 min
1–1/2D–9L to 9R	2000 min
3D-9L to 9R	3000 min
3D –15L to 15R	1000 min
4–1/2D-V	1500 min

NOTE—A tolerance of ±1/4 deg should be allowed at any test point.

5. Notes

5.1 Marginal Indicia—The change bar (l) located in the left margin is for the convenience of the user in locating areas where technical revisions have been made to the previous issue of the report. An (R) symbol to the left of the document title indicates a complete revision of the report.

PREPARED BY THE SAE SNOWMOBILE COMMITTEE