



SURFACE VEHICLE RECOMMENDED PRACTICE

J2498™

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Superseding J2498 AUG2011

Minimum Performance of the Warning Light System Used on Emergency Vehicles

RATIONALE

The document was revised to unify the terminology and test methods with other Emergency Warning Lights & Devices documents. Also, changes were made to remove the duplication of test requirements between this document and SAE J595 and SAE J845 such that EWD Lamp Assemblies tested under those standards may be more easily evaluated per this document.

2.1.1 - SAE Publications section revised to remove publications not referenced within document. Removed SAE J575 and SAE J1889.

3.4, 3.5, 3.6, 3.7, 3.8 - Terminology is revised to match adopted terms of SAE J845: Lower Level Optical Warning Devices, Optical Power, EWD Lamp Assembly, Optical Warning Device, and Upper Level Optical Warning Devices.

3.9 - Updated Figure 1 to remove split zones previously used for intermediate vehicle size.

4.1.3 - Removed along with Section 7.

5.1 - Reworded to standardize testing to SAE J845 methods.

5.2 - Photometric Tests section now refers to SAE J845 in order to standardize test setup, procedure, and process.

6.3.2, 6.3.2.3, 6.4 - For consistency with industry definitions and practices: Length specified for midship device requirement revised to 7.6 m (25 feet), (previously 6.7 m (22 feet)).

6.4.1.4/6.4.2.2 – Steady burning statement moved from 6.2.1 in order to be more closely tied to the applicable test.

6.4.2 (Previous) - Intermediate Emergency Vehicle section removed. Industry practice is to utilize the large vehicle requirements for vehicles in the category. The adjustment in length and height in other sections allows many vehicles previously defined as Intermediate to be categorized as Small.

6.4.2 - Small vehicle height revised to 96 inches, was 82 inches.

6.4.2.2 – “Level” column removed from Tables 3A and 3B, no longer applicable.

7 - Guidelines section removed as this is not industry practice and is unwieldy and difficult in actuality.

“Optical Warning Device” is substituted for “Warning Device” throughout document.

References to “Intermediate Emergency Vehicles” removed throughout document.

Sections 5.2, 6.4, and 7 as well as Tables 3A and 3B renumbered due to edits above.

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1. SCOPE

This SAE Recommended Practice provides test procedures, requirements, and guidelines for the system of optical warning devices used on emergency vehicles.

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 J387 Terminology - Motor Vehicle Lighting

SAE J578 Color Specification

SAE J595 Directional Flashing Optical Warning Devices for Authorized Emergency, Maintenance, and Service Vehicles

SAE J845 Optical Warning Devices for Authorized Emergency, Maintenance, and Service Vehicles

SAE J1330 Photometry Laboratory Accuracy Guidelines

SAE J1690 Flashers

3. DEFINITIONS

3.1 ACTIVE HORIZONTAL AND VERTICAL ANGLES OF LIGHT EMISSION

The angles, specified by the manufacturer of the optical warning device, throughout which the optical warning device contributes optical power to the lighting system.

3.2 CENTER OF THE LENS

For optical warning devices with one lens, the geometric center of the lens. For optical warning devices with multiple lenses, the geometric center of the array of lenses.

3.3 EMERGENCY VEHICLE

An ambulance, fire apparatus, police car, or other vehicle which is permitted by law to call for the right of way and violate the rules of the road while responding to an incident affecting the public safety and to block the public road while at the scene of such an incident.

3.4 LOWER LEVEL OPTICAL WARNING DEVICES

Warning devices mounted with the center of the lens between 46 cm and 157 cm (18 inch and 62 inch) above grade.

3.5 OPTICAL POWER

The integration of the luminous intensity of the flashing EWD lamp assembly for a time of 60 seconds (1dt). Units are Candela·s/min.

3.6 EWD LAMP ASSEMBLY

Any single, independently mounted, light-emitting component in the lighting system. An Emergency Warning Device (EWD) lamp assembly may consist of a single optical element or a fixed array of any number of optical elements whose geometric positioning relative to each other is fixed by the manufacturer of the device and not intended to be modified. To be considered a single source, the optical elements must be adjacent and operate simultaneously in all modes if the mode of the device is vehicle operator adjustable.

3.7 OPTICAL WARNING DEVICE

A manufactured assembly of one or more EWD Lamp Assemblies.

3.8 UPPER LEVEL OPTICAL WARNING DEVICES

Warning devices mounted with the center of lens at a height greater than 157 cm (62 inch) above grade.

3.9 ZONES

For the purpose of defining and measuring the required optical performance of upper and lower level optical warning devices, the upper and lower warning levels shall each be divided into four warning zones. The four zones shall be determined by drawing lines through the geometric center of the emergency vehicle at 45 degrees to a line lengthwise of the emergency vehicle through the geometric center.

The four zones shall be designated A, B, C, and D in a clockwise direction with zone A to the front of the emergency vehicle. (See Figure 1)

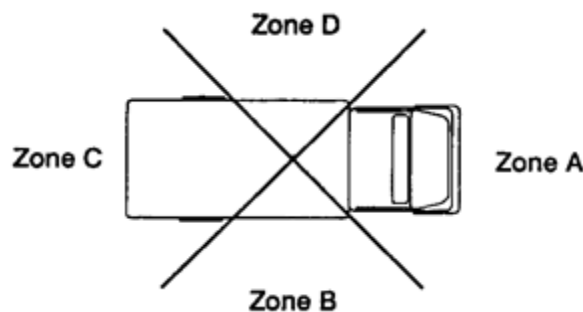


Figure 1 - Warning zones

3.10 ZONE TOTAL

A zone total reflects the combined performance of the individual optical warning devices oriented as installed on the vehicle when viewed along the perimeter of a circle of 30.5 m (100 feet) radius from the geometric center of the vehicle. The zone total is the sum of the optical power of all the devices that project signals of permissible color into the zone as measured at 5 degree increments along H.

There are 19 measurement points in Zones A, B, C, and D. The calculation of the upper level zone totals assumes that all upper level light sources are mounted at the geometric center of the vehicle and at the same height above grade. The calculation of the lower level zone totals assumes that all lower level light sources are mounted at the geometric center of the vehicle and at the same height above grade.