

The Administrator of the National Highway Traffic Safety Administration, Jonathan Morrison, signed the following notice of proposed rulemaking (NPRM) on October 22, 2026, which the agency has submitted for publication in the Federal Register. NHTSA has taken steps to ensure the accuracy of this version of the NPRM. However, once available, please refer to the official version of the forthcoming Federal Register publication, which will appear on the Government Printing Office's FDsys website (www.federalregister.gov) and on Regulations.gov (<https://www.regulations.gov/docket/NHTSA-2026-1519>). Once the official version of this document is published in the Federal Register, this version will be removed from the Internet and replaced with a link to the official version.

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DEPARTMENT OF TRANSPORTATION

National Highway Traffic Safety Administration

49 CFR Part 571

[Docket No. NHTSA-2026-1519]

RIN 2127-AM70

Federal Motor Vehicle Safety Standards; Modernization of FMVSS No. 108 to Accommodate ADS-Equipped Vehicles.

AGENCY: National Highway Traffic Safety Administration (NHTSA), U.S. Department of Transportation (DOT).

ACTION: Notice of proposed rulemaking.

SUMMARY: NHTSA is proposing to amend Federal Motor Vehicle Safety Standard (FMVSS) No. 108, "Lamps, reflective devices, and associated equipment." The proposed updates to the standard are intended to remove unnecessary requirements and to provide design flexibility without impact on vehicle safety. The first two proposed changes would amend the test voltage specification for integral beam type headlamps and remove requirements that apply to vertical headlamp arrangements. Further proposed changes address vehicles equipped with Automated Driving Systems (ADS) that do not have manually operated driving controls. Those

modifications would limit the application of certain requirements for manually operated turn signal, hazard warning signal, and beam switching controls to vehicles with manually operated driving controls. The changes are intended to address regulatory burdens and costs associated with equipment that does not fulfill the same purpose or provide safety benefits in an ADS-equipped vehicle without manually operated driving controls as in a vehicle with such controls. The changes would also narrow certain requirements for telltales to vehicles with manually operated driving controls and incorporate the term “telltale” where appropriate throughout the standard. Finally, a proposed addition to the standard would allow cyan-colored ADS marker lamps as optional motor vehicle lighting equipment in ADS-equipped vehicles.

DATES: Comments should be submitted no later than **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

ADDRESSES: You may submit comments identified by the docket number in the heading of this document through any of the following methods:

- *Electronic submissions:* Go to the Federal eRulemaking Portal at <http://www.regulations.gov>. Follow the online instructions for submitting comments.
- *Fax:* (202) 493-2251.
- *Mail or Hand Delivery:* Docket Management, U.S. Department of Transportation, 1200 New Jersey Avenue S.E., West Building, Suite W58-213, Washington, D.C. 20590, between 9 a.m. and 5 p.m., Monday through Friday, except on Federal holidays. To be sure someone is there to help you, please call (202) 366-9826 or (202) 366-9317 before coming.

Instructions: All submissions must include the agency name and docket number for this notice. Note that all comments received will be posted without change to

<http://www.regulations.gov>, including any personal information provided. Please see the Privacy Act heading below.

Privacy Act: Anyone is able to search the electronic form of all comments received into any of NHTSA's dockets by the name of the individual submitting the comment (or signing the comment, if submitted on behalf of an association, business, labor union, etc.). You may review DOT's complete Privacy Act Statement in the Federal Register published on April 11, 2000 (65 FR 19477-78) or you may visit <https://www.transportation.gov/privacy>.

Docket: For access to the docket to read background documents or comments received, go to <http://www.regulations.gov> or the street address listed above. Follow the online instructions for accessing the dockets via internet.

Confidential Business Information: If you claim that any of the information in your comment (including any additional documents or attachments) constitutes confidential business information within the meaning of 5 U.S.C. 552(b)(4) or is protected from disclosure pursuant to 18 U.S.C. 1905, please see the detailed instructions given under the Public Participation heading of the SUPPLEMENTARY INFORMATION section of this document.

FOR FURTHER INFORMATION CONTACT: For technical issues, you may contact Ms.

Lina Valivullah, Office of Automation Safety; Telephone: 202-366-1810; Email:

Lina.Valivullah@dot.gov; Facsimile: 202-493-2739 or Mr. Gerald Devries, Office of Crash

Avoidance, Rulemaking; Telephone: 202-366-1810; Email: Gerald.Devries@dot.gov; Facsimile:

202-493-2739. For legal issues, you may contact Mr. David Jasinski, NHTSA Office of the Chief

Counsel, Email: David.Jasinski@dot.gov. The mailing address of these officials is: National

Highway Traffic Safety Administration, 1200 New Jersey Avenue, S.E., Washington, D.C.

20590.

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I. Executive Summary

NHTSA proposes to amend Federal Motor Vehicle Safety Standard (FMVSS) No. 108, “Lamps, reflective devices, and associated equipment.” FMVSS No. 108 applies to passenger cars, multipurpose passenger vehicles, trucks, buses, trailers (except pole trailers and trailer converter dollies), and motorcycles; certain retroreflective sheeting and reflex reflectors; and lamps, reflective devices, and associated equipment for replacement of like equipment on

vehicles to which the standard applies. In an effort to enable innovation and to provide flexibility in vehicle design, the proposed modifications would: (1) update requirements related to headlamp test voltage; (2) provide flexibility for headlamp upper and lower beam mounting arrangements; (3) narrow the application of certain requirements for manually operated turn signal, hazard warning signal, and beam switching controls to vehicles with manually operated driving controls; (4) narrow certain requirements for telltales to vehicles with manually operated driving controls and incorporate the term “telltale” where appropriate throughout the standard; and (5) allow for equipping vehicles with automated driving system (ADS) marker lamps and standardizing their performance.

First, FMVSS No. 108 currently requires headlamps in all vehicles for which it applies, except trailers, to meet the applicable performance requirements when tested at 12.8 volts. NHTSA proposes to revise the test voltages for integral beam headlamps. Because the market has moved to integral beam headlamps, NHTSA is proposing to eliminate standardized voltage for those lamps. The need for readily available replacement lamps, as a routine maintenance item, is limited compared to when this requirement was put into place. Other headlamp types such as replaceable bulb headlamps and sealed beam headlamps would continue to be tested at 12.8 volts.

Second, FMVSS No. 108 states that where upper and lower beams are installed in a vertical orientation, the lower beams must be provided by the uppermost headlamp.¹ NHTSA proposes to remove the current requirements associated with vertical headlamp arrangements. The minimum and maximum mounting height requirements for headlamps would be unaffected

¹ In FMVSS No. 108, *upper beam* means a beam intended primarily for distance illumination and for use when not meeting or closely following other vehicles. *Lower beam* means a beam intended to illuminate the road and its environs ahead of the vehicle when meeting or closely following another vehicle.

by the removal of the vertical arrangement requirements. Considering advancements in lighting technology, NHTSA has tentatively concluded that it is possible to provide adequate illumination for safe driving without requiring the lower beam to be placed above the upper beam.

Third, there are several proposed changes that pertain to vehicles equipped with an ADS that do not have any manually operated driving controls such as a steering wheel or service brake pedal.² Although these vehicles currently are not available for consumer purchase, some manufacturers and rideshare operators have deployed such vehicles in a number of cities, and several others are developing and testing such vehicles throughout the United States. NHTSA is engaging in a process to remove unnecessary barriers to technological innovation while ensuring motor vehicle safety is not compromised. For FMVSS No. 108, NHTSA proposes to remove references to a driver in the definition of *vehicular hazard warning signal operating unit* to clarify its application to vehicles operated by a human or an ADS. The requirement pertaining to ease of actuation of multiple switches by a person driving the vehicle would be limited to vehicles with manually operated driving controls.³ FMVSS No. 108 requires all vehicles to which it applies, except for trailers, to be equipped with a turn signal operating unit. NHTSA has tentatively concluded that the self-canceling and manually operated control requirements in the current standard are unnecessary for turn signal operating units that are installed on vehicles

² Per 49 CFR 571.3, *manually operated driving controls* means a system of controls:

- (i) That are used by an occupant for real-time, sustained, manual manipulation of the motor vehicle's heading (steering) and/or speed (accelerator and brake); and
- (ii) That is positioned such that they can be used by an occupant, regardless of whether the occupant is actively using the system to manipulate the vehicle's motion.

³ Edits proposed or adopted in other modernization notices have been structured in the negative (*i.e.*, vehicles *without* manually operated driving controls are excepted from certain requirements) or in juxtaposition (*i.e.*, separate provisions applicable to vehicles with or without manually operated driving controls are placed next to each other). This NPRM proposes edits in the positive (*i.e.*, requirements are retained on vehicles *with* manually operated driving controls). NHTSA intends for each approach to function in the same manner and draw the same distinction between vehicles, where each vehicle is categorized as either with or without manually operated driving controls.

without manually operated driving controls; thus the proposed modifications narrow those requirements to vehicles with manually operated driving controls. The requirement to have a turn signal operating unit would be retained, such that vehicles without manually operated driving controls would still be required to have a means for operating the turn signal lamps (which could be non-manual). The proposed modifications would not change the self-canceling and manual control specifications for turn signal operating units installed on vehicles with manually operated driving controls. FMVSS No. 108 also requires all vehicles to which it applies, except trailers, to be equipped with a headlamp beam switching device. NHTSA proposes to limit the current requirements associated with operation by a driver's hand or foot to apply only to vehicles with manually operated driving controls. The proposed modifications would not change the requirements for vehicles with manually operated driving controls. A vehicle without manually operated driving controls would still be required to have a means of switching headlamp beams (which could be non-manual).

Fourth, NHTSA proposes to limit the requirements for telltales for turn signals and upper beam headlamps to apply only to vehicles with manually operated driving controls. NHTSA also proposes to replace the words "pilot indicator" or "indicator" with "telltale" as appropriate throughout the standard to align with definitions and usage in FMVSS No. 101, "Controls and Displays."

Finally, NHTSA proposes to incorporate specifications for an ADS marker lamp as optional equipment in ADS-equipped vehicles. FMVSS No. 108 currently has no specific requirements for a lamp with the purpose of communicating to other road users that a vehicle is operating without the expectation that an occupant is monitoring the roadway (*i.e.*, the vehicle

ADS is engaged in full, active control of the driving task).⁴ This NPRM proposes ADS marker lamp requirements applicable if such a lamp is equipped. The proposal is due to the development of a consensus industry standard for ADS marker lamps,⁵ the increased use of this type of lamp on vehicles internationally, and the agency's need to ensure that the new lighting performs in a manner that does not detract from existing levels of motor vehicle safety. NHTSA tentatively concludes that a standardized ADS marker lamp will mitigate the risk of manufacturers implementing non-standardized lamp applications, which may become a nuisance, cause confusion, or otherwise have potential negative safety outcomes. Like other lamps regulated through FMVSS No. 108, the proposed ADS marker lamp criteria include the number of lamps, mounting locations, activation, visibility, color, and photometric intensity.

II. Background

FMVSS No. 108, "Lamps, reflective devices, and associated equipment," specifies requirements for original and replacement lamps, reflective devices, and associated equipment. The purpose of FMVSS No. 108 is to reduce traffic crashes, and deaths and injuries resulting from traffic crashes, by providing adequate illumination of the roadway and by enhancing the conspicuity of motor vehicles on roadways so that their presence is perceived, and their signals understood, both in daylight and in darkness or other conditions of reduced visibility.

a. Test Voltage

In 1967, FMVSS No. 108 standardized sealed beam headlamps and standardized the voltages at which they were tested to be 12.8 volts.⁶ This standardization provided commonality

⁴ The driving task includes, but is not limited to, steering, accelerating, braking, and monitoring the vehicle surroundings.

⁵ SAE International Standard J3134_202512 "Automated Driving System (ADS) Marker Lamp."

⁶ 32 FR 2418.

and supported readily available headlamps as replacement equipment given the relatively short lifespan of those headlamps. This voltage was useful for the lighting technology at the time and allowed headlamps to provide the required lighting output to satisfy the need for safety. As lighting technologies evolved from sealed beam headlamps into replaceable bulb headlamps, the voltage requirements were carried forward to continue providing that commonality and support the availability of headlamp replaceable light sources.⁷ The progression in headlighting system design has moved from common sealed beams to common headlamp replaceable light sources, to integral beam headlamps that are specifically designed for the particular vehicle model on which they are installed as original equipment. Current integral beam headlamps use light sources which have a much longer lifespan than the incandescent and halogen sources used in the past. These types of illumination sources are not dependent on any particular voltage to provide adequate illumination and do not routinely fail prior to the end of the vehicle's lifespan. As such, NHTSA is proposing to revise the test voltage specifications for integral beam headlamps such that NHTSA tests integral beam headlamps at the voltage stipulated by the manufacturer. NHTSA seeks comment regarding the need to extend this revision to test voltage to daytime running lights.

b. Headlamp Mounting Orientation

At the time FMVSS No. 108 was originally adopted, headlamp light source technology provided relatively low luminous flux. To provide the maximum illumination of the road in front of the vehicle, it was important to place the headlamps as high as practicable within limits to avoid excessive glare.⁸ The standard provided minimum and maximum heights for the placement

⁷ 48 FR 1992.

⁸ 32 FR 2419.

of the upper and lower beams. An additional requirement for the orientation of the two beams was given for upper and lower beams that were vertically oriented. With the intent of providing the maximum amount of forward illumination by the lower beam, the standard requires that the lower beam be placed above the upper beam in a vertical headlamp arrangement.⁹ With the increase in luminous flux provided by current headlamp technologies, this requirement has become outdated. Therefore, NHTSA is proposing to remove the requirements for vertical headlamp arrangements to allow lower beam headlamps to be placed below the upper beam when vertically arranged.

c. ADS-Equipped Vehicles Without Manually Operated Driving Controls

An ADS commonly is considered to be a combination of hardware and software that can perform all real-time operational and tactical functions required to operate a motor vehicle on a sustained basis¹⁰—functions that traditionally have been performed by a human driver using manually operated driving controls. As defined in 49 CFR 571.3 and used throughout this document, *manually operated driving controls* means a system of controls: (i) used by an occupant for real-time, sustained, manual manipulation of the motor vehicle’s heading (steering) and/or speed (accelerator and brake); and (ii) positioned such that they can be used by an occupant, regardless of whether the occupant is actively using the system to manipulate the vehicle’s motion. In an ADS-equipped vehicle designed to be operated only by an ADS, manually operated driving controls are not inherently necessary.

⁹ 54 FR 20066.

¹⁰ See, e.g., SAE, Taxonomy and Definitions for Terms Related to Driving Automation Systems for On-Road Motor Vehicles, J3016_202104 (April 30, 2021), *available at* https://www.sae.org/standards/content/j3016_202104/; Tex. Transp. Code § 545.451.

NHTSA has published prior *Federal Register* notices requesting comment, proposing changes, and updating existing regulations to address vehicle automation. These notices include a request for comment (RFC), “Removing Regulatory Barriers for Vehicles with Automated Driving Systems,” published on February 13, 2018,¹¹ and a subsequent advance notice of proposed rulemaking (ANPRM) with the same title published on May 28, 2019.¹² The RFC posed questions about identifying and addressing regulatory barriers for vehicles that lack traditional manual controls or have unconventional seating. The ANPRM focused on the challenges of testing and verifying compliance for vehicles without traditional manual controls. A separate notice of proposed rulemaking (NPRM), “Occupant Protection for Automated Driving Systems,”¹³ was published in 2020, with the corresponding final rule, “Occupant Protection for Vehicles with Automated Driving Systems,” published on March 30, 2022.¹⁴ The rulemaking focused on crashworthiness standards for ADS-equipped vehicles without manual driving controls, revising definitions and updating occupant protection standards to exclude vehicles specifically designed not to contain any occupants. The 2022 final rule also established the definition for *manually operated driving controls*. On December 3, 2020, NHTSA published an ANPRM titled, “Framework for Automated Driving Systems,” to discuss and request comment on the manner in which the agency would define, assess, and manage objectively the safety of ADS performance while ensuring the needed flexibility to enable further innovation.¹⁵ The ANPRM included recognition of a phased approach to addressing ADS safety, including

¹¹ 83 FR 6148.

¹² 84 FR 24433.

¹³ 85 FR 17624.

¹⁴ 87 FR 18560.

¹⁵ 85 FR 78058.

NHTSA's modernization of the FMVSS for ADS-equipped vehicles without traditional manual driving controls. Earlier this year, NHTSA published three NPRMs proposing to amend FMVSS No. 102, "Transmission shift position sequence, starter interlock, and transmission braking effect;" FMVSS Nos. 103 and 104, "Windshield defrosting and defogging systems" and "Windshield wiping and washing systems;" and FMVSS No. 110, "Tire selection and rims and motor home/recreation vehicle trailer load carrying capacity information for motor vehicles with a GVWR of 4,536 kilograms (10,000 pounds) or less;" to eliminate unnecessary barriers to vehicles without manually operated driving controls in furtherance of these modernization efforts.

This NPRM continues this task as applied to FMVSS No. 108, which was developed at a time when all vehicles were operated by human drivers who interacted with the manually operated driving controls installed in the vehicle, including the turn signal operating unit and the beam switching unit. As such, the standard sets driver-based requirements for these systems' controls which have had the unintended effect of creating regulatory barriers for ADS-equipped vehicles without manually operated driving controls. Therefore, NHTSA is proposing to revise the definition of *vehicular hazard warning system operating unit* and narrow the application of certain requirements for the turn signal, hazard warning signal, and beam switching controls. That said, NHTSA maintains that any vehicle equipped with manually operated driving controls, regardless of whether it is equipped with an ADS, must continue to meet all existing safety requirements.

d. ADS Marker Lamps

Existing and Emerging Standards

As ADS technology has developed, some participants in the industry have sought to create a standardized indication of active ADS operation by means of a marker lamp on the vehicle. SAE Standard J3134, originally issued May 2019 and revised December 2025, details the use and characteristics of an “Automated Driving System (ADS) Marker Lamp.” In this notice, reference to SAE Standard J3134 means the December 2025 version unless stated otherwise. The 2019 standard cited studies “suggest[ing] that road users prefer ADS-equipped vehicles to have additional signals to indicate when the vehicle’s ADS is engaged.” The original version also emphasized alignment with NHTSA’s Federal Automated Vehicles Policy and the United Nations Economic Commission for Europe (UNECE) Working Party on Lighting and Light Signaling (GRE) for ADS vehicle communication with other road users. The 2019 version of SAE J3134 specified requirements for marker lamps on the front of the vehicle while the updated version of the standard has specifications for rear and side ADS marker lamps as well. The updated rationale explains that rear and side ADS marker lamps are considered for regulation in UNECE and China, and that the American Association of Motor Vehicle Administrators (AAMVA) recommends their implementation to support law enforcement’s ability to identify if an ADS-equipped vehicle is being operated by the ADS or the driver.

The UNECE GRE established a Task Force to develop a harmonized standard for ADS lamps and has collaborated with stakeholders, including SAE International and Mercedes-Benz. UNECE has defined the target beneficiaries of the standard to be law enforcement, pedestrians, and other road users.¹⁶ The UNECE Working Party on Automated/Autonomous and Connected Vehicles (GRVA) has consulted with the UNECE GRE Task Force on Autonomous Vehicle

¹⁶ United Nations Economic Commission for Europe (UNECE), “Proposal for a New UN Regulation on Automated Driving System (ADS) External Light-Signalling,” Informal Document GRE-90-06, (April 2024), *available at* <https://unece.org/sites/default/files/2024-03/GRE-90-06e.pdf> (last accessed March 31, 2026).

Signaling Requirements (AVSR) and established its own recommendations. In general, “GRVA recommends the establishment of uniform provisions for a light signal to communicate the operational status of the ADS,” noting potential benefits for law enforcement.¹⁷ GRVA, though, does not recommend requiring additional lighting for ADS-operated vehicles in UNECE regulation due to uncertainty and the need for further research.

Supporting Research and Recommendations

The results of an international survey led by the Japanese National Traffic Safety and Environment Laboratory were presented at the 92nd GRE in April 2025.¹⁸ The survey included over 4,400 drivers in the United Kingdom, Japan, United States, and Germany. These respondents were asked to provide their opinion regarding the need for, and use of, marker lamps to indicate operation of a vehicle by an ADS. The majority of respondents in each country, including upwards of 80 percent of respondents in the United States and the United Kingdom, responded affirmatively as to whether ADS-equipped vehicles should be equipped with a marker lamp. Less specific to marker lamps, around 70 percent of respondents in each country affirmed that the operating status (ADS or manual driving mode) of an ADS-equipped vehicle should be distinguishable from the outside of the vehicle.

¹⁷ United Nations Economic Commission for Europe (UNECE), “GRVA Recommendations on ADS External Light-Signalling,” Informal Document WP.29-188-10, (November 2022), *available at* <https://unece.org/sites/default/files/2022-11/WP.29-188-10e.pdf> (last accessed March 31, 2026).

¹⁸ United Nations Economic Commission for Europe, Proposal for turquoise lighting for ADS-equipped vehicles (Informal document GRE-92-27e), Working Party on Lighting and Light-Signalling (GRE), 92nd session (2025), *available at* <https://unece.org/sites/default/files/2025-04/GRE-92-27e.pdf>.

Mercedes-Benz expressed interest in increasing other road users' acceptance and confidence in ADS-equipped vehicles and claimed that the ADS marker lamp is an intuitive way to communicate that the ADS is engaged in operating the vehicle. Mercedes-Benz presented recommendations in a meeting with NHTSA and at the 89th GRE session via the AVSR task force.¹⁹ Mercedes-Benz provided an analysis with respect to the placement and integration of ADS marker lamps and stated that a 360-degree view of the cyan lamps would be beneficial to law enforcement and other road users without leading to distraction or confusion. Mercedes-Benz suggested that concerns regarding ADS marker lamps, such as a lack of understanding and confusion about the meaning, could be mitigated through educational measures before and during market launch. Mercedes-Benz has also conducted a two-year on-road validation of ADS marker lamps in California from 2023 to 2025, using five vehicles to gather data to understand how other road users interacted with vehicles with ADS marker lamps.

In response to the changing market and materials reviewed and submitted, NHTSA is proposing to amend FMVSS No. 108 to incorporate standardized specifications for front, rear, and side ADS marker lamps if they are installed on a motor vehicle. NHTSA is not proposing to mandate ADS marker lamps on all vehicles equipped with ADS. The proposal largely, but not entirely, aligns with the specifications in SAE J3134.

III. Proposed Changes

a. Integral Beam Headlamp Test Voltage

FMVSS No. 108 S14.2.5.4 states that headlamps are tested with a direct current test voltage of 12.8 volts $\pm$ 20 mv, and does not distinguish between headlamp type. The

¹⁹ Automated Driving System (ADS) Marker Lamps, Mercedes-Benz AG Concept presented at 89 89th GRE Session via TF AVSR (July 15, 2024), *available at* <https://wiki.unece.org/download/attachments/254181542/AVSR-18-02%20-%20ADS%20Marker%20Lamps%20-%20Mercedes-Benz%20AG%20Concept%2089th%20GRE.pdf?api=v2>.

standardization of headlamp voltage supported readily available replacement lamps for incandescent and halogen technology which did not last the life of the vehicle.²⁰ In S14.6.4.1.1, the test voltage and current are specified. The product of the voltage and current is power. NHTSA is proposing to change the test from specific voltage and current values to power in watts. This will allow a manufacturer of an integral beam headlamp that operates at a design voltage other than 12.8 volts to have an equivalent test to systems that operate at 12.8 volts.

FMVSS No. 108 S6.5.3.2 requires that each original and replacement equipment headlamp be marked with its voltage and part or trade number. In order to ensure that integral beam headlamps are tested at the proper voltage for the given device if different from 12.8 volts, NHTSA is proposing to test integral beam headlamps at the voltage for which they are marked. NHTSA is not proposing to change the marking requirements for integral beam headlamp assemblies. As a result, the voltage for which a headlamp has been certified will continue to be marked on each lamp and can be referenced for independent testing.

NHTSA has not identified that the same considerations exist for replaceable bulb and sealed beam headlamps. Therefore, NHTSA is not proposing to change the requirements for those headlamp types, but seeks comment on whether doing so is appropriate.

b. Vertical Headlamp Arrangements

For vehicles with a vertical arrangement of the upper and lower beam headlamps, the standard requires that the lower beams be placed above upper beams. With the increase in luminous flux provided by current headlamp technologies, NHTSA has tentatively concluded that the requirement for placing the lower beam above the upper beam is no longer necessary and

²⁰ 54 FR 20084.

may contribute negatively to glare.²¹ In developing this proposal, NHTSA considered increasing the minimum luminous flux output requirements to reflect the current market, but tentatively concluded that change is not needed because current minimum headlamp performance for seeing distance is being driven by market forces and not regulation.

NHTSA proposes to remove the requirement in S6.1.3.5.1 that lower beams be placed above upper beams in a vertical headlamp arrangement. Doing so would allow manufacturers design flexibility to change the arrangement of the upper and lower beams in a vertical headlamp arrangement without affecting safety. NHTSA does not propose any changes to the minimum and maximum heights for the placement of the upper and lower beams, which ensures that there are no negative safety outcomes from the proposed change to the allowed lamp arrangement. The requirements for a horizontal headlamp arrangement also remain unchanged, as the lower beam being outboard of the upper beam provides secondary functionality in showing the width of the vehicle.

c. Turn Signal, Hazard Warning Signal, and Beam Switching Equipment

NHTSA seeks to address the application of certain existing crash avoidance standards to ADS-equipped vehicles without manually operated driving controls. In this document, NHTSA proposes to limit the application of certain requirements for turn signal, beam switching, and hazard warning signal controls to vehicles with manually operated driving controls. The proposed changes are not intended to address ADS performance, but rather to address which turn signal, beam switching, and hazard warning signal equipment is necessary in a vehicle designed solely to be operated by an ADS. NHTSA expects all ADS-operated vehicles to be equipped

²¹ NHTSA, Summary of Headlamp Research at NHTSA, DOT HS 811 006 (July 2008), *available at* <https://www.nhtsa.gov/sites/nhtsa.gov/files/811006.pdf>.

with the required vehicle lamps, and to activate and deactivate the lamps in accordance with the rules of the road. In addition to FMVSS enforcement, NHTSA will not hesitate to use its strong and broad defect enforcement authority to address unsafe ADS performance.

FMVSS No. 108 requires vehicles to be equipped with a turn signal operating unit that meets the requirements specified in S9. A turn signal operating unit is the part of a turn signal system by which the operator of a vehicle causes the signal units to function. A turn signal operating unit that is installed on passenger cars, multipurpose passenger vehicles, trucks, and buses less than 2,032 mm in overall width is required to be self-canceling by steering wheel rotation and capable of cancellation by a manually operated control. FMVSS No. 108 also requires all vehicles for which it applies, except for trailers, to be equipped with a headlamp beam switching device. The term “headlamp beam switching device” is not defined in S4, *Definitions*. However, S9.4 *headlamp beam switching device*, requires that each vehicle have a means for switching between lower and upper beams designed and located so that it may be operated conveniently by a simple movement of the driver’s hand or foot.²²

For an ADS-equipped vehicle without manually operated driving controls, the agency has tentatively concluded there is no safety need for turn signal operating units to be self-canceling by steering wheel rotation. These vehicles lack steering wheels, and the vehicle’s heading is controlled by the ADS. Although NHTSA has considered creating an equivalent requirement based on measurement within the steering system, NHTSA has determined tentatively that such a requirement is unnecessary and overly prescriptive because turn signal activation and cancellation will be programmed within the ADS to comply with traffic laws, and unlike a human driver, the system cannot forget that the turn signals are active. Therefore, the safety

²² 49 CFR 571.108 S9.4.

purpose of the self-canceling requirement for turn signal operating units does not exist for ADS-equipped vehicles without manually operated driving controls.

In addition, for such vehicles, NHTSA has tentatively concluded that there is no safety purpose to require that the turn signal operating unit be manually cancelable in vehicles that are operated by an ADS and do not have manually operated driving controls. Occupants in such vehicles have no responsibility for activating or deactivating the turn signal operating units. The operation of the turn signal units is managed by the ADS. For these reasons, NHTSA proposes to modify S9.1.1 to except vehicles without manually operated driving controls from the requirements of S9.1.1 related to steering wheel rotation and manual cancellation.

Similarly, the agency has tentatively concluded there is no safety need for headlamp beam switching devices installed on ADS-equipped vehicles without manually operated driving controls to be operable by hand or foot. Headlamp beam selection is an important safety responsibility because surrounding vehicles may experience hazardous levels of glare if a vehicle operator activates the upper beam when meeting or closely following other vehicles. For vehicles without manual controls, the ADS, and not a vehicle occupant, would be responsible for switching between lower and upper beams consistent with the need for visibility and the rules of the road on which the vehicle operates. NHTSA proposes to modify S9.4 through reordering of the text and additional language to clarify the exception to the design requirement for the headlamp beam switching device in vehicles without manually operated driving controls.

If finalized as proposed, vehicles without manually operated driving controls still would be required to be equipped with a turn signal operating unit, because turn signals are intended to benefit other road users, and a headlamp beam switching device (that is not required to be designed and located for hand or foot operation), because an ADS may still rely on the increased

visibility provided by high beams.²³ However, the specifications related to steering wheel rotation and to hand or foot operation would no longer apply to the turn signal operating units and headlamp beam switching devices in those vehicles. In addition, the proposed updates would not affect the requirements for vehicles with manually operated driving controls. NHTSA seeks comment on whether this approach ensures all vehicles are equipped with appropriate lighting equipment while removing design barriers to vehicles without manual controls.

NHTSA also proposes to update the language and clarify the requirements for actuation of the vehicular hazard warning signal operating unit. In FMVSS No. 108, *vehicular hazard warning signal operating unit* is defined as a driver-controlled device which causes all required turn signal lamps to flash simultaneously to indicate to approaching drivers the presence of a vehicular hazard. The performance requirements in section S9.6.2 require that, if actuation of the hazard function requires the operation of more than one switch, a means must be provided for actuating all switches simultaneously by a single driver action.

NHTSA proposes to remove references to a driver in the definition of “vehicular hazard warning signal operating unit” to clarify its application to vehicles operated by a person or an ADS. The revised definition would refer to the operator of a vehicle rather than the driver. The requirement for the vehicular hazard warning signal operating unit in S9.6.2 pertaining to ease of actuation of multiple switches by a person driving the vehicle would also be amended to apply only to vehicles with more manually operated driving controls. NHTSA tentatively concludes that the requirement only serves a safety purpose in a vehicle equipped with manually operated driving controls. The requirement is intended to ensure ease of operation for a person driving a vehicle, such that multiple actions are not required to activate the hazard warning signal.

²³ 49 CFR 571.108 S6.6.1.

However, an ADS would be capable of activating multiple switches simultaneously without issue.

Applicability of Existing NHTSA Chief Counsel Interpretations

Pursuant to 49 CFR 501.8(d)(5), the Administrator has delegated to the Chief Counsel the authority to “[i]ssue authoritative interpretations of the statutes administered by NHTSA and the regulations issued by the agency.” Over the years, NHTSA Chief Counsels have issued a number of interpretations related to automated activation of the hazard warning signal. NHTSA has tentatively determined that, if finalized, this amendment would not change the substance of NHTSA’s existing interpretations regarding automatic activation of the hazard warning signal by vehicles with manually operated driving controls. In a letter of interpretation to John Frooshani of North American Subaru in 2025, the Chief Counsel explained that “NHTSA’s interpretations of ‘vehicular hazard warning signal operating unit’ read FMVSS No. 108 as broadly restricting automatic activation of the hazard signal...but [allow] automatic activation on a case-by-case basis under limited circumstances consistent with the purpose of the hazard warning signal stated in the standard.”²⁴ These interpretations are based on two aspects of FMVSS No. 108. First, that the term “driver controlled device” in the definition of *vehicular hazard warning signal operating unit* means that the signal may not be activated automatically.²⁵ Second, that certain automatic activations would impair the effectiveness of lighting equipment required by the standard in violation of S6.2.1.²⁶ If this proposed rule is finalized, for vehicles with manually-

²⁴ Letter to John Frooshani, July 22, 2025, *available at* <https://www.nhtsa.gov/interpretations/ncc-230607-001-571108-automatic-activation-hazard-warning-signal-nonresponsive>. The purpose stated in the standard is “to indicate to approaching drivers the presence of a vehicular hazard.”

²⁵ Letter to Eric Reed, Feb. 29, 2000, *available at* <https://www.nhtsa.gov/interpretations/reedzvtv>.

²⁶ Letter to Mark Steele, Oct. 7, 1999, *available at* <https://www.nhtsa.gov/interpretations/20662zvtv>; and Letter to Brian Latouf, Nov. 18, 2016, *available at* <https://www.nhtsa.gov/interpretations/16-1289-gm-hazard-innovative-28-apr-16-rsy>.

operated driving controls, NHTSA would no longer read the definition of *vehicular hazard warning signal operating unit* to bar automatic activation on the grounds that the operating unit must be exclusively driver controlled. However, NHTSA would carry forward the conclusions of its interpretations on the second basis. That is, in vehicles with manually operated driving controls, automatic hazard signal activation is supplemental equipment and S6.2.1 therefore limits automatic hazard signal activation to circumstances that do not impair required lighting.²⁷ Under this reading, NHTSA considers whether the activations impair other required lighting or if they lack any relationship to the original purpose of the hazard warning signal or could create confusion about the signal's meaning. Such inappropriate activations include, for example, during braking events,²⁸ after “sudden release of the accelerator pedal,”²⁹ or as a “deceleration warning system”³⁰ where it would conflict with the purpose of the stop lamps. In vehicles without manually operated driving controls, automatic vehicular hazard warning signal operation would not be viewed as supplemental equipment subject to S6.2.1. NHTSA seeks comment on whether these interpretations are appropriate to address ADS activation of the hazard warning signal, or whether incorporation into regulatory text is necessary.

d. Telltales

Section S6.6 of FMVSS No. 108 requires that vehicles for which the standard applies be equipped with a turn signal pilot indicator, an upper beam headlamp indicator, and a vehicular hazard warning signal pilot indicator that shall be in front of and in clear view of the driver.

²⁷ *Id.* at note 9.

²⁸ Daimler Trucks North America, LLC, Denial of Petition for Decision of Inconsequential Noncompliance, 88 Fed. Reg. 17291 (Mar. 22, 2023).

²⁹ Letter to David Coburn, Aug. 6, 1999, *available at* <https://www.nhtsa.gov/interpretations/19886ztv>.

³⁰ Letter to Jeffrey Echt, incoming received Mar. 10, 1995, *available at* <https://www.nhtsa.gov/interpretations/aia552l>.

Paragraph S9.3.6 also requires a change in the illumination of the turn signal pilot indicator to indicate failure of one or more turn signal lamps. Paragraph S9.8.4 specifies that if the vehicular hazard warning signal pilot indicator is not combined with the turn signal pilot indicator, it must emit a red color and have a minimum area equivalent to a 0.5 in diameter circle.

NHTSA proposes to rename the “indicators” to “telltales” to align with the definitions of telltales and indicators found in FMVSS No. 101. A telltale is defined in FMVSS No. 101 as “an optical signal that, when illuminated, shows the actuation of a device, a correct or improper functioning or condition, or a vehicle system’s failure to function.” FMVSS No. 101 defines indicator as a “device that shows the magnitude of the physical characteristics that the instrument is designed to sense.” The turn signal pilot indicator, upper beam headlamp indicator, and vehicular hazard warning signal pilot indicator convey information related to actuation of a device or failure of a device, which aligns with the definition of a telltale rather than an indicator. Changing the nomenclature in FMVSS No. 108 for consistency will improve clarity of the standard.

The telltales (referred to as indicators in the current standard) for turn signal lamps, upper beam headlamps, and the vehicle hazard warning signal specified in FMVSS No. 108 are intended for, and are required to be in view of, the driver of the vehicle to show the activation state of the respective device. This signal provides information to the driver to confirm that the turn signal lamp, upper beam headlamp, or hazard warning signal is in the desired state. A driver is defined in 49 CFR 571.3 as the occupant of a motor vehicle seated immediately behind the steering control system. By this definition, a vehicle without manually operated driving controls does not have a driver.

In an ADS-operated vehicle, the ADS, rather than a human driver, would control the activation of the turn signals, headlamps, and hazard warning signal. NHTSA also expects an ADS to be aware of the operational status of each safety critical vehicle system and subsystem and respond appropriately to any identified degradations, failures, and malfunctions. Because the turn signals and headlamps would not be controlled by a person, NHTSA has tentatively concluded that the corresponding telltales do not address a safety need in ADS-equipped vehicles that do not have manually operated driving controls. The ADS would control and monitor the status of the headlamps and signals as part of normal vehicle operation. For these reasons, NHTSA proposes to limit the requirements to display these telltales to vehicles with manually operated driving controls. Manufacturers and fleet operators of ADS-equipped vehicles may choose to provide vehicle passengers with trip information, and NHTSA anticipates that they would do so to satisfy consumer demand even if not strictly necessary to meet the need for motor vehicle safety. Because turn signal telltales are also used to indicate a lamp failure in S9.3.6, NHTSA is proposing an alternate requirement in S9.3.6 to provide a lamp failure telltale in clear view of all designated seating positions if the vehicle does not have turn signal telltales. NHTSA requests comment on the proposed changes to telltale requirements.

NHTSA also seeks comment on whether the vehicular hazard warning signal telltale requirement should apply to vehicles without manual controls. The current proposal does not limit the requirement for the hazard warning signal telltale to vehicles with manually operated driving controls. Whereas turn signals and upper beam headlamps are routinely used during normal driving, the vehicular hazard warning signals are used to indicate to approaching drivers the presence of a vehicular hazard. Vehicle occupants may benefit from knowing that the ADS determined it appropriate to activate the hazard warning signal. Passengers presented with a

hazard warning signal telltale can make decisions about whether and how to continue using the vehicle. NHTSA plans to initiate a separate rulemaking to address requirements for telltales and indicators in ADS-equipped vehicles across multiple FMVSS.³¹ NHTSA further encourages the use of supplemental notifications communicating safety-relevant information to passengers of ADS-operated vehicles via app notifications, in-vehicle alerts, or other methods. The specific format and content of such notifications would be determined by the manufacturer.

e. ADS Marker Lamps

NHTSA is proposing to amend FMVSS No. 108 to incorporate standardized specifications for front, rear, and side ADS marker lamps if they are installed on a motor vehicle. NHTSA has long maintained that highway traffic safety is enhanced by the familiarity of drivers and other road users (*e.g.*, pedestrians and cyclists) with established lighting schemes, which facilitates their ability to recognize the meaning that the lamps convey instantly and to respond accordingly. FMVSS No. 108 stipulates standardized lamp performance criteria, both for required lighting and certain optional lighting equipment, including the number of lamps, mounting locations, activation, visibility, color and lamp intensity. The standard does not bar installation of supplemental lighting equipment. However, under FMVSS No. 108 S6.2.1, no additional lamp, reflective device, or other motor vehicle equipment is permitted to be installed that impairs the effectiveness of lighting equipment required by FMVSS No. 108.³² In addition, 49 U.S.C. 30122 prohibits a manufacturer, distributor, dealer, rental company, or motor vehicle repair business from installing aftermarket lighting equipment if doing so would knowingly take

³¹ RIN 2127-AM07

³² For supplemental lighting equipment, impairment is generally evaluated on a case-by-case basis and NHTSA typically considers four aspects: intensity (*i.e.*, brightness), mounting location, activation pattern, and color. *E.g.*, Letter to Paul Schaye (Sep. 9, 2019), *available at* <https://www.nhtsa.gov/interpretations/571108-ama-schaye-front-color-changing-light> (last accessed January 29, 2026). These four aspects are non-exhaustive, and NHTSA can consider other aspects where relevant.

the vehicle out of compliance with FMVSS No. 108, such as by impairing the effectiveness of required lighting.

NHTSA is concerned that the introduction into the marketplace of differing and contradictory supplemental lighting intended to indicate ADS operation may generate confusion or distraction among drivers and other road users, which could have negative safety outcomes. In addition, certain applications, when installed as supplemental equipment, may cause impairment of equipment required by FMVSS No. 108, such as by masking nearby signal lighting, in violation of S6.2.1. Therefore, NHTSA has tentatively concluded that standardizing performance aspects for ADS marker lamps in FMVSS No. 108 will ensure that ADS marker lamps perform consistently throughout the fleet, limit the implementation of non-standardized lamp applications that may have potential negative safety outcomes by interfering with current required lighting equipment or distracting or confusing drivers, and provide regulatory certainty for manufacturers by establishing specifications for the lamp that manufacturers can implement without risking a violation of S6.2.1.

NHTSA has tentatively determined that it lacks sufficient information to conclude that there is a safety need to require the inclusion of ADS marker lamps on all vehicles equipped with an ADS. Therefore, NHTSA is proposing an “if equipped” standard for ADS marker lamps. This is intended to ensure that, if equipped, the lamps meet a minimum standard for performance. NHTSA is not proposing to mandate that all ADS-equipped vehicles have an ADS marker lamp but simply that any ADS marker lamp a manufacturer chooses to include must meet the proposed requirements. As this proposal would explicitly permit the optional installation and activation of ADS marker lamps in accordance with the proposed activation criteria, this would also prohibit ADS marker lamp installation on vehicles without ADS functionality.

To determine the appropriate specifications, NHTSA reviewed existing research and SAE Standards J3134 and J578. The proposed specifications are as follows.

With regard to activation pattern, NHTSA proposes that the lamp be “steady burning” when activated, which is consistent with SAE J3134 and with other marker lamps, such as identification lamps and clearance lamps, specified in FMVSS No. 108, but seeks comment on allowing ADS marker lamps to be flashed for signaling purposes. In addition to indicating ADS engagement, ADS marker lamps could potentially be used for signaling purposes to indicate the intended movement of the vehicle for the benefit of pedestrians and other road users. NHTSA is not aware of any research supporting this usage and seeks research-based comments related to signaling the vehicle’s intended movement to pedestrians and other road users.

With regard to color, NHTSA is proposing that the lamps be cyan, the blue-green color defined in SAE J578. This is consistent with SAE J3134, which cited studies that support use of a unique color for the ADS marker lamp.³³ NHTSA is concerned that if a current color standardized in FMVSS No. 108 for specific uses in required lighting, such as amber, red, or white, were to be used for the ADS marker lamp, it would not have clear meaning. SAE stated that experts from manufacturers, suppliers, and research organizations evaluated potential ADS lamp colors and that these evaluations supported the use of blue-green light color for ADS lamps.³⁴ SAE concluded that a unique color allows greater flexibility in mounting location and facilitates innovation for new automotive ADS lamps and chose the blue-green color defined in SAE J578. NHTSA seeks comment on the proposed ADS marker lamp color.

³³ SAE International, “Automated Driving System (ADS) Marker Lamp,” SAE Standard J3134, Rev. May 2019.

³⁴ *Id.*

The 2023 UNECE draft proposal for ADS external light signaling would permit optically combining the front ADS marker lamps with daytime running lamps.³⁵ NHTSA has tentatively concluded that this would cause the perceived color to deviate from its required color and therefore is not proposing to permit this or any other optical combination. NHTSA seeks comment on the topic.

Regarding location and number of lamps, NHTSA proposes that, if a vehicle is equipped with ADS marker lamps, at least one ADS marker lamp should be visible from each of the front, sides, and rear of the vehicle. The proposed number of ADS marker lamps is one or two on each of the front, sides and rear of the vehicle. Therefore, there would be a minimum of four and a maximum of eight ADS marker lamps. The location and quantity of ADS marker lamps is consistent with SAE J3134. NHTSA is proposing a minimum mounting height of 15 inches. This is consistent with other lamps and serves to keep lamps clear of road debris, reduce likelihood of damage, and provide visibility. NHTSA proposes that the lamps are allowed to be mounted inside or outside of the vehicle within the mounting location and height limits as specified in Table I.

The proposed intensity requirements include two sets of photometric intensities, one for when headlamps (or parking lamps) are deactivated and the other for when headlamps (or parking lamps) are activated. SAE J3134 contains photometry specifications for daytime and nighttime operation, which it defines based on “when exterior ambient light conditions warrant (or do not warrant) the use of headlamps.” FMVSS No. 108 does not contain requirements for when headlamps must be active based on time of day or ambient lighting conditions. As such,

³⁵ United Nations Economic Commission for Europe (UNECE), “Draft Proposal for a New UN Regulation on ADS External Light-Signalling,” Informal Document AVSR-18-02, 89th GRE Sess., (October 2023), *available at* <https://unece.org/transport/events/wp29gre-working-party-lighting-and-light-signalling-89th-session> (last accessed April 17, 2026).

NHTSA is proposing to establish photometric performance based on the actual activation state of the headlamps. There are common situations during daylight conditions, such as rain or fog, where headlamps may be illuminated. NHTSA seeks comment on whether the proposed “headlamp activated” specifications below are sufficiently intense for such circumstances.

NHTSA is also proposing photometric intensity requirements that are different from those specified in SAE J3134. One goal of the proposed photometry specifications is to ensure that the effectiveness of the required lamps is not decreased while the ADS marker lamp is illuminated. However, the SAE standard uses photometric intensities that NHTSA has tentatively concluded would interfere with the visibility of required signal lamps. Therefore, NHTSA proposes that the front ADS marker lamps have the same minimum and maximum values as parking lamps when the headlamps are activated. Consistent with SAE J3134, NHTSA derived the proposed minimum photometry requirements when the headlamps are deactivated by multiplying the darkness minimums by five times the values for when the headlamps are activated. For instance, the minimum value proposed for a front ADS marker lamp at test point H-V is 4 cd (headlamps activated). NHTSA proposes a minimum value of 20 cd (4 cd times 5) for when the headlamps are deactivated. This will permit the lamps to be seen both during the daylight and in dark ambient conditions. The maximum value for the front ADS marker lamp is proposed to be 125 cd in both daylight and darkness conditions. This value is consistent with the maximum allowable intensity for a parking lamp. NHTSA has tentatively concluded that the maximum intensity value of 125 cd is sufficient for the front mounted ADS marker lamp(s) to be seen in both ambient lighting conditions. NHTSA also proposes a maximum photometric intensity ratio to the front turn signal lamp for installations that combine the front turn signal and the front ADS marker lamp to ensure visibility of the turn signal lamps. NHTSA proposes that

ratio be consistent with the ratios required for a parking lamp that is combined with a turn signal lamp.

The proposed rear ADS marker lamp minimum and maximum photometric intensity values are aligned with a taillamp's one lighted section value when the headlamps are activated. NHTSA proposes that the minimum values be multiplied by five when the headlamps are deactivated. Photometric intensity ratios are proposed for when the rear ADS marker lamp is combined with a rear turn signal lamp or stop lamp. The proposed ratios are equal to the ratios required when a taillamp is combined with a stop lamp.

The proposed side ADS marker lamp minimum photometric intensity values are aligned with amber side marker lamp photometric intensities for the headlamps activated condition. NHTSA proposes that the minimum photometric intensity values for the side ADS marker lamps be multiplied by five when the headlamps are deactivated. Since the existing side marker lamp photometric intensity requirements do not have a maximum, NHTSA is proposing that the side ADS marker lamp maximum be the same as the rear ADS marker lamp.

The proposed geometric visibility requirements for front and rear ADS marker lamps are consistent with others shown in FMVSS No. 108 Table V-c, "Visibility Requirements of Installed Lighting Devices." When the front and rear ADS marker lamps are activated, the proposed minimum luminous intensity is 0.3 cd when headlamps are deactivated and 0.05 cd when headlamps are activated. Other considerations for photometric intensity include visibility to road users near the vehicle, activation in relation to conditions when headlamps are deactivated or activated, and mounting location. SAE J3134 incorporates the photometric test

points from the UNECE signal lamp photometric test points.³⁶ Consistent with FMVSS No. 108 and J3134, a 2.5 times multiplication factor for the minimum values is proposed for ADS lamps in close proximity to headlamps, fog lamps, and daytime running lamps.

SAE J3134 recommends that ADS marker lamps be permitted to be deactivated if optically combined with a required signal function, such as a turn signal where the circuit prioritizes the turn signal lamp over the ADS marker lamp activation. NHTSA is not proposing to permit optically combining an ADS marker lamp but is seeking comment on this issue in relation to safety.

The below list summarizes items for which this NPRM proposes specifications for ADS marker lamps which differ from SAE J3134. It also describes NHTSA's tentative determination regarding whether such differences conflict with the SAE specification. How these differences may impact preemption of State law is discussed below regarding Executive Order 13132. This summary is provided for clarity, and NHTSA requests comment regarding these differences.

- Definition: This NPRM proposes an ADS marker lamp definition that describes the roadway circumstances that the ADS marker lamps are communicating instead of the activation state of an ADS. However, no conflict is intended. The definition is intended to overlap with the activation circumstances that SAE J3134 envisions.
- Number: This NPRM would not permit multiple lamp arrangements for the ADS marker lamps. This proposed requirement is more restrictive than SAE J3134, however a system that met the proposal would also meet SAE J3134.

³⁶ SAE International, "Automated Driving System (ADS) Marker Lamp," SAE Standard J3134, Rev. December 2025.

- Activation: This NPRM contains activation and deactivation requirements that are aligned with the proposed ADS marker lamp definition. This is not intended to create a conflict with SAE J3134.
- Activation: This NPRM would not permit the optical combination of ADS marker lamps with any other lamp or reflective device. This is more restrictive than SAE J3134 and creates a minor conflict regarding ADS marker lamp activation. SAE J3134's allowance for ADS marker lamp deactivation if optically combined with a required signal function was omitted. This NPRM would allow ADS marker lamp deactivation if its lighted edge to the optical center of the nearest turn signal lamp is less than 100 mm. NHTSA seeks comment on implications of not permitting the optical combination of ADS marker lamps with any other lamp or reflective device in relation to safety.
- Activation: This NPRM omits SAE J3134's specification that the ADS marker lamps must not be switched on or off manually by the vehicle operator. This NPRM is therefore less restrictive than SAE J3134 such that if a vehicle were designed to the specification of the SAE document (regarding this aspect of performance), it would satisfy these proposed requirements. NHTSA seeks comment on implications of disallowing a manual control for the ADS marker lamps.
- Activation: This NPRM omits SAE J3134's specification that in areas where ADS marker lamps are prohibited, these lamps must be automatically disabled based on vehicle location or by other means not readily available to the vehicle operator.³⁷ NHTSA tentatively believes that this deviation does not create a conflict because a system with

³⁷ The material addressing Executive Order 13132 contains a discussion of how permissibility of a cyan-colored lamp might interact with State laws that limit the color of certain automotive lighting.

this functionality would not violate the proposed specifications. NHTSA seeks comment on implications of this requirement.

- **Location:** This NPRM proposes that an ADS marker lamp must be located at least twice the distance from any required identification lamp as the distance between two adjacent required identification lamps. SAE J3134 does not contain such a requirement. As such, for this area of performance, this NPRM is more restrictive than SAE J3134. However, a system that met the proposal would also meet SAE J3134.
- **Backup lamp:** This NPRM proposes to account for the potential for a backup lamp to project incidental cyan light resulting from an adjacent, or close to, ADS marker lamp. This requirement covers an area of performance regarding backup lamps that is not addressed in SAE J3134 and therefore does not create any conflict between the two documents.
- **Environment:** This NPRM proposes photometry requirements that are related to when headlamps are either deactivated or activated. Using headlamp activation status provides objective criteria and avoids ambiguity that could occur if daytime and nighttime were used. This is not intended to create a conflict with SAE J3134.
- **Photometry Requirements:** This NPRM proposes photometry requirements consistent with existing lighting equipment required by FMVSS No. 108. The proposed photometric requirements are different than those contained in SAE J3134 and would create a conflict with that standard. NHTSA seeks comment on implications of this requirement.
- **Figure 1 Chromaticity Diagram:** This NPRM proposes cyan boundaries that match SAE's blue-green boundaries. However, NHTSA is proposing to retain the same green and blue boundaries currently in FMVSS No. 108.

Effective Date

As provided by 49 U.S.C. 30111(d), an FMVSS may not become effective before the 180th day after the standard is prescribed or later than one year after it is prescribed. However, NHTSA may provide a different effective date after finding, for good cause shown, that a different effective date is in the public interest. NHTSA must publish the reasons supporting such a finding. Similarly, 5 U.S.C. 553(d) provides that a final rule cannot become effective until at least 30 days after the date of publication except, among other reasons, the rule grants or recognizes an exemption, relieves a restriction, or for good cause found and published with the rule. It is in the public interest for this proposed rule, if adopted, to be effective immediately. This proposed rule would: (1) update requirements related to headlamp test voltage; (2) provide flexibility for headlamp upper and lower beam mounting arrangements; (3) narrow the application of certain requirements for manually operated turn signal, hazard warning signal, and beam switching controls to only vehicles with manually operated driving controls; (4) narrow certain requirements for telltales to vehicles with manually operated driving controls and incorporate the term “telltale” where appropriate throughout the standard; and (5) allow for equipping vehicles with ADS marker lamps and standardizing their performance. All of these proposed requirements increase flexibility for manufacturers, and as such, there is no need for lead time for regulated entities to comply with this proposed rule.

IV. Request for Comment

NHTSA seeks public comment on the proposed changes.

V. Rulemaking Analyses and Notices

Executive Order (E.O.) 12866 and E.O. 14192

NHTSA has considered the impact of this rulemaking action under E.O. 12866 and E.O. 14192. This action was reviewed by the Office of Management and Budget as a significant regulatory action under E.O. 12866. This proposed rule, if finalized as proposed, is expected to be an E.O. 14192 deregulatory action because it removes unnecessary regulatory burdens for the reasons discussed above. At this stage, the agency has not quantified any potential benefits or costs.

The proposed changes to the requirements for integral beam headlamp test voltage and vertical headlamp arrangements do not have any anticipated regulatory costs, as the changes would remove requirements that are no longer necessary. Likewise, as it relates to the proposed changes to address vehicles equipped with ADS systems that do not have manually operated driving controls, NHTSA does not anticipate any incremental costs associated with the modifications because they would remove unnecessary requirements without adding any new requirements. NHTSA does not anticipate any safety disbenefits for the proposed changes. In addition to cost savings resulting from reduced compliance costs, the benefits of the proposed modifications to the turn signal and beam switching control requirements would be potential safety benefits from removing the ability of an occupant to interfere with the control of the various lamps, which could lead to safety problems for other road users. Regarding the new proposed provision that would allow for cyan-colored ADS marker lamps as optional motor vehicle lighting equipment, NHTSA does not anticipate that any manufacturers would incur any incremental costs. NHTSA would only be allowing the use of these lamps and not requiring them, and thus manufacturers that do not wish to include the cyan lamps would not need to. The agency believes that the standardization proposed here may have some safety benefits, as it would reduce confusion for other road users by making clear that cyan lights mean a vehicle is

being operated without the expectation that a human occupant is monitoring the roadway and ensuring that ADS marker lamp implementations do not impair the performance of required lighting. However, due to several limitations, NHTSA is unable to estimate the potential safety benefits. Given the still-developing nature of this market, NHTSA cannot quantify the number of vehicles that may be affected by this proposed rule. Further, without this regulatory change, NHTSA believes that these vehicles would seek exemptions from this standard, rather than include the unnecessary equipment or, in the case of the ADS marker lamps, not provide additional lighting. Finally, though NHTSA could seek to quantify avoided compliance costs on a per-vehicle basis, any estimate based on traditional vehicle configurations may not be accurate, given the different design and nature of ADS-equipped vehicles without manually operated driving controls. NHTSA requests comment on these assumptions and any other information that could help quantify their impacts in the final rule.

Regulatory Flexibility Act

Under the Regulatory Flexibility Act (RFA) (5 U.S.C. 601-612) (as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996; 5 U.S.C. 601, *et seq.*), agencies must prepare and make available for public comment a regulatory flexibility analysis that describes the effect of the rulemaking on small entities (*i.e.*, small businesses, small organizations, and small government jurisdictions). No regulatory flexibility analysis is required, however, if the head of an agency or an appropriate designee certifies that the rulemaking will not have a significant economic impact on a substantial number of small entities. NHTSA has concluded and hereby certifies that this proposed rule will not have a significant economic impact on a substantial number of small entities. As described elsewhere in the preamble, NHTSA proposes to remove certain regulatory burdens and costs associated with manual turn

signal lamp controls and headlamp beam switching controls unnecessary for an ADS-equipped vehicle without manually operated driving controls, with no negative impact to vehicle safety.

National Environmental Policy Act

The Department has analyzed the environmental impacts of this notice of proposed rulemaking pursuant to the National Environmental Policy Act of 1969 (NEPA) (42 U.S.C. 4321, *et seq.*). Pursuant to 49 CFR 1.81, the Secretary has delegated the “functions” under NEPA to the Administrators “as they relate to the matters within the primary responsibility of each Operating Administration.” NHTSA has determined that this rule is categorically excluded pursuant to 23 CFR 771.118(c)(4). Categorical exclusions are actions identified in an agency’s NEPA procedures that do not normally have a significant impact on the environment and therefore do not require either an environmental assessment (EA) or environmental impact statement (EIS). *See* DOT Order 5610.1D § 9. In analyzing the applicability of a categorical exclusion, the agency must also consider whether extraordinary circumstances are present that would warrant the preparation of an EA or EIS. *Id.* § 9(b). Each Operating Administration (OA) of the Department may apply CEs established in another OA’s procedures. *Id.* § 9(f). To do so, the Operating Administration “must evaluate the action for extraordinary circumstances identified in the OA procedures in which the CE is established to determine if a normally excluded action may have a significant impact and coordinate with the originating OA to ensure that the CE is being applied correctly.” *Id.* This rulemaking, which proposes to amend FMVSS No. 108, “Lamps, reflective devices, and associated equipment,” to update the regulatory language and exclude ADS-equipped vehicles without manually operated driving controls from certain requirements that presume a person in the vehicle is driving, is categorically excluded pursuant to 23 CFR 771.118(c)(4): Planning and administrative activities not involving or

leading directly to construction, such as: Training, technical assistance and research; promulgation of rules, regulations, directives, or program guidance; approval of project concepts; engineering; and operating assistance to transit authorities to continue existing service or increase service to meet routine demand. NHTSA has coordinated with the Federal Transit Administration to ensure that this CE is being applied correctly. NHTSA does not anticipate any environmental impacts, and there are no extraordinary circumstances present in connection with this rulemaking.

Executive Order 13132 (Federalism)

NHTSA has examined this rule pursuant to E.O. 13132, “Federalism” (64 FR 43255, Aug. 10, 1999), and concluded that no additional consultation with States, local governments, or their representatives is mandated beyond the rulemaking process. The agency has concluded that this rule does not have sufficient federalism implications to warrant consultation with State and local officials or the preparation of a federalism summary impact statement. The rule does not have “substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.”

NHTSA rules can have a preemptive effect in two ways. First, the National Traffic and Motor Vehicle Safety Act contains an express preemption provision: When a motor vehicle safety standard is in effect under this chapter, a State or a political subdivision of a State may prescribe or continue in effect a standard applicable to the same aspect of performance of a motor vehicle or motor vehicle equipment only if the standard is identical to the standard prescribed under this chapter. 49 U.S.C. 30103(b)(1). This statutory command preempts any non-identical State legislative and administrative law addressing the same aspect of performance.

The express preemption provision described above is subject to a savings clause under which compliance with a motor vehicle safety standard prescribed under this chapter does not exempt a person from liability at common law. 49 U.S.C. 30103(e). As a result of this provision, State common law tort causes of action against motor vehicle manufacturers are generally not expressly preempted by the language in 49 U.S.C. 30103(b).

As of January 2026, there is at least one State, California, that explicitly permits equipping ADS marker lamps on automated vehicles in accordance with SAE J3134 and J578. Cal. Vehicle Code §§ 25950 and 38750. This NPRM proposes to adopt J3134 (and J578 for color) in large, but not complete, part. It differs in the following relevant items: photometric intensity and headlamp activation state specifications, certain restrictions on lamp location, the permissibility of multiple lamp arrangements and optical combining, manual activation, distance to identification lamps, the chromaticity boundaries, and incidental illumination from backup lamps. The preamble of this document discusses these items and the reasons for deviating from J3134 in further detail. NHTSA tentatively believes that, if finalized, this amended regulation would preempt Cal. Vehicle Code §§ 25950 and 38750 inasmuch as this proposal deviates from the above aspects of J3134. The proposal also differs from J3134 regarding the definition of “ADS marker lamp,” the activation requirements which utilize the language in that definition, and by omitting the requirement that the lamps deactivate when in an area that does not permit the lamps. These latter deviations are not intended to create a conflict with J3134 or State laws that codify that standard, and NHTSA has tentatively concluded that the proposed amendments would not preempt these aspects. NHTSA seeks comments on these tentative conclusions.

NHTSA is also considering any potential preemptive effect of this proposal and whether an amendment allowing ADS marker lamps would, as a matter of law, preempt State laws that

do not directly address ADS marker lamps, but contain provisions that effectively prohibit them. There are a variety of State laws that might affect ADS marker lamps for which a State standard may not regulate an aspect of performance in an identical manner to that in this proposed amendment. For instance, many States have laws limiting the color of motor vehicle lighting used in various locations on a motor vehicle, such as by limiting front emitting lamps to amber or white or by prohibiting red or blue to the front of the vehicle.³⁸ NHTSA tentatively believes that such laws would likely be preempted by this proposed amendment only inasmuch as those laws prevent the installation of an ADS marker lamp that would be compliant with the amended standard, as such laws would disrupt the uniformity that Congress intended be established by an FMVSS. This proposal would have no impact on those laws as applied to lamps other than ADS marker lamps or for vehicles that are not equipped with ADS marker lamps.

In addition, many States have laws reserving the color blue for certain applications such as law enforcement and towing vehicles. NHTSA tentatively believes that the proposed lamps are sufficiently distinct from those equipped for those purposes such that no conflict would exist. The color selected for the ADS marker lamp, cyan (blue-green color defined in SAE J578), was chosen in part because it is distinct from the blue hue used by law enforcement. Further, the photometric specifications for the ADS marker lamp are substantially less intense than law enforcement lighting. In addition, the ADS marker lamps would be required to be steady burning. Therefore, NHTSA has tentatively concluded no conflict with such requirements would exist.

NHTSA seeks comment on the referenced State laws and any other State laws (for example, those requiring pre-approval of supplemental lighting devices) that may be impacted by

³⁸ *E.g.*, Maryland Code, Transportation, § 22-209. *Lamp colors.*

this proposed amendment. NHTSA also seeks comment on any impact on States' ability to enforce the remaining scope of their laws (such as those which broadly limit lamp color) which would not be preempted, and any associated safety impacts.

This NPRM proposes an "if-equipped" requirement that sets performance standards but does not require or prohibit whether the ADS marker lamps are equipped. NHTSA is not aware of any State laws that prohibit or require ADS marker lamps. NHTSA has tentatively determined that any future State laws prohibiting equipping vehicles with ADS marker lamps in compliance with this proposed amendment would likely be preempted. NHTSA seeks comments on whether to preempt States' authority to require vehicles be equipped with ADS marker lamps (that is, to reserve the decision to equip to manufacturers).

NHTSA rules can also preempt State law if complying with the FMVSS would render the motor vehicle manufacturers liable under State tort law. Because most NHTSA standards established by an FMVSS are minimum standards, a State common law tort cause of action that seeks to impose a higher standard on motor vehicle manufacturers generally will not be preempted. If and when such a conflict does exist—for example, when the standard at issue is both a minimum and a maximum standard—the State common law tort cause of action is impliedly preempted. *See Geier v. American Honda Motor Co.*, 529 U.S. 861 (2000).

Pursuant to E.O. 13132 and E.O. 12988, NHTSA has considered whether this proposed rule would preempt State common law causes of action. Announcing the agency's position regarding the preemptive effect of one of its rules reduces the likelihood that preemption will be an issue in any subsequent tort litigation. Regarding the application to vehicles without manual driving controls of requirements that specified manually operated turn signal, hazard warning signal operating unit, and beam switching controls to vehicles with manually operated driving

controls and the adjustment to the test voltage for integral beam headlamp systems, NHTSA believes that the changes will have no effect on safety. Regarding removal of the prohibition on arranging a vertically arranged headlamp assembly such that the lower beam headlamp is below the upper beam headlamp, NHTSA believes that this change will have either no impact on safety, or a positive impact of improving safety through a small reduction in glare. Thus, NHTSA tentatively concludes that no conflict with State common law tort actions would occur from these aspects of the proposal. Without any conflict, implied preemption of a State common law tort cause of action is unlikely. NHTSA also seeks comment on this tentative conclusion.

The proposal to allow optional installation of ADS marker lamps on certain vehicles sets minimum and maximum performance standards if such lamps are equipped because the agency has tentatively determined that such a standard is necessary to preserve the effectiveness of lighting required by the standard and avoid confusion by other road users. It would not serve the purposes of this proposed rule if, due to common law litigation, a manufacturer was required to include some other type of lighting or ADS marker lamps that perform differently. NHTSA has therefore tentatively concluded that this aspect of the requirement may conflict with State common law tort actions alleging performance aspects for ADS marker lamps beyond what is specified in the amended standard. If so, the proposed amendments likely would impliedly preempt such causes of action. However, given that NHTSA is not proposing to mandate ADS marker lamps based in part on a lack of information to support such a mandate (as opposed to determination that such a mandate would cause a negative outcome), NHTSA has tentatively concluded this amended standard likely would not preempt causes of action regarding whether an ADS marker lamp is or should have been equipped. NHTSA seeks comment on these conclusions.

Executive Order 12988 (Civil Justice Reform)

With respect to the review of the promulgation of a new regulation, section 3(b) of E.O. 12988, “Civil Justice Reform” (61 FR 4729, Feb. 7, 1996), requires that Executive agencies make every reasonable effort to ensure that the regulation: (1) clearly specifies the preemptive effect; (2) clearly specifies the effect on existing Federal law or regulation; (3) provides a clear legal standard for affected conduct, while promoting simplification and burden reduction; (4) clearly specifies the retroactive effect, if any; (5) specifies whether administrative proceedings are to be required before parties file suit in court; (6) adequately defines key terms; and (7) addresses other important issues affecting clarity and general draftsmanship under any guidelines issued by the Attorney General. This document is consistent with that requirement.

Pursuant to this E.O., NHTSA notes as follows. The issue of preemption is discussed above. NHTSA notes further that there is no requirement that individuals submit a petition for reconsideration or pursue other administrative proceedings before they may file suit in court. NHTSA believes that this NPRM specifies proposed changes to FMVSS No. 108 clearly, would define any necessary key terms, and would provide a clear legal standard for manufacturers to follow. The amendments would not take effect retroactively. In addition, the proposed rule provides a clear legal standard for compliance, while promoting simplification and burden reduction by excepting vehicles without manually operated driving controls from the requirements without any reduction in safety.

Privacy Act

Please note that anyone is able to search the electronic form of all comments received into any of NHTSA’s dockets by the name of the individual submitting the comment (or signing

the comment, if submitted on behalf of an association, business, labor union, etc.). For information on DOT's compliance with the Privacy Act, see www.transportation.gov/privacy.

National Technology Transfer and Advancement Act

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (NTTAA), Pub. L. No. 104-113, as amended by Pub. L. No. 107-107 (15 U.S.C. 272), directs the agency to evaluate and use voluntary consensus standards in its regulatory activities unless doing so would be inconsistent with applicable law or is otherwise impractical. Voluntary consensus standards are technical standards (*e.g.*, materials specifications, test methods, sampling procedures, and business practices) developed or adopted by voluntary consensus standards bodies, such as the Society of Automotive Engineers (SAE). The NTTAA directs us to provide Congress (through OMB) with explanations when the agency decides not to use available and potentially applicable voluntary consensus standards. In this proposed rule, NHTSA is proposing to incorporate material from the relevant SAE standard on ADS marker lamps.

Unfunded Mandates Reform Act

Section 202 of the Unfunded Mandates Reform Act of 1995 (UMRA), Pub. L. No. 104-4, requires Federal agencies to prepare a written assessment of the costs, benefits, and other effects of proposed or final rules that include a Federal mandate likely to result in the expenditure by State, local, or tribal governments, in the aggregate, or by the private sector, of more than \$100 million annually (adjusted for inflation with base year of 1995). Adjusting this amount by the implicit gross domestic product price deflator for the year 2024 results in \$187 million ($125.224/66.937 = 1.87$). This NPRM would not result in a cost of \$187 million or more to either State, local, or tribal governments, in the aggregate, or the private sector. Thus, this NPRM is not subject to the requirements of sections 202 of the UMRA.

Executive Order 13609 (Promoting Regulatory Cooperation)

The policy statement in section 1 of E.O. 13609, “Promoting International Regulatory Cooperation” (77 FR 26413, May 4, 2012), provides, in part, “The regulatory approaches taken by foreign governments may differ from those taken by U.S. regulatory agencies to address similar issues. In some cases, the differences between the regulatory approaches of U.S. agencies and those of their foreign counterparts might not be necessary and might impair the ability of American businesses to export and compete internationally. In meeting shared challenges involving health, safety, labor, security, environmental, and other issues, international regulatory cooperation can identify approaches that are at least as protective as those that are or would be adopted in the absence of such cooperation. International regulatory cooperation can also reduce, eliminate, or prevent unnecessary differences in regulatory requirements.”

In addition, section 24211 of the Infrastructure, Investment, and Jobs Act (Pub. L. No. 117-58), Global Harmonization, provides that DOT “shall cooperate, to the maximum extent practicable, with foreign governments, nongovernmental stakeholder groups, the motor vehicle industry, and consumer groups with respect to global harmonization of vehicle regulations as a means for improving motor vehicle safety.”³⁹

The proposed changes here that would allow cyan-colored ADS marker lamps as optional motor vehicle lighting equipment are consistent with and informed by ongoing UNECE efforts and thus further the goals of international cooperation. Certain aspects of this proposal that may conflict with the draft UNECE standard are discussed above in this preamble. The other proposed amendments that would except certain vehicles from current regulations do not implicate any issues regarding international regulatory cooperation.

³⁹ H.R. 3684 (117th Congress) (2021).

Severability

The issue of severability of FMVSSs is addressed in 49 CFR 571.9. It provides that if any FMVSS or its application to any person or circumstance is held invalid, the remainder of the part and the application of that standard to other persons or circumstances is unaffected. Comment is requested on the severability of this proposed amendment to an FMVSS.

Regulation Identifier Number

DOT assigns a regulation identifier number (RIN) to each regulatory action listed in the Unified Agenda of Federal Regulatory and Deregulatory Actions (Unified Agenda). The Regulatory Information Service Center publishes the Unified Agenda. You may use the RIN contained in the heading at the beginning of this document to find this action in the Unified Agenda.

Rulemaking Summary, 5 U.S.C. 553(b)(4)

As required by 5 U.S.C. 553(b)(4), a summary of this rule can be found in the Abstract section of DOT's Unified Agenda entry for this rulemaking at www.reginfo.gov.

VI. Public Participation

How long do I have to submit comments?

Please see DATES section at the beginning of this document.

How do I prepare and submit comments?

- Your comments must be written in English.
- To ensure that your comments are correctly filed in the Docket, please include the Docket Number shown at the beginning of this document in your comments.
- Your comments must not be more than 15 pages long. 49 CFR 553.21. NHTSA established this limit to encourage you to write your primary comments in a concise

fashion. However, you may attach necessary additional documents to your comments.

There is no limit on the length of the attachments.

- If you are submitting comments electronically as a PDF (Adobe) File, NHTSA asks that the documents be submitted using the Optical Character Recognition (OCR) process, thus allowing NHTSA to search and copy certain portions of your submissions. Comments may be submitted to the docket electronically by logging onto the Docket Management System website at www.regulations.gov. Follow the online instructions for submitting comments.
- You may also submit your comments, including the attachments, to Docket Management at the address given above under ADDRESSES.

Please note that pursuant to the Data Quality Act, in order for substantive data to be relied upon and used by the agency, it must meet the information quality standards set forth in the OMB and DOT Data Quality Act guidelines. Accordingly, NHTSA encourages you to consult the guidelines in preparing your comments. OMB's guidelines may be accessed at <https://www.federalregister.gov/documents/2002/02/22/R2-59/guidelines-for-ensuring-and-maximizing-the-quality-objectivity-utility-and-integrity-of-information>. DOT's guidelines may be accessed at <https://www.transportation.gov/dot-information-dissemination-quality-guidelines>.

How can I be sure that my comments were received?

If you wish Docket Management to notify you upon its receipt of your comments, enclose a self-addressed, stamped postcard in the envelope containing your comments. Upon receiving your comments, Docket Management will return the postcard by mail.

How do I submit confidential business information?

You should submit a redacted “public version” of your comment (including redacted versions of any additional documents or attachments) to the docket using any of the methods identified under **ADDRESSES**. This “public version” of your comment should contain only the portions for which no claim of confidential treatment is made and from which those portions for which confidential treatment is claimed has been redacted. See below for further instructions on how to do this.

You also need to submit a request for confidential treatment directly to the Office of the Chief Counsel. Requests for confidential treatment are governed by 49 CFR part 512. Your request must set forth the information specified in part 512. This includes the materials for which confidentiality is being requested (as explained in more detail below); supporting information, pursuant to section 512.8; and a certificate, pursuant to section 512.4(b) and part 512, Appendix A.

You are required to submit to the Office of the Chief Counsel one unredacted “confidential version” of the information for which you are seeking confidential treatment. Pursuant to section 512.6, the words “ENTIRE PAGE CONFIDENTIAL BUSINESS INFORMATION” or “CONFIDENTIAL BUSINESS INFORMATION CONTAINED WITHIN BRACKETS” (as applicable) must appear at the top of each page containing information claimed to be confidential. In the latter situation, where not all information on the page is claimed to be confidential, identify each item of information for which confidentiality is requested within brackets: “[].”

You are also required to submit to the Office of the Chief Counsel one redacted “public version” of the information for which you are seeking confidential treatment. Pursuant to section 512.5(a)(2), the redacted “public version” should include redactions of any information for

which you are seeking confidential treatment (*i.e.*, the only information that should be unredacted is information for which you are not seeking confidential treatment).

NHTSA is currently treating electronic submission as an acceptable method for submitting confidential business information to the agency under part 512. Please do not send a hardcopy of a request for confidential treatment to NHTSA's headquarters. The request should be sent to Dan Rabinovitz in NHTSA's Office of the Chief Counsel (NCC) at Daniel.Rabinovitz@dot.gov. You may either submit your request via email or request a secure file transfer link. Manufacturers or any companies that already have a Confidential Business Information (CBI) Portal account or an Enterprise Account with NHTSA should use the CBI Portal for their submission. If you submit a CBI request, please also email a courtesy copy of the request to Mr. David Jasinski at David.Jasinski@dot.gov.

Will the agency consider late comments?

NHTSA will consider all comments that Docket Management receives before the close of business on the comment closing date indicated above under DATES. To the extent possible, NHTSA will also consider comments that Docket Management receives after that date. If Docket Management receives a comment too late for us to consider in developing the final rule, NHTSA will consider that comment as an informal suggestion for future rulemaking action.

How can I read the comments submitted by other people?

You may read the comments received by Docket Management at the address given above under ADDRESSES. The hours of the Docket are indicated above in the same location. You may also see the comments on the Internet. To read the comments on the Internet, go to www.regulations.gov. Follow the online instructions for accessing the dockets.

Please note that, even after the comment closing date, NHTSA will continue to file relevant information in the Docket as it becomes available. Further, some people may submit late comments. Accordingly, NHTSA recommends that you periodically check the Docket for new material. List of Subjects in 49 CFR Part 571

Motor vehicle safety, Motor vehicles.

Proposed Regulatory Text

In consideration of the foregoing, NHTSA proposes to amend 49 CFR part 571 as set forth below.

PART 571—FEDERAL MOTOR VEHICLE SAFETY STANDARDS

1. The authority citation for part 571 continues to read as follows:

Authority: 49 U.S.C. 322, 30111, 30115, 30117, and 30166; delegation of authority at 49 CFR 1.95.

2. Section 571.108 is amended by:

a. Revising S4 by adding in alphabetical order the definition of “ADS marker lamp,” and revising the definition of “vehicular hazard warning signal operating unit”;

b. Adding paragraph S6.1.1.5;

c. Removing and reserving paragraph S6.1.3.5.1;

d. Removing paragraphs S6.1.3.5.1.1 and S6.1.3.5.1.2;

e. Adding paragraphs S6.1.3.7, S6.1.3.7.1, S6.1.3.7.2, and S6.3.4;

f. Revising paragraphs S6.6.1, S6.6.2, and S7.6.2.2;

g. Adding paragraphs S7.12, S7.12.1, S7.12.2, S7.12.3, S7.12.4, S7.12.5, S7.12.6, S7.12.7, S7.12.8, S7.12.9, S7.12.10, S7.12.10.1, S7.12.10.2, S7.12.10.3, S7.12.11, S7.12.12, S7.12.12.1, S7.12.13, S7.12.13.1, S7.12.13.2, S7.12.14, S7.12.14.1, and S7.12.14.2;

- h. Revising paragraphs S9.1.1, S9.3.1, S9.3.6, S9.4, S9.4.1, S9.4.1.4, S9.5, S9.6.1, S9.6.2, S9.8.4, S10.18.9.4.2, S14.2.1.3, S14.2.5.4, S14.2.5.5.6.2, and S14.4.1;
- i. Adding paragraphs S14.4.1.3.2.6 and S14.4.1.4.2.7;
- j. Revising paragraphs S14.6.4.1.1, S14.6.9.1.1, and S14.9.3.9.2.1;
- k. Revising Table I-a and Table V-c;
- l. Adding Table XXIII and Table XXIV; and
- m. Revising Figure 1.

3. In addition to the amendments set forth above, in section 571.108, remove the words “indicator” or “pilot indicator” and add, in their place, the word “telltale” in the following places:

- a. S7 through S10.10.

The additions and revisions read as follows:

§ 571.108 Standard No. 108; Lamps, reflective devices, and associated equipment.

* * * * *

S4 * * *

ADS marker lamp is a lamp that is used to indicate when a vehicle is operating without the expectation that an occupant is monitoring the roadway.

* * * * *

Vehicular hazard warning signal operating unit means an operating unit by which the operator of a vehicle causes all required turn signal lamps to flash simultaneously to indicate to approaching vehicle operators the presence of a vehicular hazard.

* * * * *

S6.1.1.5 ***ADS marker lamps***. A vehicle may be equipped with four to eight ADS marker lamps as specified in Table I-a.

* * * * *

S6.1.3.5.1 *[Reserved]*

* * * * *

S6.1.3.7 **ADS marker lamps.**

S6.1.3.7.1 **Interior mounting.** An ADS marker lamp mounted inside a vehicle with manually operated driving controls must have means provided to minimize reflections from the light of the lamp upon the rear window glazing that might be visible to the driver when viewed directly, or indirectly in the rearview mirror.

S6.1.3.7.2 **Lamps mounted near identification lamps.** An ADS marker lamp, if equipped, must be located at least twice the distance from any required identification lamp as the distance between two adjacent required identification lamps.

* * * * *

S6.3.4 No ADS marker lamp is permitted to be optically combined with any other lamp or reflective device.

* * * * *

S6.6.1 All vehicles to which this standard applies, except trailers, must be equipped with a turn signal operating unit, a turn signal flasher, and a headlamp beam switching device meeting the requirements of S9. All vehicles to which this standard applies, except trailers and vehicles without manually operated driving controls, must be equipped with a turn signal telltale and an upper beam headlamp telltale meeting the requirements of S9.

S6.6.2 All vehicles to which this standard applies, except trailers and motorcycles, must be equipped with a vehicular hazard warning signal operating unit, a vehicular hazard warning signal flasher, and a vehicular hazard warning signal telltale meeting the requirements of S9.

* * * * *

S7.6.2.2 A backup lamp may project incidental red, yellow, cyan, or white light through reflectors or lenses that are adjacent, close to, or a part of the lamp assembly.

* * * * *

S7.12 *ADS marker lamps.*

S7.12.1 *Number.* See Table I-a.

S7.12.2 *Color of light.* See Table I-a.

S7.12.3 *Mounting location.* See Table I-a.

S7.12.4 *Mounting height.* See Table I-a.

S7.12.5 *Activation.* See Table I-a.

S7.12.6 *Effective projected luminous lens area.* No requirement.

S7.12.7 *Visibility.* See Table V-c.

S7.12.8 *Telltale.* No requirement.

S7.12.9 *Markings.* See S6.5.1.2.

S7.12.10 *Spacing to other lamps.*

S7.12.10.1 *Spacing to DRLs.* If an ADS marker lamp is mounted within 100 mm from the lighted edge of a DRL not optically combined with a lower beam headlamp or turn signal lamp, the luminous intensity values at all test points shown in Table XXIII shall be multiplied at least 2.5 times when DRLs are activated.

S7.12.10.2 *Spacing to headlamps or fog lamps.* If an ADS marker lamp is mounted within 100 mm from the lighted edge of a headlamp or fog lamp, the luminous intensity values at all test points shown in Table XXIII shall be multiplied at least 2.5 times when headlamps or fog lamps are on as applicable.

S7.12.10.3 **Spacing to turn signal lamps.** Each ADS marker lamp must be located on the vehicle so that the distance from its lighted edge to the optical center of the nearest turn signal lamp is not less than 100 mm unless the ADS marker lamp is deactivated when the turn signal or hazard warning signal lamp is activated.

S7.12.11 **Multiple compartments and multiple lamps.** See Table I-a.

S7.12.12 **Ratio to turn signal and stop lamps.**

S7.12.12.1 When an ADS marker lamp is combined with a turn signal or stop lamp, the luminous intensity of the ADS marker lamp at each identified test point must not be greater than the luminous intensity of the turn signal or stop lamp at that same test point times the multiplier shown for that test point in Table XXIII.

S7.12.13 **Photometry.** Each ADS marker lamp must be designed to conform to the photometry requirements of Table XXIII and Table XXIV, when tested according to the procedure of S14.2.1, as specified by this section.

S7.12.13.1 **Photometry, headlamps deactivated.** For each ADS marker lamp operating when the headlamps are deactivated, the maximum photometric intensity for front is 125 cd, side is 90 cd and rear is 90 cd. The minimum photometric intensity applies when the headlamps or parking lamps on passenger cars and MPVs, trucks, and buses less than 2032 mm in overall width are not activated.

S7.12.13.2 **Photometry, headlamps activated.** For each ADS marker lamp operating when the headlamps are activated, the maximum photometric intensity for front is 125 cd, side is 18 cd and rear is 18 cd. The minimum photometric intensity applies when the headlamps are activated in a steady burning state or the parking lamps on passenger cars and MPVs, trucks, and buses less than 2032 mm in overall width are activated.

S7.12.14 ***Physical tests.***

S7.12.14.1 Each ADS marker lamp must be designed to conform to the performance requirements of the vibration test of S14.5, and the color test and plastic optical material test of S14.4.

S7.12.14.2 Each ADS marker lamp that is not mounted inside the vehicle must be designed to conform to the performance requirements of the moisture test, dust test, and corrosion test of S14.5.

* * * * *

S9.1.1 For vehicles with manually operated driving controls, the turn signal operating unit installed on passenger cars, multipurpose passenger vehicles, trucks, and buses less than 2032 mm in overall width must be self-canceling by steering wheel rotation and capable of cancellation by a manually operated control.

* * * * *

S9.3.1 For vehicles with manually operated driving controls, each vehicle equipped with a turn signal operating unit where any turn signal lamp is not visible to the driver must also have a telltale to provide a clear and unmistakable indication that the turn signal system is activated.

* * * * *

S9.3.6 ***Turn signal lamp failure.*** Failure of one or more turn signal lamps such that the minimum photometric performance specified in Tables VI or VII is not being met must be indicated by the turn signal telltale by a “steady on”, “steady off”, or by a significant change in the flashing rate, except when a vehicle does not have turn signal telltales or when a variable-

load turn signal flasher is used on a multipurpose passenger vehicle, truck, or bus 2032 mm or more in overall width, on a truck that is capable of accommodating a slide in camper, or on any vehicle equipped to tow trailers. For vehicles without turn signal telltales, failure of one or more turn signal lamps must be indicated by a lamp failure telltale displayed in clear view of all designated seating positions.

S9.4 *Headlamp beam switching device.* Each vehicle must have a means of switching between lower and upper beams. The switch must have no dead point and, except as provided by S6.1.5.2, the lower and upper beams must not be energized simultaneously except momentarily for temporary signaling purposes or during switching between beams. For vehicles with manually operated driving controls, the headlamp beam switching device must be designed and located so that it may be operated conveniently by a simple movement of the driver's hand or foot.

S9.4.1 *Semiautomatic headlamp beam switching devices.* As an alternative to S9.4, a vehicle with manually operated driving controls may also be equipped with a semiautomatic means of switching beams that complies with 9.4.1.1 through S9.4.1.4 and either 9.4.1.5 (Option 1) or 9.4.1.6 (Option 2).

* * * * *

S9.4.1.4 *Automatic dimming telltale.* There must be a convenient means of informing the driver when the device is controlling the headlamps automatically. For headlighting systems certified to Option 1, the device shall not affect the function of the upper beam headlamp telltale.

* * * * *

S9.5 *Upper beam headlamp telltale.* Each vehicle with manually operated driving controls must have a means for indicating to the driver when the upper beams of the headlighting system are

activated. The upper beam headlamp telltale is not required to be activated when an Adaptive Driving Beam system is operating in automatic mode.

* * * * *

S9.6.1 For vehicles with manually operated driving controls, the unit may be an independent device or it may be combined with the turn signal operating unit. If combined with the turn signal operating unit, the actuating motion of the hazard function must differ from the actuating motion of the turn signal function.

S9.6.2 ***Operating unit switch.*** The unit must operate independently of the ignition or equivalent switch. For vehicles with manually operated driving controls, if the actuation of the hazard function requires the operation of more than one switch, a means must be provided for actuating all switches simultaneously by a single driver action.

* * * * *

S9.8.4 ***Telltale size and color.*** If the vehicular hazard warning signal telltale is not combined with a turn signal telltale, it must emit a red color and have a minimum area equivalent to a 0.5 in diameter circle.

* * * * *

S10.18.9.4.2 If the upper beam is not combined in a headlamp with the lower beam and has fixed horizontal aim or has a horizontal VHAD, then the headlamp is mounted on a headlamp test fixture which simulates its actual design location on any vehicle for which the headlamp is intended. The fixture, with the headlamp installed, is attached to the goniometer table in such a way that the fixture alignment axes are coincident with the goniometer axes. An integral beam headlamp is energized at the voltage as marked according to S6.5.3.2 ± 20 mv. A headlamp other than an integral beam headlamp is energized at 12.8 v ± 20 mv. There is no adjustment,

shimming, or modification of the horizontal axis of the headlamp or test fixture, unless the headlamp is equipped with a VHAD. In this case the VHAD is adjusted to zero.

* * * * *

S14.2.1.3 **Measurement distance.** Photometric measurements are made at a distance between the light source and the point of measurement of at least 1.2 m for side marker lamps, clearance lamps, identification lamps, parking lamps, and ADS marker lamps, and at least 3 m for turn signal lamps, stop lamps, taillamps, backup lamps, and school bus signal lamps.

* * * * *

S14.2.5.4 **Seasoning and test voltage.** All sealed beam headlamps, integral beam headlamps, beam contributors, and replaceable light sources are seasoned at design voltage for 1% of its average design life or 10 hours, whichever is less, prior to a photometry test. An integral beam headlamp is tested at the voltage as marked according to S6.5.3.2 ± 20 mv. All other headlamps are tested at 12.8 v ± 20 mv, D.C. Voltage is measured at the terminals of the lamp.

* * * * *

S14.2.5.5.6.2 A headlamp whose upper beam is not combined with a lower beam and has a fixed horizontal aim or has a horizontal VHAD must be mounted in its normal operating position on a goniometer such that the mounting fixture alignment axes are coincident with the goniometer axes. An integral beam headlamp is energized at the voltage as marked according to S6.5.3.2 ± 20 mv. A headlamp other than an integral beam headlamp is energized at 12.8 v ± 20 mv. There must be no adjustment, shimming, or modification of the horizontal axis of the headlamp or test fixture, unless the headlamp is equipped with a VHAD, in which case the VHAD must be adjusted to zero.

* * * * *

S14.4.1 **Color test.** The requirement applies to the overall effective color of light emitted by the device and not to the color of the light from a small area of the lens. It does not apply to any indicator or telltale lights. The color of the sample device must comply when tested by either the Visual Method or the Tristimulus Method.

* * * * *

S14.4.1.3.2.6 Cyan. Cyan is not acceptable if it is less saturated (paler), greener, or bluer than the limit standards.

* * * * *

S14.4.1.4.2.7 Cyan. The color of light emitted must fall within the following boundaries:

$y = 0.32$ (blue boundary)

$x = 0.20$ (white boundary)

$y = 0.50 - 0.50x$ (green boundary)

* * * * *

S14.6.4.1.1 A headlamp connector test must be performed on each filament circuit of the sample headlamp prior to the test in S14.6.4.1.2 according to Figure 4 and S14.6.15. The power source is set to provide 128 watts of power.

* * * * *

S14.6.9.1.1 An unfixtured sample headlamp in its design mounting position is placed in water at a temperature of $176^{\circ} \pm 5^{\circ} \text{F}$ ($80^{\circ} \pm 3^{\circ} \text{C}$) for one hour. The headlamp is energized in its highest wattage mode, with the test voltage as marked according to S6.5.3.2 $\pm 0.1 \text{ V}$ during immersion.

* * * * *

S14.9.3.9.2.1 The test is conducted using the standard test circuit by applying loads from two signal lamps to the maximum design loading including the telltale.

* * * * *

Table I-a Required Lamps and Reflective Devices would be revised to add ADS marker lamp criteria

(Note: Add to the bottom of Table I-a, after daytime running lamps)

TABLE I-a: REQUIRED LAMPS AND REFLECTIVE DEVICES				
Automated Driving System Marker Lamps Permitted But Not Required on Passenger Cars, Multipurpose Passenger Vehicles (MPV), Trucks, and Buses				
Lighting device	Number and color	Mounting location	Mounting height	Device activation
Front ADS Marker Lamps	1 or 2 Cyan; multiple lamp arrangements not permitted	On the front. When there is 1, the lamp center on the vertical centerline. When there are 2, at the same height, symmetrically disposed about the vertical centerline.	Not less than 15 inches.	Steady burning. May be automatically activated when a vehicle is operating without the expectation that an occupant is monitoring the roadway. Must be automatically deactivated when a vehicle is operating with the expectation that an occupant is monitoring the roadway. All ADS marker lamps must switch on and off simultaneously.
Side ADS Marker Lamps	1 or 2 Cyan; multiple lamp arrangements not permitted	On each side.	Not less than 15 inches.	Steady burning. May be automatically activated when a vehicle is operating without the expectation that an occupant is monitoring the roadway. Must be automatically deactivated when a vehicle is operating with the expectation that an occupant is monitoring the roadway. All ADS marker lamps must switch on and off simultaneously.
Rear ADS Marker Lamps	1 or 2 Cyan; multiple lamp arrangements not permitted	On the rear. When there is 1, the lamp center on the vertical centerline. When there are 2, at the same height, symmetrically disposed about the vertical centerline.	Not less than 15 inches.	Steady burning. May be automatically activated when a vehicle is operating without the expectation that an occupant is monitoring the roadway. Must be automatically deactivated when a vehicle is operating with the expectation that an occupant is monitoring the roadway. All ADS marker lamps must switch on and off simultaneously.

Table V-c Visibility Requirements of Installed Lighting Devices

TABLE V-c: VISIBILITY REQUIREMENTS OF INSTALLED LIGHTING DEVICES - LUMINOUS INTENSITY VISIBILITY OPTION					
Lighting device	Corner points ⁽¹⁾⁽²⁾				Required visibility Minimum luminous intensity in any direction throughout the pattern defined by the specified corner points. Candela
	Motorcycle		All Other		
Turn signal lamp	15° UP - 20° IB	15° UP - 80° OB	15° UP - 45° IB	15° UP - 80° OB	0.3
	15° DOWN - 20° IB	15° DOWN - 80° OB	15° DOWN - 45° IB	15° DOWN - 80° OB	
Stop lamp	15° UP - 45° RIGHT ⁽⁴⁾	15° UP - 45° LEFT ⁽⁴⁾	15° UP - 45° IB	15° UP - 45° OB	0.3
	15° DOWN - 45° RIGHT ⁽⁴⁾	15° DOWN - 45° LEFT ⁽⁴⁾	15° DOWN - 45° IB	15° DOWN - 45° OB	
Taillamp ⁽³⁾	15° UP – 80° RIGHT ⁽⁵⁾	15° UP - 80° LEFT ⁽⁵⁾	15° UP - 45° IB	15° UP - 80° OB	0.05
	15° DOWN - 80° RIGHT ⁽⁵⁾	15° DOWN - 80° LEFT ⁽⁵⁾	15° DOWN - 45° IB	15° DOWN - 80° OB	
Parking lamp	No Requirement	No Requirement	15° UP - 45° IB	15° UP - 80° OB	0.05
	No Requirement	No Requirement	15° DOWN - 45° IB	15° DOWN - 80° OB	
Front ADS marker lamp ⁽⁶⁾	No Requirement	No Requirement	15° UP - 60° IB	15° UP - 60° OB	0.05cd when headlamps are deactivated and 0.3cd when headlamps are activated
			15° DOWN - 60° IB	15° DOWN - 60° OB	
Rear ADS marker lamp ⁽⁶⁾	No Requirement	No Requirement	15° UP - 60° IB	15° UP - 60° OB	0.05cd when headlamps are deactivated and 0.3cd when headlamps are activated
			15° DOWN - 60° IB	15° DOWN - 60° OB	

⁽¹⁾ IB indicates an inboard direction (toward the vehicle's longitudinal centerline) and OB indicates an outboard direction.

⁽²⁾ Where a lamp is mounted with its axis of reference less than 750 mm above the road surface, the vertical test point angles located below the horizontal plane subject to visibility requirements may be reduced to 5° down.

⁽³⁾ Inboard and outboard corner points are 80° for a single taillamp installed on a motorcycle.

⁽⁴⁾ If a multiple lamp arrangement is used for a motorcycle stop lamp, the inboard angle for each lamp shall be 10 degrees.

⁽⁵⁾ If a multiple lamp arrangement is used for a motorcycle tail lamp, the inboard angle for each lamp shall be 45 degrees.

* * * * *

Table XXIII Front and Rear ADS Marker Lamp Photometry Requirements

Table XXIII: FRONT AND REAR ADS MARKER LAMP PHOTOMETRY REQUIREMENTS						
TEST POINT (degrees)		MAXIMUM PHOTOMETRIC INTENSITY RATIO ⁽⁵⁾	HEADLAMPS DEACTIVATED ⁽¹⁾		HEADLAMPS ACTIVATED ⁽²⁾	
			MINIMUM PHOTOMETRIC INTENSITY ⁽³⁾ (cd) FRONT LAMP	MINIMUM PHOTOMETRIC INTENSITY ⁽³⁾ (cd) REAR LAMP	MINIMUM PHOTOMETRIC INTENSITY ⁽³⁾ (cd) FRONT LAMP	MINIMUM PHOTOMETRIC INTENSITY ⁽³⁾ (cd) REAR LAMP
20L	5U	1/3	2.0	1.5	0.4	0.3
	5D	-	2.0	1.5	0.4	0.3
5L	10U	1/3	4.0	2.0	0.8	0.4
	10D ⁽⁴⁾	-	4.0	2.0	0.8	0.4
10L	5U	1/3	4.0	4.0	0.8	0.8
	H	1/3	7.0	4.0	1.4	0.8
	5D	-	4.0	4.0	0.8	0.8
V	5U	1/5	14.0	9.0	2.8	1.8
5L	H	1/5	18.0	10.0	3.6	2.0
V		1/5	20.0	10.0	4.0	2.0
5R		1/5	18.0	10.0	3.6	2.0
V	5D	-	14.0	9.0	2.8	1.8
10R	5U	1/3	4.0	4.0	0.8	0.8
	H	1/3	7.0	4.0	1.4	0.8
	5D	-	4.0	4.0	0.8	0.8
5R	10U	1/3	4.0	2.0	0.8	0.4
	10D ⁽⁴⁾	-	4.0	2.0	0.8	0.4
20R	5U	1/3	2.0	1.5	0.4	0.3
	5D	-	2.0	1.5	0.4	0.3
MAXIMUM PHOTOMETRIC INTENSITY (cd)			125	90	125	18

⁽¹⁾ The minimum photometric intensity values apply when the headlamps or parking lamps are not activated.

⁽²⁾ The minimum photometric intensity values apply when the headlamps are activated in a steady burning state or the parking lamps on passenger cars and MPVs, trucks, and buses less than 2032 mm in overall width are activated.

⁽³⁾ The photometric intensity values between test points must not be less than the lower specified minimum value of the two closest adjacent test points on a horizontal or vertical line.

⁽⁴⁾ Where ADS marker lamps are mounted with their axis of reference less than 750 mm above the road surface, photometry requirements below 5° down may be met at 5° down rather than at the specified required downward angle.

⁽⁵⁾ For front ADS marker lamps that are combined with front turn signal lamps and for rear ADS marker lamps that are combined with rear turn signal lamps or stop lamps.

Table XXIV Side ADS Marker Lamp Photometry Requirements

Table XXIV: SIDE ADS MARKER LAMP PHOTOMETRY REQUIREMENTS			
TEST POINT (degrees)		HEADLAMPS DEACTIVATED⁽¹⁾	HEADLAMPS ACTIVATED⁽²⁾
		MINIMUM PHOTOMETRIC INTENSITY⁽³⁾ (cd)	MINIMUM PHOTOMETRIC INTENSITY⁽³⁾ (cd)
10U	45L	3.0	0.6
	V	3.0	0.6
	45R	3.0	0.6
H	45L	3.0	0.6
	V	3.0	0.6
	45R	3.0	0.6
10D ⁽⁴⁾	45L	3.0	0.6
	V	3.0	0.6
	45R	3.0	0.6
MAXIMUM PHOTOMETRIC INTENSITY (cd)		90	18

⁽¹⁾ The minimum photometric intensity values apply when the headlamps or parking lamps are not activated.

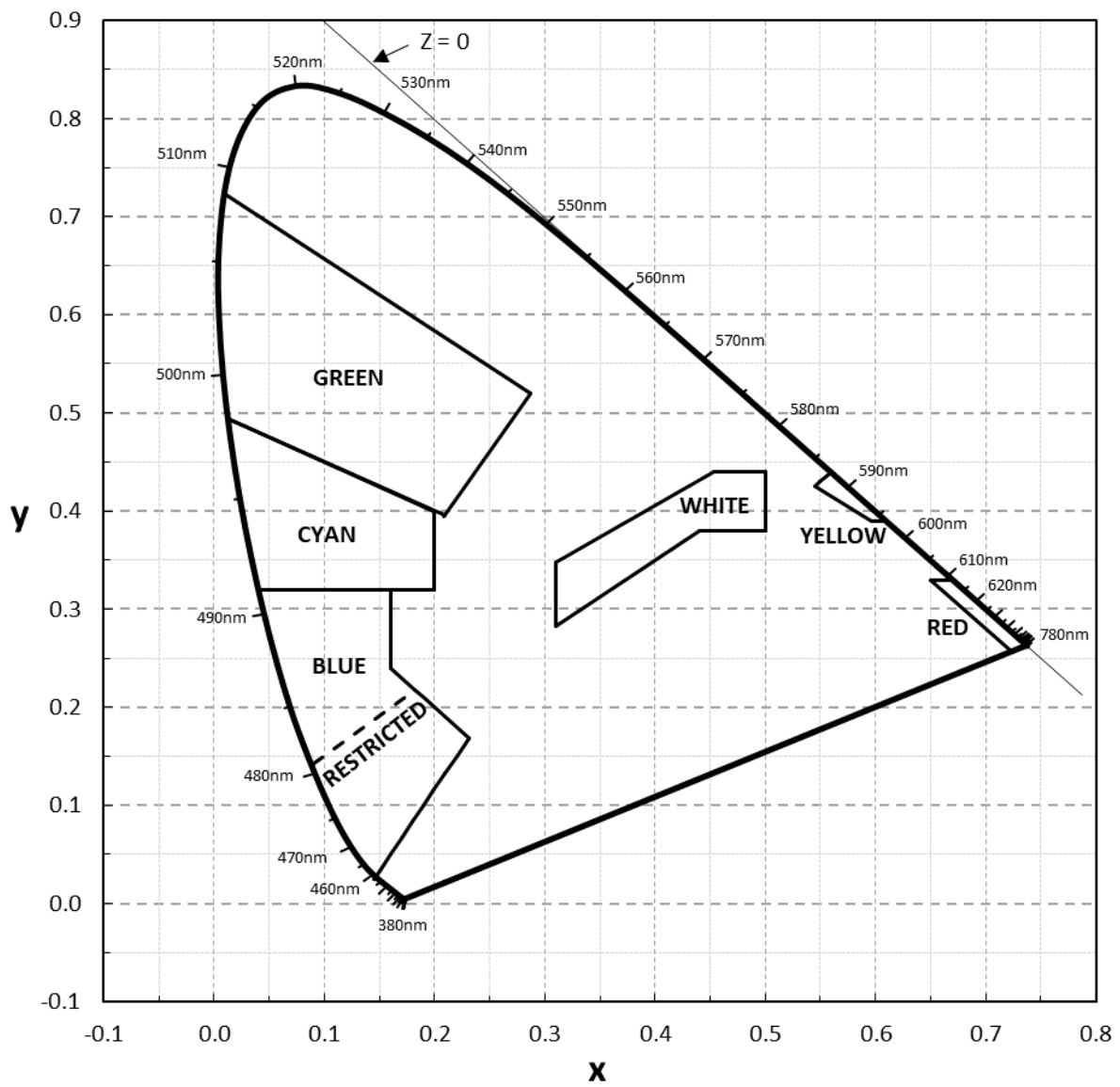
⁽²⁾ The minimum photometric intensity values apply when the headlamps are activated in a steady burning state or the parking lamps on passenger cars and

MPVs, trucks, and buses less than 2032 mm in overall width are activated.

⁽³⁾ The photometric intensity values between test points must not be less than the lower specified minimum value of the two closest adjacent test points on a horizontal or vertical line.

⁽⁴⁾ Where ADS marker lamps are mounted with their axis of reference less than 750 mm above the road surface, photometry requirements below 5° down may be met at 5° down rather than at the specified required downward angle.

Figure 1 Chromaticity Diagram



CHROMATICITY DIAGRAM
FIGURE 1

Issued in Washington, D.C., under authority delegated in 49 CFR 1.95.

Jonathan Morrison,

Administrator.