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DEPARTMENT OF TRANSPORTATION

National Highway Traffic Safety Administration

[Docket No. NHTSA-2022-0099; Notice 1]

Ford Motor Company, Receipt of Petition for Decision of Inconsequential Noncompliance

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

ACTION: Receipt of petition.

SUMMARY: Ford Motor Company (Ford), has determined that certain model year (MY) 2018-2020 Ford F-150 motor vehicles do not fully comply with Federal Motor Vehicle Safety Standard (FMVSS) No. 108, *Lamps, Reflective Devices, and Associated Equipment*. Ford filed a noncompliance report dated July 22, 2022, and subsequently petitioned NHTSA on August 12, 2022, for a decision that the subject noncompliance is inconsequential as it relates to motor vehicle safety. This document announces receipt of Ford's petition.

DATES: Send comments on or before **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

ADDRESSES: Interested persons are invited to submit written data, views, and arguments on this petition. Comments must refer to the docket and notice number cited in the title of this notice and may be submitted by any of the following methods:

- Mail: Send comments by mail addressed to the U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE, Washington, DC 20590.
- Hand Delivery: Deliver comments by hand to the U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE, Washington, DC 20590. The Docket Section is open on weekdays from 10 a.m. to 5 p.m. except for Federal holidays.

- Electronically: Submit comments electronically by logging onto the Federal Docket Management System (FDMS) website at https://www.regulations.gov/. Follow the online instructions for submitting comments.
- Comments may also be faxed to (202) 493-2251.

Comments must be written in the English language, and be no greater than 15 pages in length, although there is no limit to the length of necessary attachments to the comments. If comments are submitted in hard copy form, please ensure that two copies are provided. If you wish to receive confirmation that comments you have submitted by mail were received, please enclose a stamped, self-addressed postcard with the comments. Note that all comments received will be posted without change to https://www.regulations.gov, including any personal information provided.

All comments and supporting materials received before the close of business on the closing date indicated above will be filed in the docket and will be considered. All comments and supporting materials received after the closing date will also be filed and will be considered to the fullest extent possible.

When the petition is granted or denied, notice of the decision will also be published in the **Federal Register** pursuant to the authority indicated at the end of this notice.

All comments, background documentation, and supporting materials submitted to the docket may be viewed by anyone at the address and times given above. The documents may also be viewed on the Internet at https://www.regulations.gov by following the online instructions for accessing the dockets. The docket ID number for this petition is shown in the heading of this notice.

DOT's complete Privacy Act Statement is available for review in a Federal Register notice published on April 11, 2000 (65 FR 19477-78).

FOR FURTHER INFORMATION CONTACT: Leroy Angeles, General Engineer, NHTSA, Office of Vehicle Safety Compliance, (202) 366-5304.

SUPPLEMENTARY INFORMATION:

I. Overview: Ford determined that certain MY 2018-2020 Ford F-150 motor vehicles equipped with combination lamps do not fully comply with paragraph S7.6.13 of FMVSS No. 108, *Lamps, Reflective Devices, and Associated Equipment* (49 CFR 571.108).

Ford filed an original noncompliance report dated July 22, 2022, pursuant to 49 CFR part 573, *Defect and Noncompliance Responsibility and Reports*. Ford petitioned NHTSA on August 12, 2022, for an exemption from the notification and remedy requirements of 49 U.S.C. Chapter 301 on the basis that this noncompliance is inconsequential as it relates to motor vehicle safety, pursuant to 49 U.S.C. 30118(d) and 30120(h) and 49 CFR part 556, *Exemption for Inconsequential Defect or Noncompliance.*

This notice of receipt of Ford's petition is published under 49 U.S.C. 30118 and 30120 and does not represent any agency decision or another exercise of judgment concerning the merits of the petition.

II. Vehicles Involved: Approximately 1,271,854 MY 2018-2020 Ford F-150 motor vehicles, manufactured between January 10, 2017, and October 22, 2020, are potentially involved:

III. Noncompliance: Ford explains that the rear combination lamps installed on the subject vehicles may exceed the maximum backup lamp photometry requirements as required by paragraph S7.6.13 and Table XII of FMVSS No. 108. Specifically, when the subject rear combination lamps were tested in accordance with S7.6.13, 7 of the 8 samples exceeded the maximum candela (cd) rating of 300 at the H-V test point, and 1 of the 8 samples also exceeded the maximum at the H – 10L test point.

IV. Rule Requirements: Paragraph S7.6.13 and Table XII of FMVSS No. 108 include the requirements relevant to this petition. S7.6.13 provides that each backup lamp must be designed to conform to the photometry requirements of Table XII, when tested according to the procedure of S14.2.1, as specified by this section. Table XII provides the minimum and maximum candela values for photometric intensity. Specifically at the H – 10L test point, any single lamp in a

multiple lamp system must have a minimum photometric intensity of 15 cd and a maximum photometric intensity of 300 cd; at the H-V test point, any single lamp in a multiple lamp system must have a minimum photometric intensity of 15 cd and a maximum photometric intensity of 300 cd.

V. Background Information

Ford received an information request from NHTSA on May 13, 2022, Ford says NHTSA reported a preliminary test failure was observed in the backup lamp function in the rear combination lamps of a 2018 F-150 base series motor vehicle.

Ford says that NHTSA provided a FMVSS No. 108 test report dated May 9, 2022, in which Calcoast tested lighting functions of the rear combination lamps on behalf of NHTSA. Ford states that according to the test report, Calcoast tested 8 samples at each of the 15 test points, all of which exceeded the maximum candela rating of 300 that is required at the H-V test point, and one of the samples also exceeded the maximum candela rating at the H-10L test point. Based on the test results of the 7 backup lamps that only exceeded the requirement at the H-V test point, Ford believes that the sample that also exceeded the maximum requirement at the H-10L test point was influenced by the H-V test point "and is not indicative of an additional root cause."

Ford states that it reviewed the supplier's lamp certification data as well as their historical and ongoing product audit testing records and found that the lamps tested at values that were "consistently below the 300-cd maximum requirement for backup lamps." Upon further review, Ford discovered that "the initial certification test data provided to Ford by the supplier pertained to a test that was conducted with a bulb socket that did not represent the final design." According to Ford, they were informed by the supplier that they retested the lamp with the correct focal length socket and certified the measurement for the backup lamp at H-V as 253.4 cd, which was below the required 300 cd limit. Ford later discovered that the supplier's ongoing audit testing was being conducted using a "production" bulb, rather than the "rated" bulb that is

required for certification. The supplier conducted additional testing using 30 sample assemblies each for the left-hand and right-designs. The additional testing showed values exceeding 300 cd at test point H-V. Ford states that on July 15, 2022, its Field Review Committee reviewed the concern and determined that the subject rear combination lamps were not compliant with the backup lamp illumination requirements provided in FMVSS No. 108. Based on its analysis of existing and new test data, Ford believes that the subject noncompliance is inconsequential to motor vehicle safety.

Design of the Lamp

Ford details the design of the subject backup lamps and states that the subject vehicles are equipped with the "low series" variation of the rear combination lamp. MY 2018 Ford-F-150 vehicles were available in two variations of taillamps: (1) the "BLIS series" lamp that incorporates Blind Spot Information System (BLIS) sensors, and (2) the "low series" lamp that does not incorporate BLIS sensors.

Regulatory Framework

Ford states the purpose of FMVSS No. 108, and the definition of backup lamps provided in paragraphs S2 and S4 of the standard. According to Ford, in order to determine whether the subject noncompliance impacts motor vehicle safety, it should be evaluated from the perspective of a pedestrian or other drivers. Ford says it has used this perspective in its analysis.

Ford explains that the backup lamps at issue are required to have a luminosity greater than 15 and less than 300 cd, according to Table XII of FMVSS No. 108. Ford says that the following requirements are important when considering the subject noncompliance: (1) testing is conducted at a series of 22 points 100 feet away from the test apparatus, and (2) bulb certification testing is to be conducted with a "rated" bulb.

VI. Summary of Ford's Petition: The following views and arguments presented in this section, "VI. Summary of Ford's Petition," are the views and arguments provided by Ford. They have not been evaluated by the Agency and do not reflect the views of the Agency. Ford describes the

subject noncompliance and contends that the noncompliance is inconsequential as it relates to motor vehicle safety.

Ford believes that the subject noncompliance is inconsequential to motor vehicle safety because the backup lamp only illuminates while the vehicle is backing up or is beginning to back up, therefore, normal operation on roads and highways would be unaffected and the noncompliance does not impact the conspicuity of motor vehicles on public roads, so that their presence is perceived, and their signals are understood during the day and at night or in low visibility conditions.

Ford claims that the applicable testing procedures do not correlate "to what another driver or pedestrian would experience if they were viewing one of the subject vehicles." Ford states that (1) vehicles in the field would be equipped with production bulbs, not rated bulbs, and (2) "the voltage used on the NHTSA test report is higher than what could be on the vehicle."

Ford states that "[f]or the subject vehicles, the theoretical maximum voltage that could be applied to the backup lamps is 13.3 v," and Ford designed the lamp to operate at 12.8v. Based on Ford's design, the supplier predicted that the left-hand backup lamps would test at 236 Cd at the H-V test point, and the right-hand back up lamp would test at 234 Cd at the same test point which is about 22 percent less than the 300 Cd limit that is required. However, Ford says it decided to verify the design assumptions because "[t]he voltage for the compliance test sometimes does not match the voltage supplied by the vehicles, and a change in voltage results in a change in brightness."[1] Ford found that of 14 vehicles, the maximum output was 12.85 volts, which it says is more aligned with the design. Ford found that with the 12.85 volts, "a statistical worst case of 327 candelas at the HV point (9% exceedance) is predicted."

Upon review of NHTSA's test report that showed the subject noncompliance, Ford says it tested 30 lamps, comparing the use of production bulbs at 12.9 volts and the theoretical

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[1] *See, e.g., Grant of Petition for Determination of Inconsequential Noncompliance; Hella, Inc.*; 55 FR 37601. September 12, 1990

maximum at 13.3 volts. Ford found that at 12.9 volts, the H-V test point values "ranged from 197.8 cd to 306 cd (the latter representing 2 [percent] exceedance)." At 13.3 volts, Ford recorded values for the H-V test point that "ranged from 221.32 cd to 337.41 cd (the latter representing 12.5 [percent] exceedance)." Ford adds that, in order to "achieve a value of 460 Lm for the rated bulb, those tests were run at a voltage of 14.25 volts and amperage of 1.961 amps."

Ford notes that it is not aware of any reports, complaints, accidents, or injuries related the subject noncompliance. Ford says it "recognizes that this fact is not dispositive" but believes that it is "illustrative of the field performance."[2]

In its petition, Ford relies on studies done by the University of Michigan Transportation Research Institute (UMTRI), its own additional testing, including a "jury evaluation," and NHTSA precedent to support its claims.

UMTRI reports

Ford states that past NHTSA decisions for inconsequential noncompliance referred to UMTRI's, 1994 report titled, "*Driver Perception of Just Noticeable Differences of Automotive Signal Lamp Intensities"*[3] and its 1997 report that extended the study to low beam automotive headlamps[4]. Ford argues that NHTSA has granted past petitions in cases where luminosity exceeds the requirement based on the reports finding that "the human eye is unable to detect a 25 [percent] change in illumination." Ford says the 1994 study indicated that the results were relevant for evaluating inconsequential noncompliance petitions pertaining to vehicle lamp intensities that exceed the performance requirements given in FMVSS No. 108.

For vehicles in the field, Ford's prediction is that the maximum candela value will be 327 cd, or a 9 percent exceedance, at point H-V due to the maximum voltage in the subject vehicle.

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[2] *See North American Subaru, Inc., Denial of Petition for Decision of Inconsequential Noncompliance*; 87 FR 46764 (August 10, 2022).
[3] *See* DOT report, *Driver Perception of Just Noticeable Differences of Automotive Signal Lamp Intensities,* DOT HS 808 209, September 1994. *https://ntrl.ntis.gov/NTRL/dashboard/searchResults/titleDetail/PB95206306.xhtml*
[4] *See Just Noticeable Differences for Low-Beam Headlamp Intensities* (Sayer, Flannagan, Sivak, Kojima, and Flannagan), Report No. UMTRI-97-4, February 1997.
https://ntrl.ntis.gov/NTRL/dashboard/searchResults/titleDetail/PB97147300.xhtml

Ford believes that the extent of the subject noncompliance "is such that the human eye is unable to distinguish the worst- case rear backup lamp from a compliant rear backup lamp."

Ford says it then conducted a jury evaluation to confirm the results of the UMTRI studies in relation to the subject noncompliance and its impact on drivers of trailing vehicles and pedestrians.

Jury Evaluation

Ford's jury evaluation[5] involved six participants observing "the lamps with voltage modulated to represent the candela values measured in the Agency's testing, under a variety of conditions (light, dark, tail lamps illuminated, brake lamps illuminated)."

The observers were unable to consistently distinguish the differences between the light outputs when given seven seconds. When given approximately 5 minutes to evaluate the light outputs, all of the observers could identify which lamps were at 240 cd which were at 350 cd. However, after 5 minutes, none of the observers could distinguish between lamps that were set at 300 cd and lamps set at 350 cd. Additionally, the observers did not identify any conditions that caused "unusual brightness or glare that could potentially affect operators of a trailing vehicle or a pedestrian." Ford first asked the observers to evaluate the light output with just the backup lamps illuminated in the taillamp, then asked the observers to evaluate the light output with the backup lamps at 350 cd, and the taillamp brake lamps illuminated. Ford says the observers found that the "illumination of the stop lamps took the focus away from the backup lamps," because of the color difference and the similarities in brightness between the lighting functions. Ford says that the backup lamps being illuminated with the brake lamps also being illuminated is very unlikely because a driver would typically depress the brake pedal when shifting to reverse the vehicle and while backing up. Ford contends that these results validated the UMTRI reports.

NHTSA Precedent

[5] More details of Ford's jury evaluation can be found in their petition available on the docket.

Ford states that, historically, NHTSA has granted petitions involving noncompliances similar to the subject noncompliance. Ford cites the following NHTSA decisions:

1. Chrysler Corp.; Grant of Petition for Decision of Inconsequential Noncompliance; 52 FR 17499 (May 8, 1987). This petition concerned backup lamps installed on vehicles that were 68 candela below the required minimum at test point H-V, and therefore, did not meet the photometric requirements of FMVSS No. 108. Ford says, "NHTSA concluded that the 20 [percent] reduction on 800 vehicles would be statistically unlikely to produce even one injury."
2. Grant of Petition for Decision of Inconsequential Noncompliance; Hella Inc., 55 FR 37601 (September 12, 1990). Ford says Hella's petition for inconsequential noncompliance involved taillamps that exceeded the requirement by 20 percent in the worst case. Ford states that Hella's petition included the argument that the human eye cannot identify a change in luminescence unless increases or decreases by more than a 25 percent. Hella added that the lamps were designed to conform to FMVSS No. 108, and the voltage of production lamps would be less than the voltage tested in the laboratory. In granting Hella's petition, Ford says, "NHTSA agreed with Hella's statements and referenced other instances where NHTSA granted petitions for inconsequentiality regarding the light output requirements of FMVSS No. 108."
3. Subaru of America; Grant of Petition for Determination of Inconsequential Noncompliance, 56 FR 59971, November 26, 1991. In this case, Ford says the noncompliance at issue concerned "failures of luminous intensity on the side reflex reflector" where the lamps tested at 20 percent less than what is required by FMVSS No. 108. Additionally, Ford says Subaru's petition included details of a "study where observers could not differentiate between the reflected light of complying and noncomplying reflectors at distances of 30 m, 60 m, and 100 m."

Ford states that NHTSA granted Subaru's petition based on the same reasoning used in Hella's petition.

4. Toyota Motor North America, Inc, Grant of Petition for Decision of Inconsequential Noncompliance; 85 FR 39679 (July 1, 2020). Ford describes a petition submitted by Toyota in which the noncompliance involved vehicles that were equipped with reflex reflectors that had a luminous intensity that were 18 percent less than the required minimum. Ford says NHTSA agreed with Toyota "that a change of luminous intensity of 18 percent is imperceptible to the human eye" and based its decision in this case on an evaluation provided by NHTSA and the prior Hella and Subaru decisions.
5. North America Subaru, Inc., Denial of Petition for Decision of Inconsequential Noncompliance; 87 FR 48764, August 10, 2022. The noncompliance in this petition involved front combination lamp side reflex reflectors with a luminous intensity that measured below the minimum requirement by more than 25 percent. While NHTSA denied Subaru's petition for inconsequential noncompliance in that case, Ford believes that its current petition differs from Subaru's because Ford conducted a jury evaluation and relied on camera measurements to support its petition. Second, Ford quotes NHTSA's decision as stating, "the performance requirements for reflex reflectors are measured in (cd/incident ft-c) or (mcd/lux), whereas the performance requirements for signal lighting assessed in the [UMTRI] study are measured in candela (cd)."

Ford concludes by stating its belief that the subject noncompliance is inconsequential as it relates to motor vehicle safety and its petition to be exempted from providing notification of the noncompliance, as required by 49 U.S.C. 30118, and a remedy for the noncompliance, as required by 49 U.S.C. 30120, should be granted.

NHTSA notes that the statutory provisions (49 U.S.C. 30118(d) and 30120(h)) that permit manufacturers to file petitions for a determination of inconsequentiality allow NHTSA to exempt manufacturers only from the duties found in sections 30118 and 30120, respectively, to notify owners, purchasers, and dealers of a defect or noncompliance and to remedy the defect or noncompliance. Therefore, any decision on this petition only applies to the subject vehicles that Ford no longer controlled at the time it determined that the noncompliance existed. However, any decision on this petition does not relieve vehicle distributors and dealers of the prohibitions on the sale, offer for sale, or introduction or delivery for introduction into interstate commerce of the noncompliant vehicles under their control after Ford notified them that the subject noncompliance existed.

(Authority: 49 U.S.C. 30118, 30120: delegations of authority at 49 CFR 1.95 and 501.8)

Otto G. Matheke III,

Director, Office of Vehicle Safety Compliance.

[FR Doc. 2024-00392 Filed: 1/10/2024 8:45 am; Publication Date: 1/11/2024]