



DEPARTMENT OF TRANSPORTATION

National Highway Traffic Safety Administration

[Docket No. NHTSA-2019-0124; Notice 1]

North America Subaru, Inc., Receipt of Petition for Decision of Inconsequential Noncompliance

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

ACTION: Receipt of petition.

SUMMARY: North America Subaru, Inc., (NASI) on behalf of Subaru Corporation and Subaru of America, Inc. (Subaru) has determined that certain model year (MY) 2016 - 2020 Subaru Impreza motor vehicles do not fully comply with Federal Motor Vehicle Safety Standard (FMVSS) No. 108, *Lamps, Reflective Devices, and Associated Equipment*. Subaru filed a noncompliance report dated October 10, 2019. Subaru also petitioned NHTSA on October 23, 2019, for a decision that the subject noncompliance is inconsequential as it relates to motor vehicle safety. This document announces receipt of Subaru's petition.

DATES: The closing date for comments on the petition is **[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 number 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 am to 5 pm 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).

SUPPLEMENTARY INFORMATION:

I. Overview: Subaru has determined that certain MY 2016 - 2019 Subaru Impreza motor vehicles do not fully comply with S7.4.13.1 of FMVSS No. 108, *Lamps, Reflective Devices, and Associated Equipment* (49 CFR 571.108). Subaru filed a noncompliance report dated October 10, 2019, pursuant to 49 CFR part 573, *Defect and Noncompliance Responsibility and Reports*. Subaru also petitioned NHTSA on October 23, 2019, 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 Subaru's petition, is published under 49 U.S.C. 30118 and 30120 and does not represent any agency decision or other exercises of judgment concerning the merits of the petition.

II. Vehicles Involved: Approximately 63,697 MY 2016 - 2020 Subaru Impreza 4 door and approximately 124,703 Subaru Impreza Stationwagon, totaling 188,400 motor vehicles manufactured between September 23, 2016, and August 7, 2019, are potentially involved.

III. Noncompliance: NASI explains that the noncompliance is that the subject vehicles are equipped with headlamp assemblies that do not meet the requirements of paragraphs S8.1.11 and S10.15.6 of FMVSS No. 108. Specifically, the left front and right front halogen headlamp

assemblies, containing the side reflex reflector and low beam reflector, may not fully meet requirements set forth in FMVSS No. 108. When tested, four of four headlamp assemblies (samples LH1, LH2, LH3 and LH4) failed to comply at certain test points.

IV. Rule Requirements: S8.1.11 and S10.15.6 of FMVSS No. 108 include the requirements relevant to this petition. Each reflex reflector must be designed to conform to the photometry requirements of Table XVI-a, when tested according to the procedure of S14.2.3, for the reflex reflector as specified by FMVSS No. 108. Each replaceable bulb headlamp must be designed to conform to the photometry requirements of Table XVIII for upper beam and Table XIX for lower beam as specified in Table II-d for the specific headlamp unit and aiming method, when tested according to the procedure of S14.2.5 using any replaceable light source designated for use in the system under test.

V. Summary of NASI's Petition:

The following views and arguments presented in this section, V. Summary of NASI's Petition, are the views and arguments provided by Subaru. They have not been evaluated by the Agency and do not reflect the views of the Agency.

NASI described the subject noncompliance and stated its belief that the noncompliance is inconsequential as it relates to motor vehicle safety. NASI submitted the following views and arguments in support of its petition:

1. NASI submits that the nonconformance relating to side reflex reflector photometry is inconsequential as it relates to motor vehicle safety for the following reasons:
 - a. Real world testing conducted by Subaru showed that noncompliant and compliant reflex reflectors are equally detectable in real world conditions. An overview of cognitive performance testing of the compliant and noncompliant reflex reflectors is

attached to this petition. The test set-up simulated a condition typical of a vehicle approaching an unlit, perpendicular vehicle stalled in the driving lane. This test condition simulates a real world condition where side reflex reflectors would support improved visibility of that vehicle. The test results show that, with respect to light reflectance and their ability to be detected, there is no noticeable difference observable between the fully compliant reflex reflector and the reflex reflector that marginally under-complies at select test points.

- b. At a majority of the test points where the tested reflex reflectors were found to have measured intensities below the required minimum values, the measured values were generally only slightly less than the required minimum. For two of the four lamp assemblies tested, there was one point (point HV) where measured values slightly exceeded the 25% threshold cited by NHTSA and others in the past as being the threshold at which the difference between two lamp intensities of less than 25% cannot be detected reliably by most drivers (see DOT report, *Driver Perception of Just Noticeable Differences of Automotive Signal Lamp Intensities*, DOT HS 808 209, September 1994). The two measured values were below the required minimums by 26.9% (sample LH1) and 27.7% (sample LH4). We note that, on average (for the four samples tested by Calcoast), the HV test point was only 24.8% below the required minimum. We also note, as mentioned above, that the cognitive performance testing conducted by Subaru found there to be no noticeable differences in detectability for the compliant and noncompliant reflex reflectors in question.
- c. For a dynamic situation, light reflecting at a particular test point will be observed for

only a short period of time. Compared to a light source that is constantly illuminated, the intensity originating from a reflex reflector is more fleeting to an observer. Reflex reflector intensity varies significantly depending on the angle of the driver's eyes to the reflector's central axis. Larger angles mean less light will be seen from the reflex reflector. Smaller angles mean more light will be seen from the reflex reflector. As a result, a nonconformity at a given test point for a reflex reflector will generally have a minimal impact on detectability. Thus, minor nonconformances at any one test point should be inconsequential with respect to safety risk.

- d. It has been recognized by NHTSA in the past that it is inherently difficult to manufacture all lamps to comply with all test points and that random failures do occur. FMVSS 108 requires lighting equipment be designed to conform to relevant requirements as opposed to simply comply with relevant requirements. According to NHTSA (see 62 FR 63416), occasional random non-compliances are to be expected in this very complicated design and manufacturing process and it is for this reason that the "designed to comply" provision is contained in the lighting standard. See commentary from the Oct. 12, 2018 (83 FR 51766) NPRM in which NHTSA proposed to amend FMVSS 108 to permit the certification of adaptive driving beam headlighting systems. In that notice, the Agency noted that, historically, there has never been an absolute requirement that every motor vehicle lighting device meets every single photometric test point to comply with FMVSS No. 108.
- e. NHTSA has previously granted Subaru and General Motors petitions for inconsequentiality involving side reflex reflectors which were determined to be

nonconforming at select test points by varying degrees. *See* 56 FR 59971

(November 26, 1991) for Subaru and 57 FR 45867 (October 5, 1992) for General Motors.

- f. NASI is not aware of any field or customer complaints related to the performance of the side reflex reflectors contained the subject headlamp assemblies, nor have we been made aware of any accidents or injuries that have occurred relating to the performance of these lamp assemblies.

2. NASI submits that the nonconforming condition relating to low beam photometry is inconsequential as it relates to motor vehicle safety for the following reasons:

- a. In compliance testing conducted by CALCOAST-ITL on behalf of NHTSA (see NHTSA Report No. 108-CAN-19-002), two of four headlamps assemblies tested (samples LH1 and LH4) failed to comply with certain low beam photometry requirements in S10.15.6.

- i. Sample LH1:

- Headlamp assembly sample LH1 photometry was measured at twenty-four test points. At two of the twenty-four test points, sample LH1 exceeded the maximum allowable luminous intensity values by small amounts (11.4% and 4.7%). At one of the twenty-four test points, sample LH1 was below the minimum acceptable luminous intensity value by 13.0%.
- At 21 of 24 test points, sample LH1 complied with the specified luminous intensity values listed in Table XIX-a (LB2V).

- ii. Sample LH4

- Headlamp assembly sample LH4 photometry was measured at 24 test points. At two of the twenty-four test points, the sample LH4 exceeded the maximum allowable luminous intensity values by small amounts (16.8% and 19.4%). At 22 of 24 test points, sample LH4 complied with the specified luminous intensity values listed in Table XIX-a (LB2V).

iii. For both sample LH1 and LH4, test points at which the max. allowable luminous intensity values were exceeded at test points 1.0 degree and 0.5 degree up from the horizontal, respectively. These test points, which were taken in the range of 1.5 degrees to 9.9 degrees left of center, are in place to ensure that glare is minimized to oncoming drivers. In the UMTRI report entitled "Just Noticeable Differences for Low-Beam Headlamp Intensities" (UMTRI-97-4), testing was conducted to evaluate "just noticeable differences" or JNDs for glare intensities of oncoming low-beam headlamps. Specifically, UMTRI looked at whether the 25% rule established by NHTSA for signal lamps would be applicable for the range of intensities relevant to low-beam headlamps. Based on the testing conducted by UMTRI using low-beam headlamps, UMTRI concluded that applying the 25% limit for inconsequential noncompliance to a photometric test point that specifies a maximum for glare protection would be appropriate.

Given the UMTRI conclusion, we believe that the small exceedances in max intensities for these two test points are inconsequential to safety.

iv. For sample LH1, test point 4.0D 20.0R was the third point which was noncompliant per the measurements taken. This test point measures light

intensity down and to the right (4 degrees below the horizontal and 20 degrees to the right of center). The minimum intensity value ensures adequate light down and far right (e.g., sidewalk to the right of the vehicle). Sample LH1's measured light intensity was 13% less than the required value.

Of the four samples tested by Calcoast, only one sample was noncompliant at this test point. This degree of nonconformity was minimal (13% below the required value). When the other three samples were tested, the measured intensities at this test point over-complied by margins of 47.2%, 27.8% and 2.8%.

For sample LH1, a point within the Zone 10U-90U/90L-90R at 10.00U-7.3R exceeded the maximum permissible intensity threshold by 8.7%. The maximum allowable intensity of 125 candelas in this zone was established to reduce the amount of glare to the driver of the car with the subject headlamp in driving conditions involving poor weather (rain, fog, snow, etc.). The consequence of one of four samples having a measurement of 8.7% above the maximum allowable value is inconsequential given the exceedance is far less than the 25% just noticeable difference.

As discussed previously in this petition, it has been recognized by NHTSA in the past that it is inherently difficult to manufacture all lamps to comply with all test points and that random failures do occur. FMVSS 108 requires lighting equipment be designed to conform to relevant requirements as opposed to simply comply with relevant requirements. Occasional random

non-compliances are to be expected (see 62 FR 63416). This is why there has never been an absolute requirement that every motor vehicle lighting device meets every single photometric test point to comply with FMVSS 108 (see 83 FR 51766).

Based on the data before us, we believe that the light intensity measured at test point 4.0D 20.0R for one of four samples tested is inconsequential to safety.

3. NASI is not aware of any field or customer complaints related to the low-beam performance of the subject headlamp assemblies, nor have we been made aware of any accidents or injuries that have occurred relating to the performance of these lamp assemblies.
4. For the foregoing reasons, NASI submits that the subject non-compliance does not present an unreasonable risk, is inconsequential as it relates to motor vehicle safety and requests an exemption from the notification and remedy requirements of the Motor Vehicle Safety Act pursuant to 49 U.S.C. 30118(d) and associated regulations at 49 CFR part 556.

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 NASI 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 Subaru 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)

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Director, Office of Vehicle Safety Compliance.

Billing Code 4910-59-P

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