



U.S. Department
of Transportation

**National Highway
Traffic Safety
Administration**

NHTSA - 2014 - 005B

1200 New Jersey Avenue, SE
Washington, DC 20590

DEPARTMENT OF
TRANSPORTATION

2019 JUN -3 P 2:55

DOCKET OPERATIONS

MAY 6 - 2019

Mr. Michael Haas
Haas Design Concepts
P.O. Box 575
Tiburon, CA 94920

Dear Mr. Haas:

This responds to your letter asking whether your product, the HAAS Design Concepts sequential perimeter lighting system, is permissible under Federal Motor Vehicle Safety Standard (FMVSS) No. 108, *Lamps, Reflective Devices, and Associated Equipment* (49 CFR § 571.108). As explained below, your product is permissible if it operates in a manner that is synchronized with the vehicle's required turn signals and satisfies the other criteria cited in this letter.

By way of background, the National Highway Traffic Safety Administration (NHTSA) is authorized under the National Traffic and Motor Vehicle Safety Act (49 U.S.C. Chapter 301) to issue FMVSSs that set performance requirements for new motor vehicles and items of motor vehicle equipment. NHTSA does not provide approvals of motor vehicles or motor vehicle equipment. Instead, manufacturers are required to self-certify that their products conform to all applicable safety standards that are in effect on the date of manufacture, before the product can be offered for sale. Manufacturers must also ensure their products are free of safety-related defects.

The following interpretation of FMVSS No. 108 is based on our understanding of the information provided in your letter, and is limited to the system you described.

Description of Your Product

From your letter and follow-up correspondence with my staff, we understand that your product consists of a strip of 24 amber-colored LEDs that are mounted inside a 30-inch long "Metalized Plastic rail."¹ This rail would be attached horizontally along the lower portion of the exterior of a vehicle's driver and front passenger doors with "two-sided automotive acid rain tape." The LED strip would be wired into a "Sequential Controller" through a hole in the door panel. This Sequential Controller in turn would be "fastened" to the vehicle's existing turn signal system.

¹ You explain that these LEDs "are sealed by clear-colored cocking inside the cap rail which are protected from the elements by Smoke Colored Polycarbonate plastic covers," and that the polycarbonate material you use to cover your product's LEDs "is similar to the polycarbonate used to protect all automotive head lights and tail lights." We would like to point out that the polycarbonate that is typically used to protect required lighting cannot meet the requirements of S14.4.2 without some sort of protective coating.

We understand that your product operates as follows: When the headlamps are activated, all 24 of your product's LEDs illuminate as steady-burning lamps. When the driver activates the left or right turn signals, the amber-colored LEDs on the corresponding side become brighter sequentially from the "front" end of the rail (i.e., the end nearer to the front of the car) to the rear end of the rail. It is our understanding that this sequential turn signal function can be activated regardless of whether the headlamp system is on or off, the only difference being the initial brightness of the LEDs (dim vs. off). You state that your product's cycle of sequentially activating LEDs is timed so that the cycle restarts at a rate that matches the flash rate of the required turn signals, and that if the turn signal is cancelled, the LEDs immediately return to their steady-burning (or "off") state even if they are only partway through a cycle.

Applicable Requirements

Motor vehicle lighting that is installed as original equipment is regulated under FMVSS No. 108. FMVSS No. 108 requires that vehicles be equipped with certain types of lamps ("required" lamps), and sets out specific performance standards that those lamps must meet. Non-required (or "auxiliary") lamps, while still regulated under FMVSS No. 108, are not required to meet specific performance requirements in the same way that the required lamps are. Rather, auxiliary lamps are subject to S6.2.1, which states: "No additional lamp, reflective device, or other motor vehicle equipment is permitted to be installed that impairs the effectiveness of lighting equipment required by this standard."

NHTSA has issued numerous interpretations on the meaning of the phrase "impairs the effectiveness" in S6.2.1. For example, an auxiliary lamp impairs the effectiveness of required lighting equipment if it causes "confusion with the signal sent by another [required] lamp."² Further, an auxiliary lamp that supplements a specific required lamp should "perform in the same manner, and perform the same function, as the original equipment it is intended to supplement."³ The question of whether an auxiliary lamp impairs required lighting equipment is usually decided on a case-by-case basis.

Discussion

We do not believe that your product would impair the effectiveness of a vehicle's required lighting equipment in either its steady-burning state or when it sequentially flashes for signaling purposes. Please note, however, that your product may need to conform to certain requirements relating to the vehicle's hazard warning system, depending on whether your product activates with the vehicle's hazard warning lamps.

We do not believe that your product would impair the effectiveness of required lamps in its steady-burning state because it operates in a way that is consistent with FMVSS No. 108's requirements for a side marker lamp (which is the type of signal lamp your product most closely resembles).⁴ Specifically, your product activates when the vehicle's headlamp system is

² Letter to Byung M. Soh (Sept. 13, 1988), available at <https://isearch.nhtsa.gov/gm/88/nht88-3.100.html>.

³ Letter to Mr. Bart W. Hill (Aug. 27, 1999), available at <http://isearch.nhtsa.gov/files/20174.ztv.htm>.

⁴ Letter to Robert M. Currie (Jan. 31, 1997), available at <https://isearch.nhtsa.gov/files/13208.ztv.html>.

activated. Its LEDs are steady-burning except when they flash as part of the turn signal system. Furthermore, the LEDs are amber, which we have previously determined is the only appropriate color for auxiliary side marker lamps that are located towards the front end of the vehicle.⁵

We also do not believe that your product would impair the effectiveness of the vehicle's required turn signals when flashing for signaling purposes because your product's cycle of sequentially illuminating its LEDs repeats at a rate that is synchronized to the required turn lamps.⁶ The illumination sequence restarts in time with each flash of the required turn signal lamps, and when the turn signal is cancelled, your product returns to a steady-burning state (or turns off) immediately.⁷

Although you do not discuss your product's functionality as a hazard lamp in your interpretation request, we believe it is possible that, depending on how your product is wired, its LEDs may activate as part of the vehicle's hazard warning system. If this is the case, your product would need to meet additional requirements to ensure it does not impair the effectiveness of the vehicle's hazard lamps. S6.6.2 of FMVSS No. 108 requires a "vehicular hazard warning [signal] operating unit,"⁸ which is defined in S4 as "a driver-controlled device which causes all required turn signal lamps to flash simultaneously to indicate to approaching drivers the presence of a vehicle hazard." Although your product is not a "required turn signal lamp," if it is activated as part of the vehicular hazard warning signal system, its LEDs would need to flash simultaneously when the hazard warning lights are activated to be permissible under FMVSS No. 108. If the LEDs illuminate sequentially rather than "simultaneously," it could cause driver confusion and could potentially interfere with the effectiveness of the hazard warning system.

Lamp Brightness

Separate from your product's sequential activation pattern, we are concerned that the brightness of your product's LEDs could potentially impair the vehicle's required signal lamps. Specifically, if the LEDs are too bright, it could obscure the vehicle's required signal lamps, or could cause other drivers not to recognize that your product supplements the vehicle's required turn signals. To avoid the possibility of impairment due to brightness, it is our view that a supplemental signal lamp such as your product should not be noticeably brighter than the required lamps that it supplements. Note that, because the question of impairment should be analyzed on a vehicle-by-vehicle basis, the maximum brightness of an auxiliary signal lamp on a particular vehicle must be determined based on the brightness of the required signal lamps that are actually installed as original equipment on that vehicle—even if FMVSS No. 108 permits signal lamps of that type to be brighter.

Make Inoperative Provision

Please note that your product would be subject to the Safety Act's "make inoperative" provision (49 U.S.C. § 30122). The "make inoperative" provision prohibits manufacturers,

⁵ Letter to Robert J. Ponticelli (Aug. 18, 1995), available at <https://isearch.nhtsa.gov/files/1083.html>.

⁶ Letter to Jerry Koh (Feb. 6, 1986), available at <https://isearch.nhtsa.gov/gm/86/86-2.50.html>

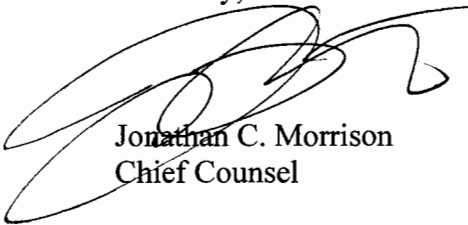
⁷ We note that side marker lamps do not need to flash simultaneously with required turn lamps to be synchronized. See letter to Warren M. Heath (Dec. 23, 1969), available at <https://isearch.nhtsa.gov/aiam/aiam0192.html>.

⁸ The text of S6.6.2 uses the term "vehicular hazard warning operating unit," which inadvertently omits the word "signal."

distributors, dealers, rental companies and motor vehicle repair businesses from “knowingly mak[ing] inoperative any part of a device or element of design installed on or in a motor vehicle or motor vehicle equipment in compliance with an applicable motor vehicle safety standard” promulgated by NHTSA. If a business that falls into one of these categories were to install your product on a vehicle in a way that interferes with a vehicle’s required lighting or otherwise renders a vehicle’s other safety features inoperative, that entity could be subject to a NHTSA enforcement action. Historically, NHTSA has viewed the “impairment” and “make inoperative” standards as identical (i.e., lighting equipment that is prohibited under the impairment provision would also be prohibited under the make inoperative provision, and vice versa).⁹

If you have further questions, you may refer them to Daniel Koblenz of my staff at (202) 366-2992.

Sincerely,



Jonathan C. Morrison
Chief Counsel

⁹ E.g., Letter to Timothy C. Murphy (Nov. 1, 2004), available at <https://isearch.nhtsa.gov/files/GF006332.html>.

HAAS DESIGN CONCEPTS
Perimeter Lighting Technology

VIA FACSIMILE / ATTN: John Piazza c/o Patricia Monroe (202) 366-3820

August 7, 2015

The Chief of Counsel National
Highway Traffic Administration.
W41-326 US Department of Transportation
1200 New Jersey Avenue.
SE, WASHINGTON DC 20590

OFFICE OF CHIEF COUNSEL
RECEIVED
2015 JUL 10 P 3:43

To whom it may concern:

I am requesting a legal interpretation for my particular patent-pending product (Provisional Application #62034122).

Specifically, we are inquiring whether our amber light-emitting diode (LED) Sequential Perimeter Lighting Systems, manufactured by HAAS Design Concepts Inc. (HDC) in Northern California USA, will meet the Federal Motor Vehicle Safety Standard (FMVSS) No. 108, Lamps, Reflective Devices, and Associated Equipment. We intend to sell our safety products to both Aftermarket and OEM Companies. Please visit the "Video" section of www.haasdesignconcepts.com to view the US TODAY MAGAZINE interview to see the potential our product has to save lives.

For over 30 years we have worked to make driving safer and more enjoyable for drivers, pedestrians, motorcyclists and bicycle riders. HDC is committed to improved vehicle safety. HDC products are designed and built to improve safety by heightening driver awareness, particularly for individuals who are elderly with impaired peripheral vision challenges, those who may be impaired by driving under the influence, and other similar high-risk categories, as well as for the everyday driver. Our company's newest product HAAS Lighting Systems integrates Sequential LED turn signal surround notification into the left and right lower door panels on vehicles. **We use only standard materials, including 5730 LED lighting encased in 6061 aluminum extrusion bar stock affixed to the vehicle using acid rain double-sided tape.**

Sincerely,


Michael Haas
michaelhaas@haasdesignconcepts.com

PO Box 575
Tiburon, CA 94920
(415) 305-7338
email: michaelhaas@haasdesignconcepts.com

**HAAS Design
Concepts**

Fax

To: PATRICIA MCINTOE from: MICHAEL HAAS
Fax: 202-366-3820 Pages: 4
Phone: 202-366-8852 Date: JANUARY 3, 2017
Re: HDC-3 LIGHTING TECHNOLOGY

Urgen For Review Please Comment Please Reply Please Recycle

Hi Patricia

Please give the enclosed cover letter
and two documents to John Piazza,
at the Party

Michael Haas

Description of HDC2 Lighting System

HAAS Design Concepts has created a life-saving Perimeter LED Sequential Turn Signal Lighting Systems for automobiles and trucks called the *HDC2 Lighting System*. The *HDC2 Lighting System* integrates sequential amber-colored LED turn signal strips onto the left and right lower door panels of passenger vehicles and range in size from 40" to 47" in length x 1.2" width x 3/8" depth.

The amber colored LED Strips are installed inside a channel within a chrome colored two piece "aesthetic" mold injected Metalized Plastic rail. The rails are also referred to as automotive extrusions or chrome moldings. The amber-colored LED Strips lay in each rail and are sealed by clear-colored cocking inside the cap rail which are protected from the elements by Smoke Colored Polycarbonate plastic covers. This system is similar to the clear Polycarbonate used to protect all automotive head lights and tail lights.

Two-sided automotive acid rain tape holds the rails onto the lower door panels of a vehicle. Screws and clips are not used in this process. The two wires that connect from the LED's in the rails are strung through the back side of the rails, to a sealed 1/4 inch hole in the lower door cavity, continuing through the door-jam wiring harness, which connects to a Sequential Controller (CMOS Counter). The CMOS works by opening and closing a number of circuits in a programmed pattern. The CMOS is fastened to the vehicles turn signal indicator system and now we have a Sequential LED Perimeter Lighting System.

In addition to enhancing the aesthetics of any vehicle, the *HDC2 Lighting System* has two primary safety functions. First, when the vehicles head light system is turned on in the vehicle, the LED's light up and become running lights; and Second, when the driver uses the vehicles left or right turn signal indicators, the amber-colored LED's become brighter in color and work Sequentially 12 times from the front to the back of the rails. The point of the *HDC2 Lighting System* IS TO BE NOTICED, particularly when a driver is adjacent to another vehicle and is unable to see that vehicle's front or rear turn signals.

HAAS Design Concepts created the aesthetic life-saving HDC2 Lighting System to enhance safer driving. Remember: Use your turn signal, it's about all of ofus all ofall of us!

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Two-sided automotive acid rain tape holds the rails onto the lower door panels of a vehicle. Screws and clips are not used in this process. The two wires that connect from the LED's in the rails are strung through the back side of the rails, to a sealed ¼ inch hole in the lower door cavity, continuing through the door-jam wiring harness, which connects to a Sequential Controller (CMOS Counter). The CMOS works by opening and closing a number of circuits in a programmed pattern. The CMOS is fastened to the vehicles turn signal indicator system and now we have a Sequential LED Perimeter Lighting System.

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HAAS Design Concepts

Perimeter Lighting Technology

HAASDESIGNCONCEPTS.COM

January 3, 2017

Hi John,

As per our conversation three weeks ago regarding Analiese Marchesseault's departure from your department, who was the person responsible for Haas Design Concepts inquiry as a requester to the engineers. That said we have not received any communication from Analiese since December 7, 2015.

Attached in this fax to you, "are the last two forms of communication from & to Analiese", by way of my former CFO, Jeff Silver. Haas Design Concepts "HDC3 Lighting Systems is a serious lighting safety OEM product for Toyota who requires a certification letter from the DOT. Toyota, Haas Design Concepts and my vendors have been anxiously waiting to hear from your department so we can proceed to manufacture our product for the purposes of saving lives.

To completely understand a full perspective as to what we are eagerly trying to achieve, please feel free to view our Haas Design Concepts web sites, video and product pages.

I will follow up and contact you around the middle of this month.

Sincerely,



Michael Haas
President

From: <Analiese.Marchesseault@dot.gov>
Date: December 7, 2015 at 5:14:54 AM PST
To: <jeff@rpartners.com>
Cc: <michaelhaas96@yahoo.com>
Subject: RE: HAAS Design Concepts - HDC2 Lighting System Description

Jeff,

I'm working with the engineers to develop a response to your inquiry. Our policy is to not share initial impressions with requestors, so unfortunately you will have to wait to receive an official written response. If I need any additional information I will let you know.

Best,
Analiese

From: Jeff Silver [<mailto:jeff@rpartners.com>]
Sent: Thursday, December 03, 2015 5:38 PM
To: Marchesseault, Analiese (NHTSA)
Cc: michaelhaas96@yahoo.com
Subject: RE: HAAS Design Concepts - HDC2 Lighting System Description

Print

Page 1 of 1

Subject: Re: HAAS Design Concepts HCDC Lighting Systems - Update
From: Michael Haas (michaelhaas96@yahoo.com)
To: jeff@rpartners.com;
Date: Thursday, July 28, 2016 2:35 PM

Perfect!! Thank you so much and just maybe we will hear good news soon..... Fingers crossed ☺

Sent from my iPhone

On Jul 28, 2016, at 2:16 PM, Jeff Silver <jeff@rpartners.com> wrote:

Dear Analiese,

Hello, Michael Haas and I hope all is well with you and that you are enjoying your summer.

In an effort to keep you in the loop, HAAS Design Concepts *HDC2 Lighting Systems* provisional patent application would have expired on August 10, 2016. In an effort to continue to protect our pending patent application, we have just completed a new application through the USPTO under the updated name of "*HDC3 Lightings Systems*" (Application No. 62366223).

As you know, we are anxiously awaiting any feedback on our filing with the NHSTA. We look forward to hearing from you.

Sincerely,

Jeff

Jeff Silver

CFO

HAAS Design Concepts

E: jeff@rpartners.com

M: (415) 860-2242