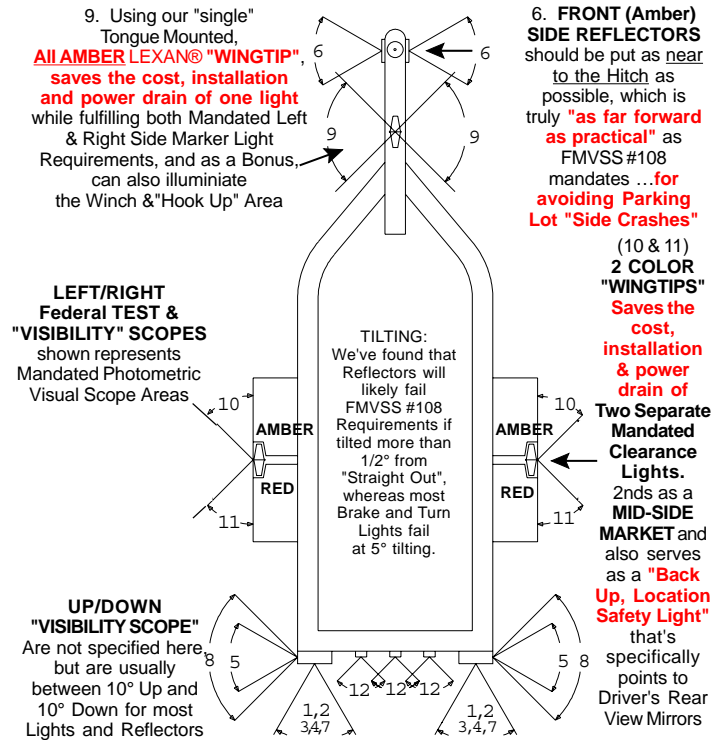


"LEGAL SUMMARY" for TRAILER Front, Rear & Side Presence & Signal Lighting

The Charted Data and Sketch below pretty much summarizes **Federal Motor Vehicle Safety Standard #108 Photometric Specifications** for Location and Visibility scopes of all Side and Rear Lights and Reflectors for all **Vehicles Under and Over 80"** in width. **NHTSA* "Mandated" Requirements** cover virtually all "Non" Motor Driven Vehicles (Trailers, etc.) and Motor Driven Vehicles. *National Highway Traffic Safety Administration

WARNING: NHTSA Compliance requires all Lights and Reflectors to be mounted in the exact orientation at which they were "Qualified Tested", which is almost always absolutely Perpendicular or Parallel to the axis of the Vehicle. Any "tilting" or "obstructions to the visibility" of Mandated Lights or Reflectors ... **must be photometrically compensated for or explained as Inconsequential to Public Safety.** Embarrassing and costly **Recalls** can result from Non-Compliances to FMVSS #108, not to mention the possibility of being **implicated in Crash related Lawsuits.**

Most Economical yet "Legal" Layout to Position Lights & Reflectors on Fendered Trailer, etc.



EUROPEAN LAW & HARMONIZATION

The "EU" Petitioned the U.S.A. to allow **Amber Rear Side Marker Lights & Reflectors** to be "Harmonized" with U.S. Law, which will likely be granted. Consider that **Side Marker Lights** are used primarily to represent **"presence at Intersections"** while **"Side" Reflectors** are used for avoiding Parking Lot accidents, **so either Red or Amber do this job so why not either color?**

NOTE to OEMs: A TAIL LAMP IS "NOT" A CLEARANCE LAMP TOO!

A Tail Lamp is **not** also a Clearance Lamp; however, a Clearance Lamp can be built into a Multi Function Lamp, but...it **must use a separate bulb** and be located to represent the "overall" and "extreme width" of the vehicle.

Our 8-Function Light Assemblies offer this added Clearance Lamp feature at added cost. **However note...you can save the expense of this Extra Bulb by using our New "WingTip" Combo Clearance Lamps!**
*Overall Width" means the same as "Extreme Width"

The Sketch above shows our Red/Amber Wing Tips® mounted on a Trailer's protruding fenders. **A Red/Amber Wing Tip on each Fender and a single All Amber Wing Tip on the Trailer Tongue** complemented with **2 Amber "Stick On" Tongue Mounted Reflectors**, provides the most economical yet "legal" arrangement for meeting FMVSS #108 Frontal Side Lights, and Side Reflector mandates. The remaining required Rear, Side Pointing Side Marker Light & Reflector are already built into all our 6/7/8 Multi-Function Tail Light Assemblies.

FMVSS #108 Quotes for LOCATION & VISIBILITY of Clearance & Other Mandated Lights

S5.1.1.9 A Boat Trailer* whose overall width is 80 inches or more need not be equipped with both front and rear clearance lamps provided an Amber (to front) and Red (to rear) Clearance Lamp is located at or near the midpoint on each side to indicate its extreme width.

*Common Sense dictates that this allowance applies to any Protruding Fender Type Trailer. We're asking NHTSA for a Legal Clarification on this point! Check our website for details.

VEHICLES UNDER and OVER 80" in WIDTH

REQUIRED

1. Tail Lamps, 2 Red
2. Stop Lamps, 2 Red
3. Turn Signal Lamps,

- 2 Red or 2 Amber
4. REAR Reflectors, 2 Red "As far apart as practical".
5. REAR SIDE Reflectors..... "As far back as practical" exactly Parallel to Axis. 2 Red Tested at .2° & 1.5° Angles, from 10° Up/Down & from 20° Left/Right Output

6. FRONT SIDE Reflectors*.....Same as REAR SIDE REFLECTOR (#5) but to FRONT. 2 Amber

7. REAR License Lamp (White).... Illumination of License Plate from Top or Side
8. REAR SIDE MARKER Lamp.... For REAR SIDE (Intersection) Viewing, located 2 Red, 1 on each side "as far back as practical".

9. FRONT SIDE MARKER Lamp.. For FRONT SIDE (Intersection) Viewing, located 2 Amber, 1 on each side "as far forward as practical". Canada varies location - Ask!

***Note:** The FMVSS #108 "As Far Forward as Practical" Requirement for **both Side "Forward" Reflectors** is primarily a Safety Requirement to **keep Drivers from running into "Parked" Vehicles at night.** Therefore, it's best to mount the Front Side Pointing Reflectors nearest to the Hitch Point as possible.

MID SIDE (POINTING) MARKER LIGHTS can be used to maintain the 30' maximum distance between Side Marker seen by Intersection Traffic and/or Pedestrians located at the side of "RIG" passing in front of them

ADD TO VEHICLES OVER 80" in WIDTH

REQUIRED

10. Clearance Lamps, Forward ... Seeable Forward depicting "Extreme Width" Amber Photometrics from 0° to 45° Outboard 10° Up/Down
11. Clearance Lamps, Rearward ... Seeable Rearward depicting "Extreme Width". Secified Photometrics from 0° to 45° Outboard
12. I.D. Lamps Spaced 6" to 12" apart for Over 80" Vehicle 3 Red, in middle Conspicuity. Each Photometric Tested between 45° Left to 45° Right, 10° Up/Down.

NOTE THAT IF CLEARANCE LIGHTS (10 & 11) ARE FENDER MOUNTED OR PROPERLY STEP PLATFORM MOUNTED ANY 7 FUNCTION TAIL LIGHT ASSEMBLY USED DOESN'T NEED A "REDUNDANT" BUILT IN CLEARANCE FUNCTION

8 FUNCTIONS are only needed if mounted at "Extreme Width" where the Rear Mounted (Red) Clearance Light is thus eliminated! - but this still leaves the Amber Forward Clearance requirement unfilled, whereas Wing Tips satisfy both directions.

Our ALL AMBER, FRONT, SIDE MARKER "COMBO" WINGTIPS Saves \$

S5.3.1.3 says that on a Trailer, the **amber front Side Reflex Reflectors and amber Front Side Marker lamps** may be located **"as far forward as practical, exclusive of the trailer tongue"**. This allowance does not preclude mounting a "Two Direction, Optically Combined" Side Marker Light anywhere on the Tongue as long as S5.3.1.1 Visibility is complied to. Our All Amber WingTip® complies to **all mandated Test Scans on both sides** simultaneously thus satisfying "AS FAR FORWARD AS PRACTICAL" and all Photometric Mandates **while using only one light instead of two.**

PERPENDICULAR & PARALLEL MOUNTING WARNING

We are unaware of any Lighting or Reflector devices currently sold that are not designed or have been "Qualify Tested" for other than **absolute Perpendicular or Parallel mountings** relative to the Axes of the Vehicle. **Any tilting variations drastically depletes mandated Photometrics and can start a costly and embarrassing Recall.** OEMs should **make it a point to ask Suppliers for "Specific" Lab Tests that allow any "Tilting" they may require.**

All Dry Launch Lights are Wire Color Coded as follows:

(This depicts most written & unwritten "Industry Standards")

BROWN	Tail Lights
YELLOW	*Combined or Left Turn
BROWN	Side Marker Lights
GREEN	*Combined or Right Turn
BROWN	Clearance Lights
RED	Separated Brake Signal
BROWN	Three I.D. Lights
WHITE	Ground
*Combined means combined Brake & Turn Signals	

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