

EMTSP

AASHTO

THE VOICE OF TRANSPORTATION

Equipment Management Technical Services Program



Warning Lights For Maintenance Vehicles
DOT-LED® WARNING SYSTEMS
August 16, 2011

WHELEN®

ENGINEERING COMPANY INC

Manufactured In America



Chester, CT



Charlestown, NH

“Whelen is the ONLY US manufacturer of emergency warning equipment to still manufacture its products entirely in the United States. The use of robotics and a motivated workforce allow it to compete with off-shore products”.

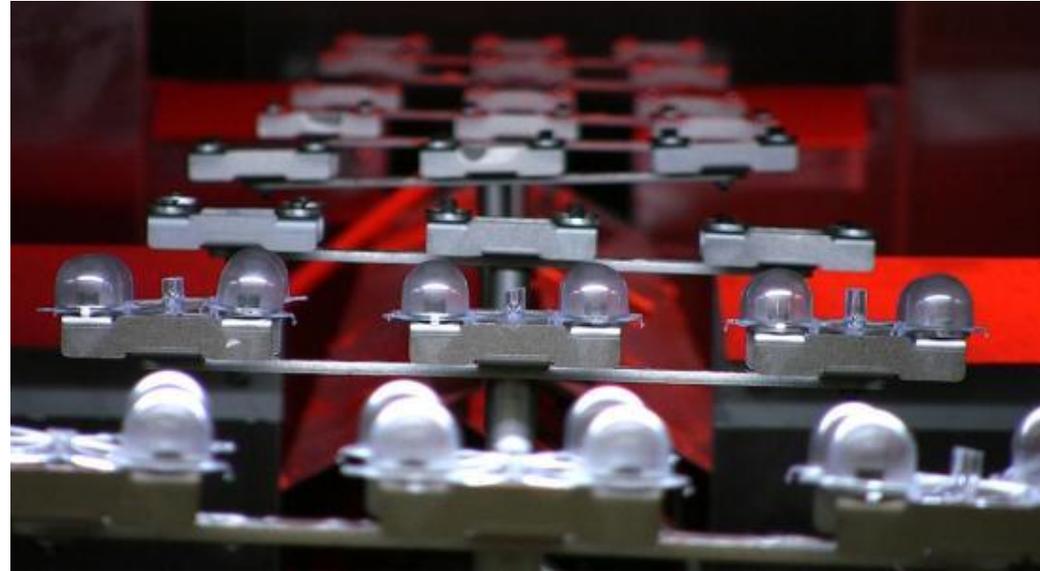
Whelen Production Updates

- Lens HARD COAT
 - Polycarbonate is impact resistant.
- HOWEVER
- Scratches easily!
 - Yellows and oxidizes in rays of sun!
 - Susceptible to chemicals.

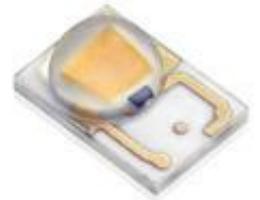
Whelen is **NOW** applying an acrylic Hard Coat to its lenses.

- Whelen lenses are now protected by an acrylic hard coating which makes them impervious to scratches, chemical and UV damage.

WHELEN HARD COAT ASSEMBLY LINE



Whelen LED Updates



- Latest Generation Super-LED's
 - PC Amber LED
 - Provides higher lumen output per package and superior color stability to other Amber diodes offered in the industry.
 - Most lumens per package in amber color.
 - Most up-to-date current LED's offered on the market.
 - Whelen designs and manufactures its tools and can make optic changes at any given moment. This provides the industry with the latest technology offered.

Whelen DOT System Updates

- Heated Lenses
- Deutsch® Buss Connectors
- Updated DOT Flasher & Junction Box
- Low Power Sensor
- Integrated Light Housing Air Foils
- White Light
 - Sander Lights
 - WingPlow Illumination Light

Heated Lens

- Electrical wires incorporated on the inside lens that heat up when current flows through them.
- Lens surface temperature is $> 32^{\circ}\text{F}$
- Low amp draw (milliamps)
- Controlled by external thermostat
 - Activates below 35°F

Heated Lens



Deutsch DT Bussed Series Connectors

- Deutsch DT bussing device eliminates any various harness splices within the system.
 - **Submersion**
 - **Fluid Resistance**
 - **Vibration**
 - **Durability**

Deutsch DT Bussed Series Connectors



Updated DOT Flasher-Junction Box Solar – Hi/Low

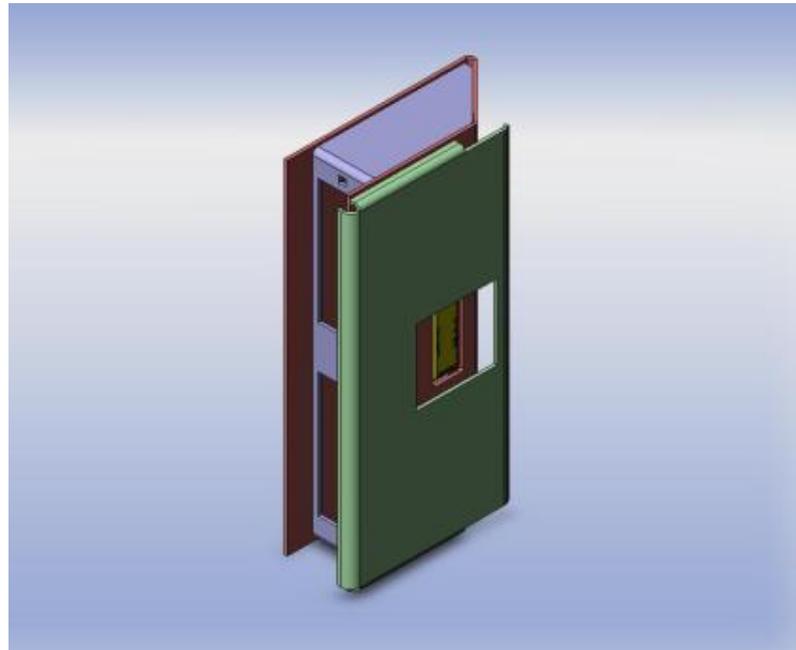
- Enclosed Powder coated aluminum box
 - Added cable entry holes
 - Increased service room
- Added DOT Light Sensor
 - Sensor To be Mounted on Dash
 - Decreases operator involvement

Updated DOT Flasher-Junction Box Solar – Hi/Low

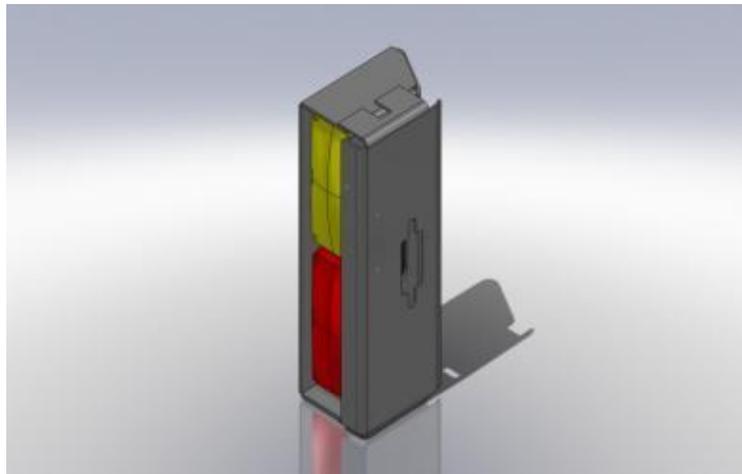
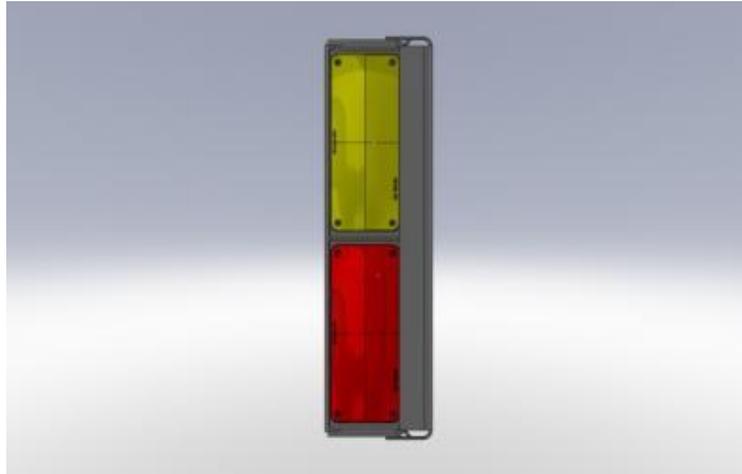


Integrated Air Foils

- Increased Air Movement
 - Air movement concentrated towards lightheads.
 - Helps fight against snow build-up on lightheads.



Integrated Air Foils



White Illumination Lighting

- Sander and WingPlow Light
 - PAR36 LED – 6 Diode Spot/Flood - Rubber Housing
 - PAR36 LED – 12 Diode Flood – Sand Casting
 - PAR46 LED – 18 Diode Spot or Flood

PAR36 LED – 6 Diode - Rubber Housing

- Drop-in replacement for outdate Halogen lamps.
- Water resistant
- Non-Polarity sensitive
- 12/24 VDC
- Combination Flood/Spot optics.
- Five-year HDP Warranty
- Rubber Housing with Lock-In Bracket



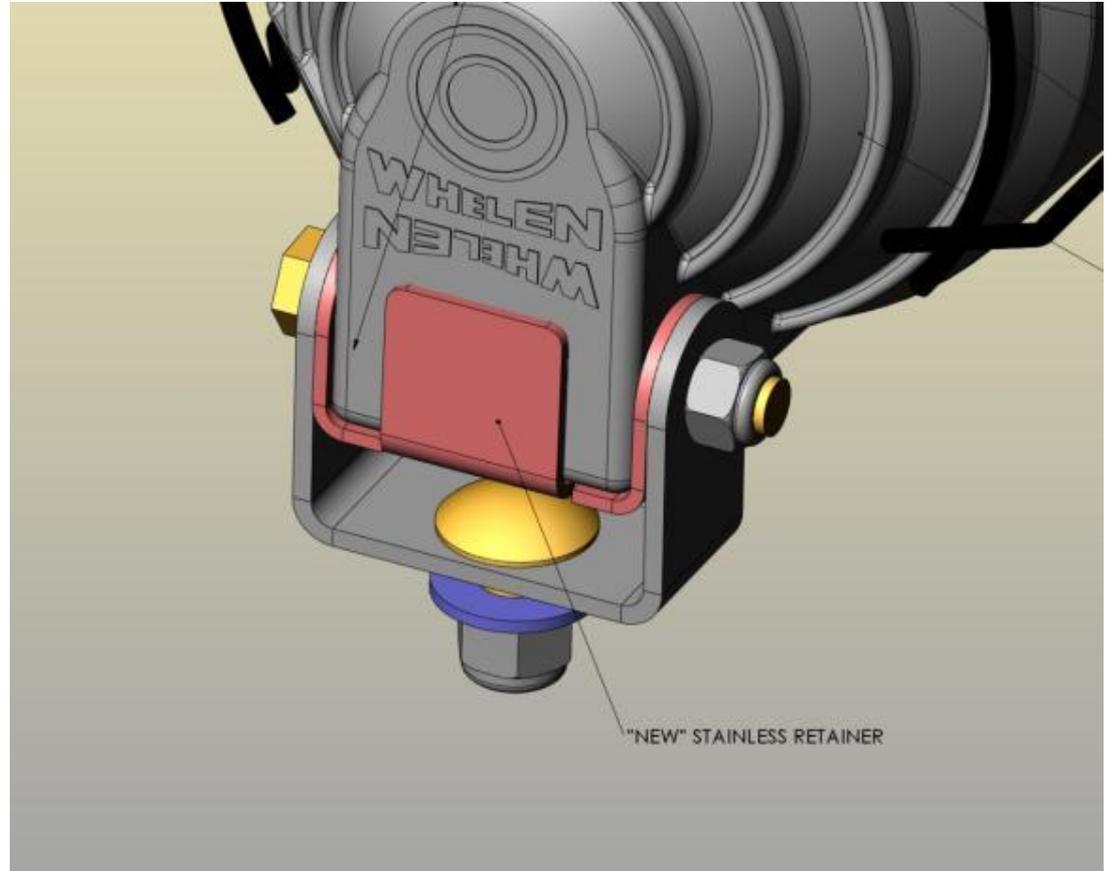
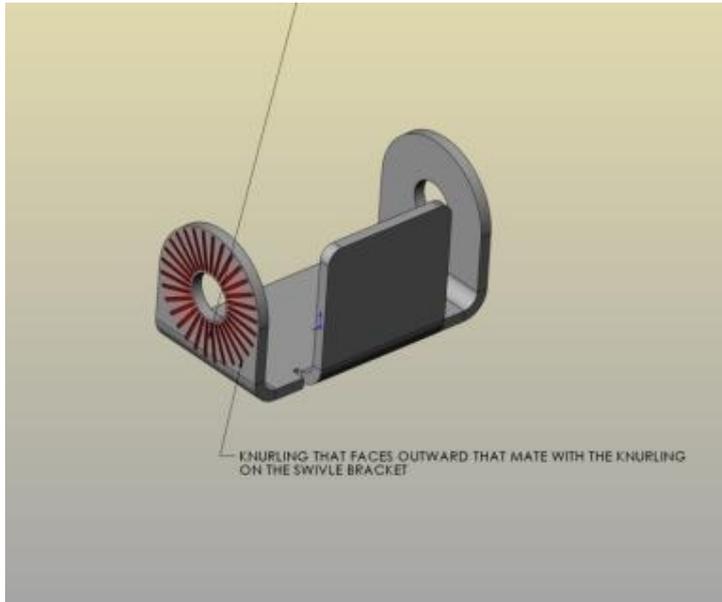
White Illumination Lighting

PAR36 LED – 6 Diode - Rubber Housing



White Illumination Lighting

PAR36 LED – 6 Diode - Rubber Housing



PAR36 LED – 12 Diode – Sand Casting

Updated

- Rugged anodized sand casted housing assembly
 - Heat sink allows maximum 12 diode power!
- Water resistant
- Stud/swivel mount includes stainless steel bracket and hardware
- Flood optics
- 5 Year HDP Warranty

Updated

PAR36 LED – 12 Diode – Sand Casting



PAR46 LED – 12 Diode Spot or Flood - Rubber Housing

- Provide more Lumens Per Watt (LPW than traditional light sources.)
- Reverse polarity protected
- Hard coated polycarbonate lens provides increased durability and longevity.
- Heavy duty back powder coated die cast aluminum heat sink.
- 5 Year HDP Warranty

PAR46 LED – 12 Diode Spot or Flood - Rubber Housing



Warning Light Selection Options

- Warning Flash Sequence
- Warning Flash Patterns
- Warning Color

DOT-Flasher

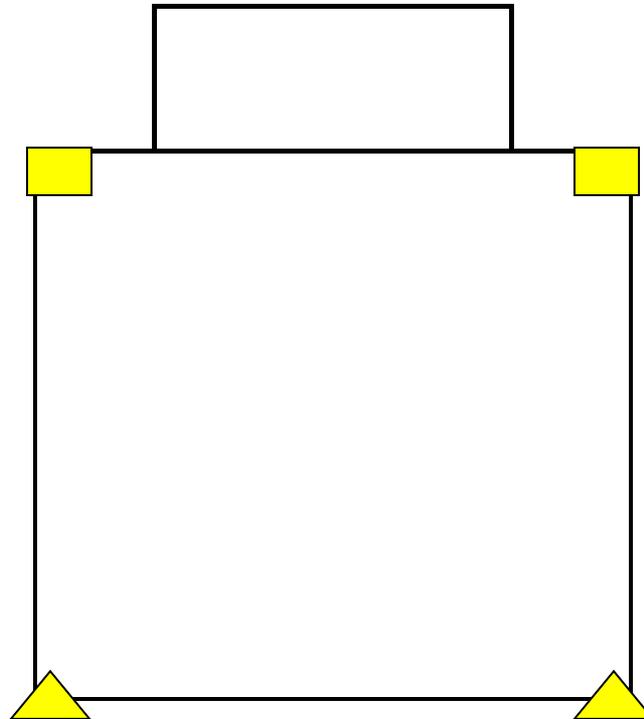
Flash Sequence Options

- Uniform Flash Sequence / Flasher Pattern
 - All On / Off
 - Alternating Top / Bottom
 - Alternating Passenger / Driver
 - Criss / Cross “X-Pattern”

DOT-Flasher

Flash Sequence Options

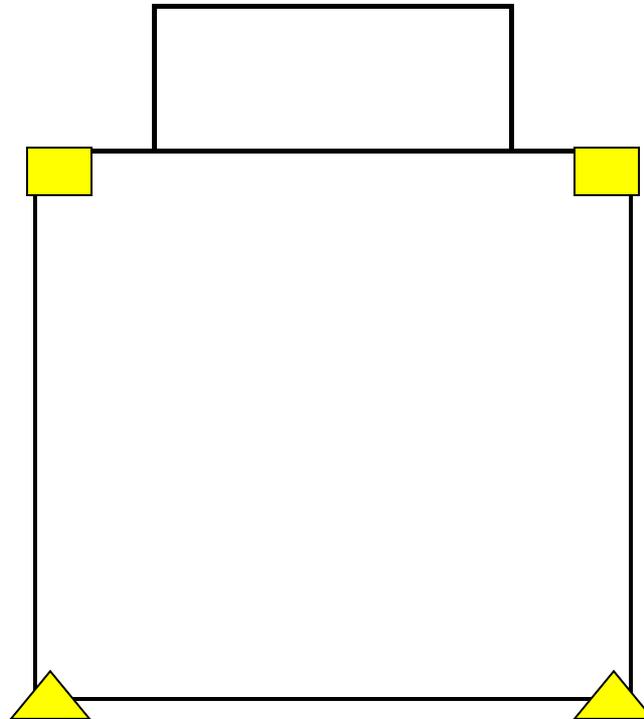
- Uniform Flash Sequence
 - All On / Off



DOT-Flasher

Flash Sequence Options

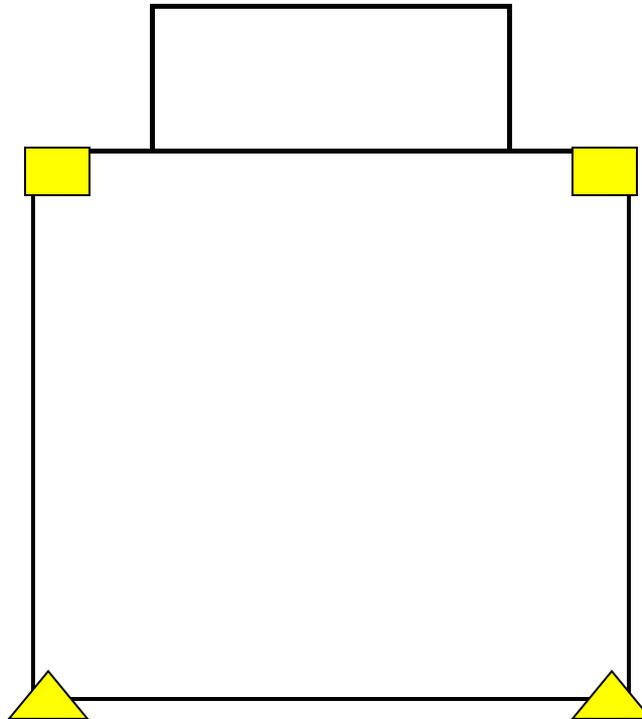
- Uniform Flash Sequence
 - Alternate Front/Top – Rear/Corner Post



DOT-Flasher

Flash Sequence Options

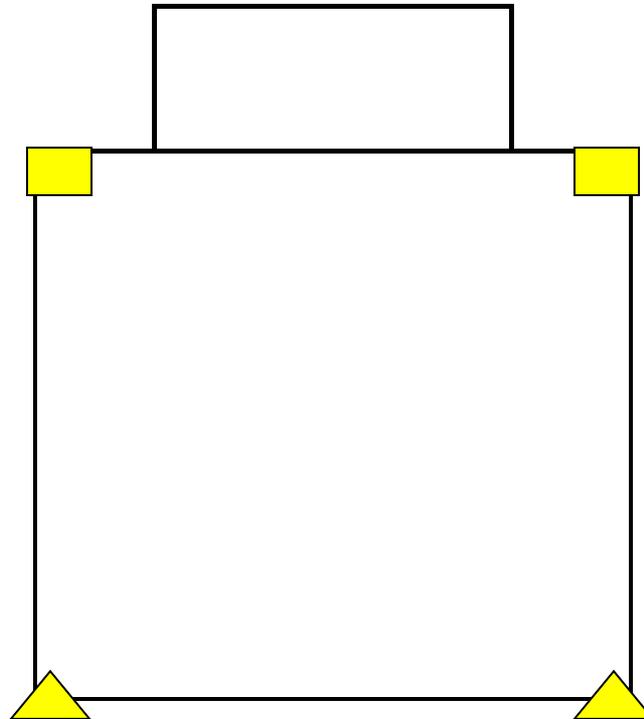
- Uniform Flash Sequence
 - Alternate Front/Rear Passenger – Front/Rear Driver



DOT-Flasher

Flash Sequence Options

- Uniform Flash Sequence
 - X Flash Sequence



Flash Pattern

- DOT-LED ® Flasher -Flash Patterns
 - SignalAlert ® 75 FPM
 - CometFlash ® 75 FPM
 - SSNF Flash Pattern
 - CometFlash ® 75 FPM
 - Single Flash 60 FPM
 - Single Flash 60 FPM

http://www.whelen.com/AUTOMOTIVE/media/flash_patterns/index.htm#

Warning Light Color Options

- Amber, Red, Blue, White, and Green
 - Spilt 400
 - Split Micro Extended Freedom
 - Spilt Micro 400

Warning Light Color Options



Split lighthouse color options are available in many of our warning light options.

THANK YOU