

WHELEN[®]
TRUSTED TO PERFORM™



DOT-LED[®]
Lighting Systems

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About

Whelen Engineering has been designing and manufacturing professional lighting system solutions for over forty years. Engineered to meet all demands of the heavy-duty truck market, Whelen is proud to provide lighting solutions that are designed for all operating conditions.

Providing safe, reliable systems to both operators and the motoring public is at the forefront of Whelen's mission. As an industry leader, Whelen prides itself in providing flexible system programmability and introducing innovative, high quality products for further safety enhancement.

We appreciate your loyalty as we continue to drive innovation.



WARNING
Warning signs can
change with use.
Check regularly for
damage and replace
as needed.
Safety is your responsibility.
Thank you for your
attention.

History of Whelen Engineering Company, Inc.



1952
George W. Whelen invents the first rotating aircraft "anti-collision" beacon in his garage in Deep River, Connecticut.

1984
Whelen moves from Deep River, Connecticut to its current Corporate Headquarters in Chester, Connecticut.

1987
A second manufacturing plant is added in Charlestown, New Hampshire.

1991
The New Hampshire plant expands to house plastic injection molding equipment.

The tool and die machine shop begins as a servicing shop for parts before they are run in molding. Today, 90% of all molding tools are made in-house from raw steel.



1963
Whelen becomes the first in the industry to utilize strobe light technology.

1975
Whelen releases its first fully enclosed lightbar.

1988
Transformer winding is introduced, using automated winding machines in order to increase part supply.

2000
Whelen introduces the first all LED lightbar.

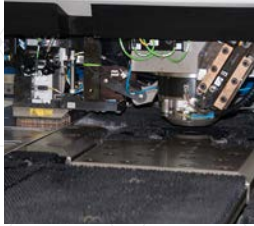
2003
Whelen implements surface mount technology.





2005

Whelen becomes the entitlement sponsor of the NASCAR® Whelen Modified Tour and the NASCAR Whelen Southern Modified Tour. Whelen also begins sponsorship as the Official Warning Lights of NASCAR.



2007

Sheet metal fabrication is implemented.

Whelen becomes the entitlement sponsor of the NASCAR Whelen All American Series.



2011

Hard coating technology develops.

The production machine shop opens, housing 26 machines, 5 axis mills, lathes with live tooling, and screw machines. Parts made from raw housing or machined casting go into many finished products.



2013

Whelen becomes the entitlement sponsor of the NASCAR Whelen Euro Series.

2015

George W Whelen V becomes the President and CEO of Whelen Engineering

2004

Whelen develops an LED floodlight.



2008

Powder coating technology is implemented.



2012

Vacuum metalizing technology is developed.

Silicone molding is implemented.



2014

Whelen opens the only environmentally friendly printed circuit board manufacturing facility in North America with zero hazardous emissions.



PRODUCTION

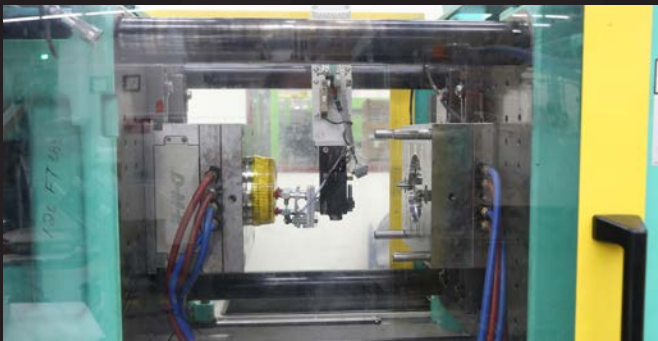
All Whelen products are designed, manufactured, and assembled in our Connecticut and New Hampshire facilities.



Printed circuit boards are manufactured in-house. Whelen's PCB shop is the the only environmentally friendly printed circuit board manufacturing facility in North America with zero hazardous emissions.



Surface mount technology deposits electronic components onto PCB using robotic nozzles. All testing and programming of PCB is done in a continuous automated line.



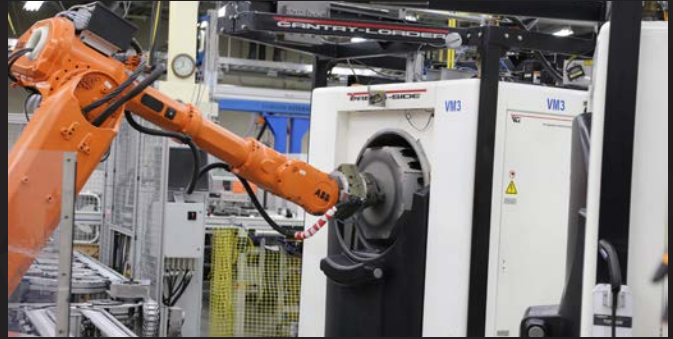
Plastic injection molding equipment manufactures all plastic parts, from optical grade polycarbonate to thermally conductive composites.



Silicone molding is a liquid injected molding process. Silicone allows for use of parts that need to be flexible and water resistant. This material is often utilized to make a watertight seal in an assembly.



Hard coating technology utilizes an automated line where UV, abrasion, and chemical resistant coating is applied to all plastic lensing.



Vacuum metalizing technology coats all reflectors with a thin layer of pure vaporized aluminum within a sealed chamber. Bringing this process in-house yields a 10% increase in light output due to improved surface quality and purity.



Sheet metal fabrication utilizes lasers to create brackets and a wide variety of metal components used in almost every Whelen product. A five axis laser is used to cut complex metal parts that do not come in a flat sheet.



Powder coating technology uses an automated line which washes, dries, applies powder, and oven bakes.



DOT System Sub-Assembly



DOT System Final Assembly

NASCAR®

Whelen has supported NASCAR and its grass roots racing series for over 25 years. Whelen sponsors the Whelen All-American Series, the Whelen Euro Series, the Whelen Modified Tour, and the Whelen Southern Modified Tour. Additionally, Whelen is proud to provide the Official Warning Lights of NASCAR.



OFFICIAL WARNING LIGHTS OF NASCAR





WORLD CENTER OF RACING

DOT SYSTEM FEATURES

Optics

- Certified by an AMECA-accredited testing laboratory to meet or exceed SAE warning lighting requirements in the appropriate specified safety colors
- Lighting profile easily defines the width and height of a highway vehicle
- Wide-angle Super-LED® lighthead housings ensure visibility when dump body is raised or lowered, including forward dump bodies
- All warning lighthead colors are Amber. For other colors, contact factory
- Multiple flash patterns and sequence options provide improved reference for motorists in determining the distance to and location of maintenance vehicles

Design

- Pure copper stranded conductors used in all TPE cables are tin coated, providing superior longevity
- A 12" protective section of flex-tubing and coupling to the housing prevents cable chafing
- All rear lighthead housings are furnished with Deutsch® waterproof connectors
- Each system includes a complete installation kit, including cable harnesses
- 400 and 700 Series lighthead housings are 7 gauge welded stainless steel
- 500 Series lighthead housings are 11 gauge welded stainless steel
- Optional welded aluminum housings are also available



DOT System Components

Front System Components

Front system components are offered in four Super-LED® models with combined 360° warning visibility. Includes 60' of heavy-duty TPE cable.

Micro Freedom™



3-3/4" (95mm) H x 9-5/16" (236mm) D x 12-5/16" (312mm) L

Micro 400



3-3/4" (95mm) H x 10-3/4" (272mm) D x 10" (254mm) L

Stainless Steel Micro 400



3-5/8" (92mm) H x 8-1/4" (209mm) D x 8-1/4" (209mm) L

Remote L31 Beacon

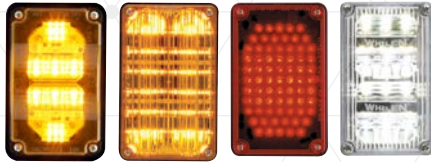


4-1/2" (102mm) H x 7-3/16" (182mm) Dia.

Rear Lighthoods

Rear lighthoods are offered in three sizes. Super-LED lighthoods have specially designed lenses for wide light output. All lighthoods are supplied with Deutsch® waterproof connectors.

400 Series



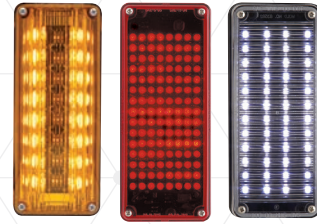
4-15/16" (124mm) H x 3-3/16" (77mm) W

500 Series



5" (127mm) H x 1-5/8" (41mm) W

700 Series



7-1/4" (184mm) H x 3-1/16" (78mm) W

Rear Housings

Rear mounted lighthoods include 30' heavy-duty, oil resistant TPE jacketed cable with strain relief flex-tubing and couplings that provide added safeguard against the elements.

400 Series



Height: Single: 5-7/8" (149mm)
Double: 11-3/8" (290mm)
Triple: 17" (430mm)
Width: 3-1/2" (88mm)
Depth: 4-3/4" (120mm)

500 Series



Height: Single: 7" (178mm)
Double: 13-3/4" (348mm)
Triple: 20-3/8" (518mm)
Width: 2-1/2" (65mm)
Depth: 5" (127mm)

700 Series



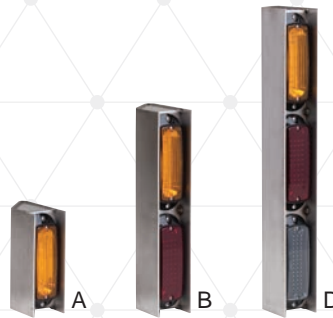
Height: Single: 8-3/8" (213mm)
Double: 16-1/4" (412mm)
Triple: 24" (608mm)
Width: 3-1/2" (88mm)
Depth: 5" (127mm)

*Five year warranty.

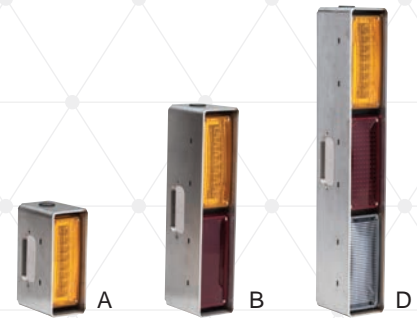
Light Systems



400 SERIES



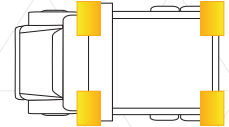
500 SERIES



700 SERIES

DOT3401, DOT3501 & DOT3701 4 Light System

Two Micro Freedoms with extended corner modules and two rear lighthouse options



SYSTEM 401

with 400 Series Lighthoods

| | |
|----------|---------------------------------------|
| DOT3401A | Warning |
| DOT3401B | Warning and brake/tail/turn |
| DOT3401D | Warning, brake/tail/turn, and back-up |

SYSTEM 501

with 500 Series Lighthoods

| | |
|----------|---------------------------------------|
| DOT3501A | Warning |
| DOT3501B | Warning and brake/tail/turn |
| DOT3501D | Warning, brake/tail/turn, and back-up |

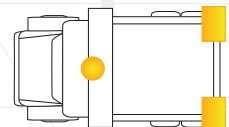
SYSTEM 701

with 700 Series Lighthoods

| | |
|----------|---------------------------------------|
| DOT3701A | Warning |
| DOT3701B | Warning and brake/tail/turn |
| DOT3701D | Warning, brake/tail/turn, and back-up |

DOT3402, DOT3502 & DOT3702 3 Light System

One L31 remote beacon and two rear lighthouse options



SYSTEM 402

with 400 Series Lighthoods

| | |
|----------|---------------------------------------|
| DOT3402A | Warning |
| DOT3402B | Warning and brake/tail/turn |
| DOT3402D | Warning, brake/tail/turn, and back-up |

SYSTEM 502

with 500 Series Lighthoods

| | |
|----------|---------------------------------------|
| DOT3502A | Warning |
| DOT3502B | Warning and brake/tail/turn |
| DOT3502D | Warning, brake/tail/turn, and back-up |

SYSTEM 702

with 700 Series Lighthoods

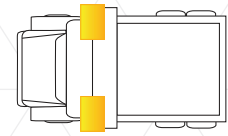
| | |
|----------|---------------------------------------|
| DOT3702A | Warning |
| DOT3702B | Warning and brake/tail/turn |
| DOT3702D | Warning, brake/tail/turn, and back-up |

DOT3103 2 Light System

Two Micro Freedoms with extended corner modules

SYSTEM 103

DOT3103 Two front Amber warning lights



DOT3404, DOT3504 & DOT3704 2 Light System

Two rear lighthouse options

SYSTEM 404

with 400 Series Lighthoods

| | |
|----------|---------------------------------------|
| DOT3404A | Warning |
| DOT3404B | Warning and brake/tail/turn |
| DOT3404D | Warning, brake/tail/turn, and back-up |

SYSTEM 504

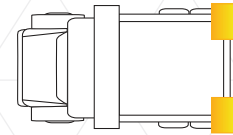
with 500 Series Lighthoods

| | |
|----------|---------------------------------------|
| DOT3504A | Warning |
| DOT3504B | Warning and brake/tail/turn |
| DOT3504D | Warning, brake/tail/turn, and back-up |

SYSTEM 704

with 700 Series Lighthoods

| | |
|----------|---------------------------------------|
| DOT3704A | Warning |
| DOT3704B | Warning and brake/tail/turn |
| DOT3704D | Warning, brake/tail/turn, and back-up |



DOT3405, DOT3505 & DOT3705 4 Light System

Two Micro 400s and two rear lighthouse options

SYSTEM 405

with 400 Series Lighthoods

| | |
|----------|---------------------------------------|
| DOT3405A | Warning |
| DOT3405B | Warning and brake/tail/turn |
| DOT3405D | Warning, brake/tail/turn, and back-up |

SYSTEM 505

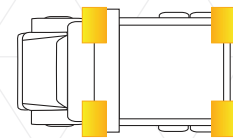
with 500 Series Lighthoods

| | |
|----------|---------------------------------------|
| DOT3505A | Warning |
| DOT3505B | Warning and brake/tail/turn |
| DOT3505D | Warning, brake/tail/turn, and back-up |

SYSTEM 705

with 700 Series Lighthoods

| | |
|----------|---------------------------------------|
| DOT3705A | Warning |
| DOT3705B | Warning and brake/tail/turn |
| DOT3705D | Warning, brake/tail/turn, and back-up |



DOT3406, DOT3506 & DOT3706 4 Light System

Two L31 remote beacons and two rear lighthouse options

SYSTEM 406

with 400 Series Lighthoods

| | |
|----------|---------------------------------------|
| DOT3406A | Warning |
| DOT3406B | Warning and brake/tail/turn |
| DOT3406D | Warning, brake/tail/turn, and back-up |

SYSTEM 506

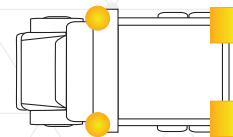
with 500 Series Lighthoods

| | |
|----------|---------------------------------------|
| DOT3506A | Warning |
| DOT3506B | Warning and brake/tail/turn |
| DOT3506D | Warning, brake/tail/turn, and back-up |

SYSTEM 706

with 700 Series Lighthoods

| | |
|----------|---------------------------------------|
| DOT3706A | Warning |
| DOT3706B | Warning and brake/tail/turn |
| DOT3706D | Warning, brake/tail/turn, and back-up |

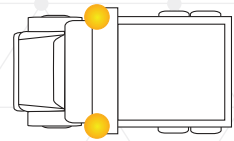


*Five year warranty.

DOT3107
2 Light System
 Two L31 Beacons

SYSTEM 107

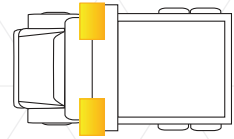
DOT3107 Two front Amber warning lights



DOT3108
2 Light System
 Two Micro 400s

SYSTEM 107

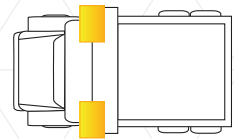
DOT3108 Two front Amber warning lights



DOT3109
2 Light System
 Two stainless steel Micro 400s

SYSTEM 109

DOT3109 Two front Amber warning lights



DOT3410, DOT3510 & DOT3710
4 Light System
 Two stainless steel Micro 400s and
 two rear lighthouse options

SYSTEM 410
 with 400 Series Lighthoods

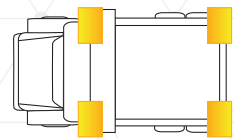
| | |
|----------|---------------------------------------|
| DOT3410A | Warning |
| DOT3410B | Warning and brake/tail/turn |
| DOT3410D | Warning, brake/tail/turn, and back-up |

SYSTEM 510
 with 500 Series Lighthoods

| | |
|----------|---------------------------------------|
| DOT3510A | Warning |
| DOT3510B | Warning and brake/tail/turn |
| DOT3510D | Warning, brake/tail/turn, and back-up |

SYSTEM 710
 with 700 Series Lighthoods

| | |
|----------|---------------------------------------|
| DOT3710A | Warning |
| DOT3710B | Warning and brake/tail/turn |
| DOT3710D | Warning, brake/tail/turn, and back-up |





SmartLogic™ Programmable Flasher

Engineered to maintain situational awareness of the operator, the SmartLogic Programmable Flasher houses numerous innovative technologies that deliver highly effective visual warning.

- Housed in a junction box for ease of mounting, along with wiring and connection protection
- Software is configurable via USB port
- All 8 outputs are internally protected and fused
 - Each solid-state output is rated for 5 amps
- 8 inputs
 - 5 activating inputs
 - 3 non-activating inputs for low power, photocell, and brake/tail/turn cutoff
- Default flash pattern
- LED onboard diagnostic indicators signify active outputs and blown fuses
- Day and night mode truck setups

SnowAway™ Heated Lens System

Introducing industry-first technology for preventing snow build up on rear corner post lights in most conditions.

- Tempered glass heats uniformly and keeps lenses at 45° F in most conditions
- Switches on automatically when the temperature drops below 40° F, providing zero operator involvement
- LED indicator light in the cab automatically notifies operator that the system is on or off
- On/off switch located in the cab allows operator to manually control the system if needed
- Tempered glass uses between 1-4 amps (colder temperature increases amp draw)
- Housing and lens design accommodates three lightheads
- 14 gauge wire included

| | |
|--------|----------------------------------|
| H400SD | 400 Series Heated Lens System |
| H400VD | 400 V-Series™ Heated Lens System |

NOTE: DOT lighting system sold separately. Option includes heated lens system only. Works with following system models: DOT3401D, DOT3402D, DOT3404D, DOT3405D, DOT3406D and DOT3410D





400 Series Super-LED® Back-Up Light

The 400 Series Super-LED Back-Up Light provides high intensity work zone illumination to increase operator and workforce safety.

- Downward ground illumination optics
- Available in horizontal or vertical mount
- Mounts into 400 Series housings
- Hard-coated lenses minimize environmental damage from sand, sun, salt, and road chemicals

SUB40BUH

Substitute (2) 400 Horiz Backups for Vert



**Standard Option*

400 V-Series™

Dual purpose optics provide maximum rear corner post warning for all dump body positions.

- SAE Class 1 Certified
- Single color warning utilizing linear technology placed in both directions
- Hard-coated lenses minimize environmental damage from sand, sun, salt, and road chemicals
- Vibration, moisture, and corrosion resistant
- Mounts vertically into DOT stainless steel housing
- Works in conjunction with current DOT flasher models
- Conformal coated PC boards
- 12" pigtail with Deutsch® waterproof connector and strain relief

SUB4V400

Substitute (2) Amber 400VV for 400
Linear Warning





DOT Options



Switch Control Panels

- Compact rocker style single pole/single throw switches
- Black epoxy-finished steel housing
- Individual spade-type fuses conveniently located on rear mounted fuse strip
- Active LED indicators light up to indicate function in use
- Ignition controlled backlighted legend windows for easy visibility in any light
- Backlight circuit can be connected to vehicle dimmer switch to control backlight intensity
- 72 commonly used press-on switch function label legend tabs
- 25 amps peak

| | |
|-------|---|
| PCC4W | Four 25 amp switches. 2-1/4" (57mm) H x 3" (76mm) W x 4" (102mm) D. |
| PCC6W | Six 25 amp switches. 2-1/4" (57mm) H x 6" (152mm) W x 3-9/16" (91mm) D. |



L31 Branch Guard

Cast aluminum brush guard for one beacon.

L360BGB

Aluminum Housings

Replace stainless steel housings with aluminum housings on 400, 500, and 700 Series lighthoods or the Micro 400. Offered in pairs.

| | |
|----------|----------------------------|
| 400AALUM | 400A Aluminum Housing |
| 400BALUM | 400B Aluminum Housing |
| 400DALUM | 400D Aluminum Housing |
| 700AALUM | 700A Aluminum Housing |
| 700BALUM | 700B Aluminum Housing |
| 700DALUM | 700D Aluminum Housing |
| MICRALUM | Micro 400 Aluminum Housing |



TIR3™ Super-LED® Lighthouse

Add visibility with a TIR3 lighthouse mounted to the side of a 400 or 700 Series housing, providing 90° of warning light coverage. Offered in pairs.

| | |
|----------|------------|
| ADD4TIR3 | 400 Series |
| ADD7TIR3 | 700 Series |



Pioneer Micro™

- Die-cast aluminum Black powder coated housing
- Powder coated stainless steel bail bracket with 3/8" stud carriage bolt mount
- Optic lens changes easily via four screws in picture frame fixture
- Includes three additional lenses:
 - Flood lens with 90° x 20° wide optics
 - Flood lens with 40° x 20° optics
 - Flood lens with 40° x 8° horizontal optics
- 12 VDC

| | |
|-------|----------------------|
| MPBB | Pioneer Micro |
| MPBBA | Pioneer Micro, Amber |



Wing Plow™ Lighting Systems

- Two styles of Amber lightheads provide complete coverage whether snowplow wing is in the operation position or in the stowed travel position
- Pairs can be synchronized for alternating or simultaneous flashing
- Fully encapsulated for vibration, moisture, and corrosion resistance

| | |
|---------|---------------------------------|
| WLOW3AA | TIR3 light modules |
| WLOW1A | Wing Plow Operating Amber TIR3 |
| WLOWZ1A | Wing Plow Operating Amber LINZ6 |
| WLOW2A | Wing Plow Stowed Amber TIR3 |
| WLOWZ2A | Wing Plow Stowed Amber LINZ6 |
| WLOWZ3A | LINZ6 light modules |



DOT Photocell

Photocell option for Hi/Low power, includes Black flange

DOTPHOTO



PAR-36 Work Light

- Combination spot/floodlight with rubber housing and stainless steel swivel bracket and hardware
- Polycarbonate outer lens resists scratches and UV damage
- Reverse polarity protected

P365LCHG PAR-36



Cable Lengths

Substitute 45' or 30' cables for standard 60' cables. Offered in single or pairs.

| | |
|----------|-------------------------------|
| SUBF4C45 | Pair, 45' |
| SUBF4C30 | Pair, 30' |
| SUBF2C45 | Single, 45' |
| SUBF2C30 | Single, 30' |
| SUBR2C45 | Substitute 45' 2/C Rear Cable |
| SUBR5C45 | Substitute 45' 5/C Rear Cable |

*Five year warranty.