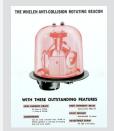
## History of Whelen Engineering Company, Inc.



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



1956 The Rota-Beam™, a rotating magnetic mounted automotive beacon is developed for use by Police, Public Works and Fire departments.

## 1952-1978

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

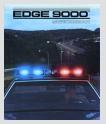
**1968** Whelen moves from the garage workshop on Kirtland Street to a facility on Winter Avenue in Deep River.



**1975** Whelen releases it's first fully enclosed lightbar, the 6000 Series.



**1978** The 8000 Series, a strobe enclosed crossbar, is released.



1983 Whelen introduces the low profile Edge 9000®, the first fully enclosed lightbar with an aluminum I-Beam construction.

1983-1998

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.

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

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.



1998 FastTrax™, a lightbar designed to fit the contours of the Pontiac Grand Prix pace car, is released for the 50th anniversary of NASCAR.

**2000** Whelen introduces the Liberty<sup>™</sup>, the first all LED lightbar.



2003 Whelen implements surface mount technology, in which electric components are deposited on PCB utilizing robotic nozzles. All testing and programming of PCB is done in a continuous automated line.

**2004** Whelen develops the Pioneer™ all LED floodlight for Fire Truck and Ambulance applications.



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, utilizing lasers to create brackets and a wide variety of metal components used in almost every Whelen product. A 5 axis laser is used to cut complex metal parts that do not come in a flat sheet.

equipment, which

manufactures all plastic

parts, from optical grade

conductive composites.

polycarbonate to thermally

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

2008 Powder coating technology is implemented, which uses an automated line including washing, drying, applying powder, and oven baking.

2000-2008

2011 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.

Hard coating technology develops, which utilizes an automated line where UV, abrasion, and chemical resistant coating is applied to all plastic lensing. 2012 Vacuum metalizing technology develops. Within a sealed chamber, all reflectors are coated with a thin layer of pure vaporized aluminum. Bringing this process in-house yields a 10% increase in light output due to improved surface quality and purity.

2012 Silicone molding is implemented. Still 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.

**2013** The next generation Rota-Beam is released.

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



2014 Whelen opens the only environmentally friendly printed circuit board manufacturing facility in North America with zero hazardous emissions

Whelen enters the Off-Road market with the Continuum™ Super-LED lightbar.



2015 Action Express Racing fields the No. 31 - Whelen Corvette Daytona Prototype in the 2015 IMSA TUDOR United SportsCar Championship season.





2011-2015