

Vision Illumination



- LED ring lights.
- BrightLight LED coaxial illuminators.
- Fiber optic illuminators.
- Power supplies.

LED-Based

Illumination



Benefits of Navitar LED-Based Illumination

All of our LED systems provide a number of benefits over traditional fiber based illumination systems:

- Longer life.
- Minimum power loss.
- Narrow wavelength band (red), constant color temperature (white).
- Small packaging with optimal heat management.
- No fan vibration.
- Lower cost.

Illumination has proven to be one of the most important components when designing a successful imaging system. Navitar thoroughly understands that the correct lighting can only enhance the performance of our industry leading vision systems. This is why we are so excited to introduce custom designed and integrated LED based illumination components for all of our vision systems. The addition of our LED based products truly allows us to provide our customers with complete optical solutions for all their imaging needs.

Two LED based products are available from Navitar: BrightLight coaxial illuminators and Ring Light illuminators. Designed to match the optical performance of our vision systems, each illumination system was created to work with a specific system, such as Navitar's Zoom 6000, 12X Zoom or Precise Eye system. Each lighting component incorporates the correct number of individual LEDs, placed in the optimal optical position, to provide powerful, even illumination across a given field of view.

BrightLight LED Coaxial Illuminators

NI/LabView™ Compatible

RS-232 or USB
Computer
Controlled

High Brightness, Long Life, Optimal Image Contrast

- Energy efficient, long-life design decreases production line down time.
- Compact and robust design eliminates the vibration normally associated with fiber optic Halogen light sources.
- RS-232 and USB computer controlled.
- National Instruments/LabView™ VI or Windows interface.
- External knob regulates the intensity in fine increments.
- Black anodized enclosure for stand alone use.

Innovative Illumination

Designed and manufactured by Navitar, the BrightLight coaxial illuminator is used to view highly reflective objects which require an even distribution of light without hot spots. The thermal design insures maximum life and a consistent output. The BrightLight LED co-axial illuminator is for use with Navitar's Zoom 6000, 12X and Precise Eye systems. Available in either red or white and with a life span measured in years, these illuminators are the perfect source for powerful, uninterrupted, worry-free operation. Check our website for new colors.

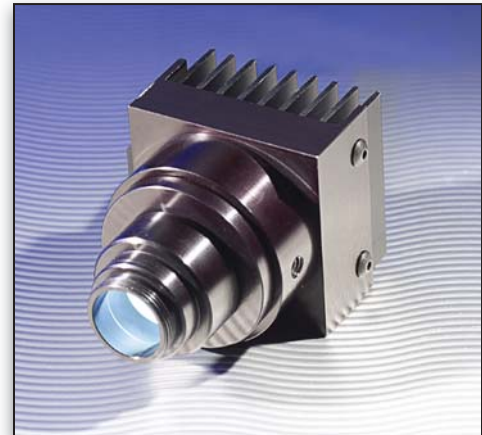
Control Options

Control of the BrightLight could not be easier. Navitar has developed two user-friendly Pulse Width Modulation (PWM) controllers, an analog (manual control) and a digital (manual and computer control).

Manual Analog Control: A simple control knob regulates the pulse width (intensity) in continuous mode. The driver is supplied in a black anodized enclosure. Simply plug the power supply and BrightLight into the driver box, turn on the driver and adjust the dimmer.

Digital Control: Designed for maximum flexibility, the digital BrightLight controller is available in either board level or enclosed similar to the analog model. In addition to manual control, the digital model also offers computer control via RS-232 or USB. Software is available on our website at www.navitar.com/zoom/led_software.htm.

Required accessories include a power supply, either domestic (120 VAC, 60Hz) or international (90-264 VAC, 47-63Hz), and either a USB or RS-232 communication cable.



System Requirements

Operating Systems Supported for Serial RS-232:

- Windows 98, ME, NT, 2000, & XP.

Operating Systems Supported for USB:

- Windows 98, ME, 2000, and XP.

Computer Requirements:

- Windows Operating System.
- Port: 1 serial or 1 USB port (can be a hub).
- Hard Disk: 1 M bytes.
- RAM: Same as Operating System (if OS works, BrightLight will work).
- Display: Any will work.

LED Ring Light Illuminators

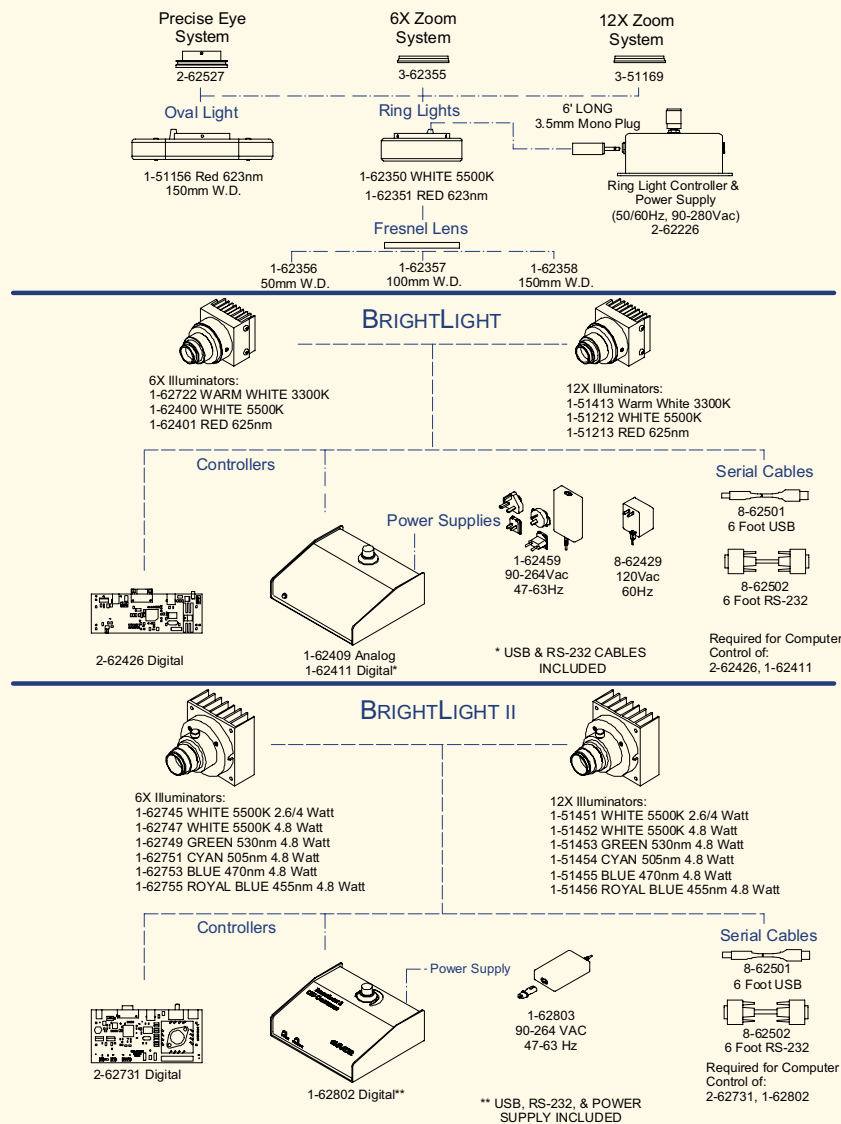


High Brightness, Long Life, and Optimal Image Contrast

Our ring lights were designed with careful consideration for the standard working distances that most of our customers use. The components are low profile and provide bright, even illumination to compliment the performance of your vision system.

Used on the Zoom 6000, 12X Zoom or Precise Eye, Navitar's Ring Lights are specifically designed to function at specific working distances. They are available in white and red with Fresnel attachments of 50 mm, 100 mm, and 150 mm working distances. The dimmer is a simple analog voltage type with a universal power supply.

LED System Diagram



Fiber Optic Lighting Accessories

Fiber Optic Illuminators

Fiber optic illuminators are the most versatile illuminators on the market today. They consist of a high-powered light source which can be used with ring lights or flexible light pipes for oblique or co-axial illumination.

Navitar offers a series of high intensity fiber optic illuminators and accessories that allow you to position your light for best possible viewing. These fiber optic illuminators consist of a Halogen illumination system with a variable light intensity control. They accept a single or dual light pipe or an attachable ring light for illuminating a wider area. These illuminators offer low operating temperature and low noise output.

Available Fiber Optic Accessories

Model	Description
1-6192	Ring light w/ 1.28" inside diameter, 0.5" input ferrule, 3 foot length
1-6192-6	Ring light w/ 1.28" inside diameter, 0.5" input ferrule, 6 foot length
1-6192-8	Ring light w/ 1.28" inside diameter, 0.5" input ferrule, 8 foot length
1-6192-10	Ring light w/ 1.28" inside diameter, 0.5" input ferrule, 10 foot length
1-6192-15	Ring light w/ 1.28" inside diameter, 0.5" input ferrule, 15 foot length
1-61214	Ring light w/ 1.28" inside diameter, 0.718" input ferrule, 3 foot length
1-61214-6	Ring light w/ 1.28" inside diameter, 0.718" input ferrule, 6 foot length
1-61214-8	Ring light w/ 1.28" inside diameter, 0.718" input ferrule, 8 foot length
1-60926	Ring light w/ 4.5" inside diameter, 0.718" input ferrule, 3 foot length
2-50017	Ring light adapter for any 12X with fine focus
1-60106	Flexible light pipe for co-axial, 0.5" input ferrule, 3 foot length
1-60106-6	Flexible light pipe for co-axial, 0.5" input ferrule, 6 foot length
1-60106-8	Flexible light pipe for co-axial, 0.5" input ferrule, 8 foot length
1-60106-10	Flexible light pipe for co-axial, 0.5" input ferrule, 10 foot length
1-60106-12	Flexible light pipe for co-axial, 0.5" input ferrule, 12 foot length
1-60106-15	Flexible light pipe for co-axial, 0.5" input ferrule, 15 foot length
1-60162	Flexible light pipe for co-axial, 0.718" input ferrule, 3 foot length
1-60162-6	Flexible light pipe for co-axial, 0.718" input ferrule, 6 foot length
1-60162-8	Flexible light pipe for co-axial, 0.718" input ferrule, 8 foot length
1-60162-12	Flexible light pipe for co-axial, 0.718" input ferrule, 12 foot length
1-6267	2" x 2" fiber optic back light, 0.718" input ferrule, 40" length
8-61313	Dual gooseneck, 0.718" input ferrule
1-60787	Coupler to convert 0.5" input ferrule to 0.718" input ferrule
EKE	Long-life replacement lamp; 200 hour life, 21V, 3250° K
EJV	Standard replacement lamp; 40 hour life, 21V, 3350° K



Navitar can manufacture fiber bundles and ring lights in any length. Please contact Navitar directly with your specific requirements.



Power Supply

Navitar offers a selection of compact, rugged, AC/DC Halogen light sources with solid state dimmers for variable light intensity and maximum lamp life. Each power supply provides consistent, even illumination when used with a variety of fiber optic accessories, including our ring lights and fiber optic bundles for co-axial lighting.

Available Fiber Optic Power Supplies

Model	Description
8-61172	120 volt fiber optic power supply, 150w EKE lamp, 0.720" fiber receptacle (CSA, UL, CE compliant)
1-60563	220 volt fiber optic power supply, 150w EKE lamp, 0.720" fiber receptacle (CSA, UL, CE compliant)
8-61892	90-265 volt DC regulated fiber optic power supply, 150w EKE lamp, 0.720" fiber receptacle (CSA, UL, CE compliant)

External Co-axial Illuminators

Navitar's Uni-Lite is unbeatable for highly reflective applications requiring a large field of view and even distribution of light without hotspots. No other system offers Navitar's "light-trap" design. It is specifically engineered to trap stray light so that only the usable light reaches the camera.

Available External Co-axial Illuminators

For Zoom 6000	Description
1-60016	1X Uni-Lite with uniform illumination over a 16 mm field
1-60026	0.5X Uni-Lite with uniform illumination over a 32 mm field
For 12X Zoom	Description
1-50223	1X Uni-Lite with uniform illumination over a 16 mm field
1-50224	0.5X Uni-Lite with uniform illumination over a 32 mm field

Uni-Lite Working Distance (in mm)

Uni-Lite External Illuminator		Lens Attachments			
		.25X*	.5X	.75X	None
For Zoom 6000	Fine Focus Type	Working Distance			
1-60016	No Fine Focus	289	125	63	35
	Fine Focus	289	125	63	35
1-60026	No Fine Focus	274	84	22	—
	Fine Focus	274	84	22	—
For 12X Zoom					
1-50223	No Fine Focus	269	91	37	31**
	Fine Focus	272	93	39	11
1-50225	No Fine Focus	256**	77**	23**	—
	Fine Focus	231	53	—	—

*Use a 1" spacer (3-60164) with Uni-Lite model 1-60016 and the .25x lens attachment.

**No spacer required.

Available Internal Co-axial Input Ports

For Zoom 6000	Description
2-60200	8 mm diameter fiber input
2-61503	10 mm diameter fiber input
2-61955	12 mm diameter fiber input
2-60263	8 mm diameter input parallel coaxial
1-60812	8 mm diameter input polarizer
For 12X Zoom	Description
2-50157	8 mm diameter fiber input
2-50751	10 mm diameter fiber input
2-50975	12 mm diameter fiber input
2-50602	8 mm diameter input parallel coaxial
1-50554	8 mm diameter input polarizer