



NAVIGATIONAL LIGHTING SYSTEMS



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Marine navigational lighting is necessary for waterway traffic safety. Unfortunately, beacons can fail and leave bridges and other hazards unmarked. Water passage then proves to be extremely dangerous and very costly for managing municipalities if beacons remain extinguished.

For this reason, K&K Systems, Inc. provides the latest in marine navigational lighting. Whether you choose from our Backup System, our Retrofit System, or our Complete System, you'll be assured that waterway navigational hazards under your care will always be lit.

The K&K Retrofit and Complete Navigational Lighting Systems provide a primary navigational beacon system, as well as, the Backup System. If the primary beacon fails, the K&K Backup System activates the LED backup beacon. Simultaneously, using K&K's CrossTalk Controller and built-in monitoring service, a text message and/or email is sent to a single technician or multiple preassigned contacts alerting them the primary beacon failed. The LED beacon will continue to work until the primary system can be restored or for a maximum of 10 days. When the beacon is replaced the backup LED light will turn off and a second alert is sent via text or email to confirm that the primary beacon is in working condition. The K&K Backup System is a stand alone system, that can be utilized with existing beacon systems.

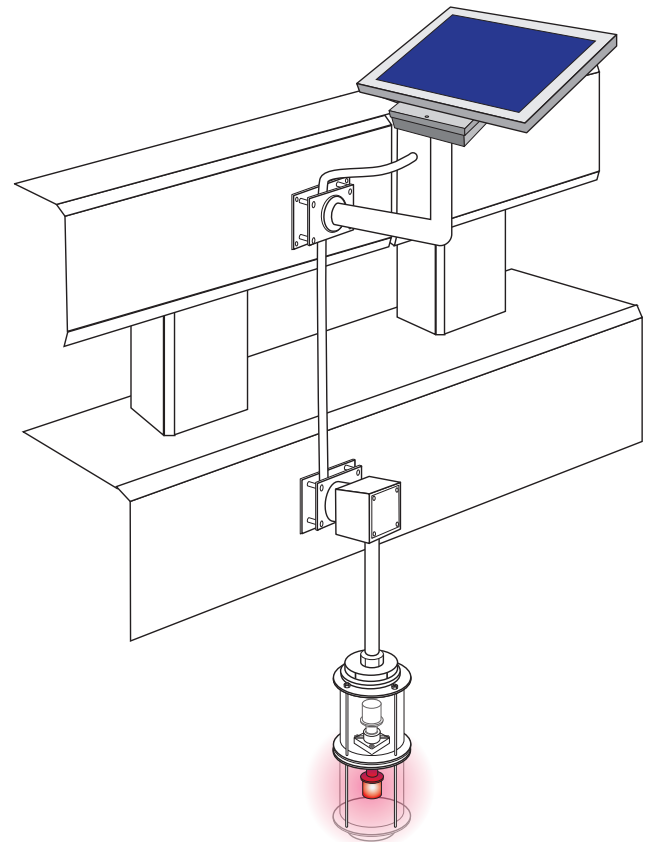
K&K Systems only use the latest in solar-powered technology so that you are assured that your standard systems will always be in service. Additionally, we offer a 10-year monitoring service with every unit to assure that you're never out of contact with your navigational systems.

NAVIGATIONAL BACKUP SOLAR SYSTEM

The K&K Navigational Backup System is a solar-powered navigational beacon system that compliments existing AC or DC powered beacon systems. The Backup System is designed to activate if the primary beacon system fails due to individual beacon outage or infrastructure power failure. When a failure is detected, the Backup System using the CrossTalk Controller will activate the LED backup beacon and send a notification via email and/or text to the pre-designated responsible technician. The Backup System will continue to work until the primary navigation system is repaired or power is restored or for a maximum of 10 days. The K&K Backup System provides peace of mind that you're navigational system will always be operational.

The K&K Solar Navigational Backup System includes:

- 10 Watt Solar Panel
- Aluminum Control Box (*Stainless Steel optional*)
- AGM Battery
- K&K CrossTalk Communication System
- 4-Tier LED Bulb available in red, green, or white



* Components in color are standard for the Backup System.

SYSTEM COMPONENTS



Solar Panel K&K solar panels utilize the most up to date solar technology and electronics to maintain power levels through rain, sleet, heavy snow or strong winds. Built-in blocking diode prevents the reverse flow of electricity. Equipped with a heavy-duty aluminum frame for weather-resistant performance. The **Control Box** is constructed of aluminum and designed to securely hold the solar panel and protect its contents from the elements.



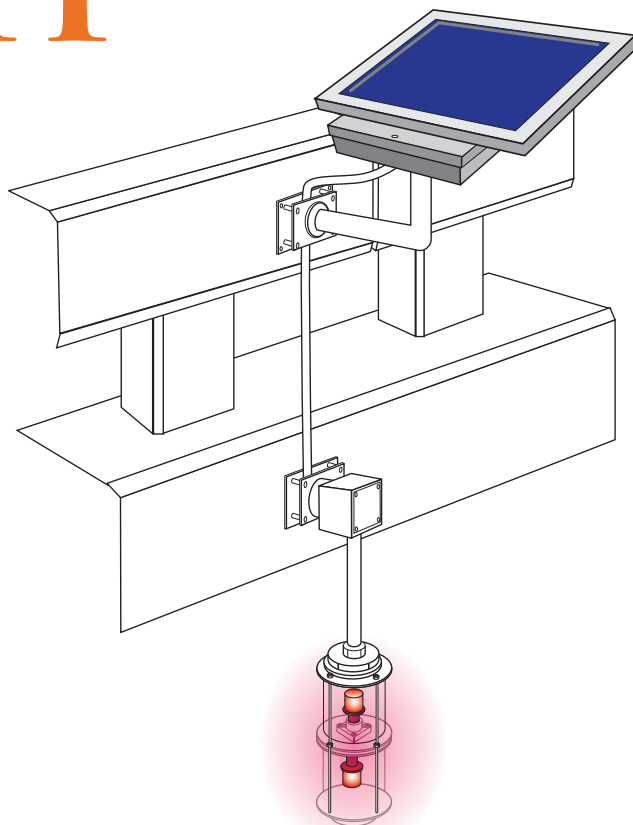
CrossTalk K&K Systems' CrossTalk device is a compact, all-in-one solar controller, flasher, auto-dimmer and scheduler that is programmed using cloud-based software via monitoring service. The CrossTalk is located inside the control box beneath the solar panel. The CrossTalk can be accessed using a computer, smart phone or tablet from a central office or on the go to control any number of beacons in many locations through the web interface. For more information see the back of this brochure.

NAVIGATIONAL RETROFIT SOLAR SYSTEM

The K&K Navigational Retrofit System is very similar to the Backup System except the Retrofit System is designed to replace AC powered systems and work as the primary navigational lighting system along with an LED Backup System that is designed to activate if the primary beacon system fails for any reason. The Backup System using the CrossTalk Controller will activate and send a notification via email and/or text to the designated technician. The battery and solar panel are slightly larger to accommodate daily activation from dusk until dawn. By retrofitting your existing system with K&K solar and LED technology, you save money and provide a reliable, efficient, and advanced navigational system.

The K&K Solar Navigational Retrofit System includes:

- 40 Watt Solar Panel
- Aluminum Control Box (*Stainless Steel optional*)
- AGM Batteries
- K&K CrossTalk Communication System
- 4-Tier LED Bulb available in red, green, or white



* Components in color are standard for the Retrofit System.



K&K Systems Beacon with sealed LED housing (available in polycarbonate, aluminum or bronze), are easy to mount. Our beacons are pre-wired with heavy-duty cable and LED bulbs. K&K's Navigational Complete Systems comes standard with single beacons or double beacons. Beacons are optional for the Backup and Retrofit Systems.



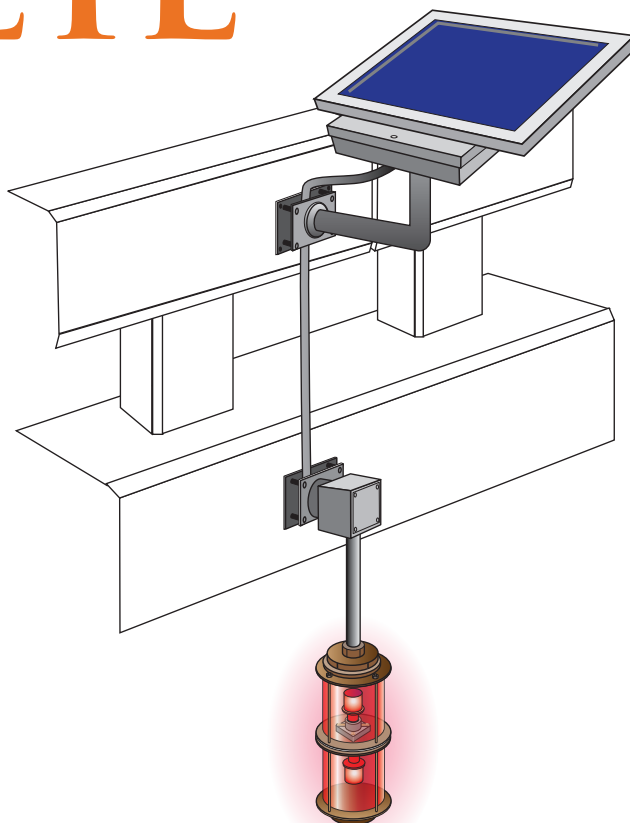
4-Tier LED Beacon Bulb K&K Navigational Lighting Systems utilizes compact LED 12V bulbs that have low power consumption for full brightness with no intensity variations. They are easy to install, provide a longer serviceable life and are more durable than incandescents. A protective housing prevents the electronics against moisture and corrosion. Bulbs are available in red, green or white.

NAVIGATIONAL COMPLETE SOLAR SYSTEM

The K&K Navigational Complete System is engineered for new construction or for complete navigational system replacement. The Complete System is a solar-powered navigational LED primary beacon system with solar panel, control box, batteries, CrossTalk controller, pier or swing mount, and all hardware. Additionally, the Complete System includes the LED Backup System that is designed to activate if the primary beacon system fails for any reason. The Backup System using the CrossTalk Controller will activate and send a notification via email and/or text to the designated technician. The battery and solar panel are designed to accommodate daily activation from dusk until dawn. The K&K Systems Complete Solar System provides a reliable, efficient, and advanced navigational system.

The K&K Solar Navigational Complete System includes:

- 40 Watt Solar Panel
- Aluminum Control Box (*Stainless Steel optional*)
- AGM Batteries
- K&K CrossTalk Communication System
- Mounting hardware
- Pier or Swing Mount
- Single or Double Navigational Beacon
- 4-Tier LED Bulb available in red, green, or white



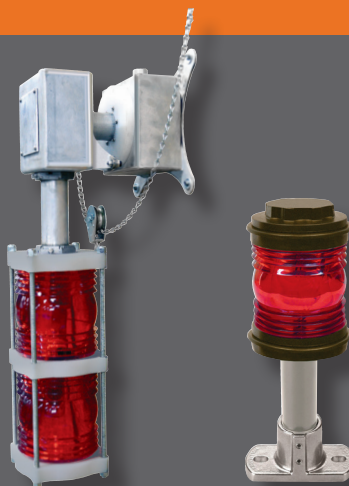
* Components in color are standard for the Complete System.

MOUNT OPTIONS

Swing Arm Navigational Lighting

Mount attaches to the side of the bridge and allows the navigation lights to extend below the main structure of the bridge so as to be seen from all sides. Optional length extender rods allow for optimal beacon height. The swing arm design provides for easy maintenance access to beacons. Using the provided chain, the beacon swings to a height that is comfortable for personnel to perform needed repairs. The Swing Arm mount application can be utilized for single or double beacons.

Pier Mounted Navigational Lighting affixed directly to structures. Optional length extender rods allow for optimal beacon height. These are used in areas



where accessibility is unencumbered. Both the Swing Arm and Pier Mounts are constructed using aluminum to prevent corrosion and longterm service. The beacon mount can be used for both single and double beacon applications. This interchangeability results in a significant cost savings in equipment, and less installation and repair time.

SYSTEMS MONITORING SOFTWARE

K&K SYSTEMS CROSSTALK CONTROLLER

Safe waterway passage depends on properly working navigational systems. K&K Systems' CrossTalk is an advanced wireless solar lighting controller that allows you to monitor, control, and receive notifications from your navigational system no matter your location by utilizing our CrossTalk web interface software. As long as you have monitoring service, you have control of your navigational system. Manage beacon schedules, designate managers and/or technician, receive beacon function or outage notifications with the CrossTalk cloud-based software.

MONITOR

The CrossTalk device constantly monitors AC and DC power flow to navigational beacons. When power is interrupted, the CrossTalk Software notifies the assigned contact list via text and/or email. CrossTalk detects:

- Low Battery Voltage • Low Solar Voltage • Power Outage • Blown Bulb

COMMUNICATION

K&K Systems provides communication to and from your navigational system by utilizing the CrossTalk controller. Control, monitor and manage all of your beacons no matter if your system involves one or one hundred. CrossTalk allows you to manage multiple beacons in multiple locations with multiple managers from the comfort of your office or on the go with any device including computers, smart phones and tablets. You're also able to receive notifications on all of your devices. The contacts portion of the CrossTalk software allows for multiple managers so your systems is not reliant on a single individual. Add as many contacts as you deem necessary to maintain your navigational system.

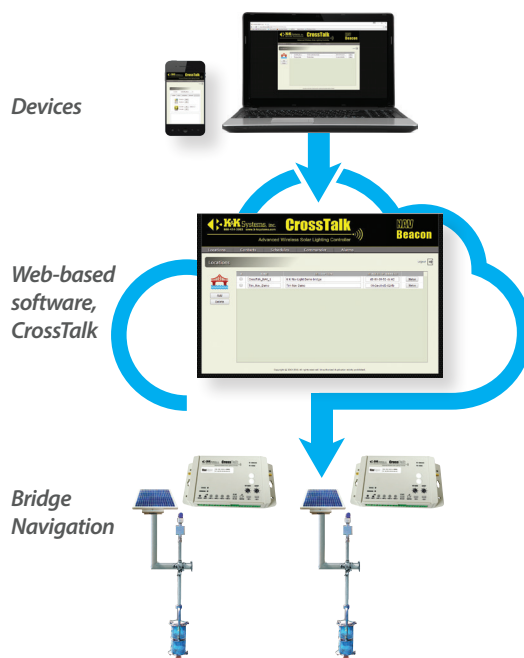
NOTIFICATIONS

If your primary beacon system fails, you will be the first to know. The CrossTalk software sends an email and/or text message to your preassigned contact list as soon as our monitoring systems detects a failure. Not to worry, though. With any one of the K&K Navigational Systems, the backup LED will activate assuring that waterway obstacles are marked. By utilizing CrossTalk, you are always just a click away from your navigational beacons.

MONITORING SERVICE

Every CrossTalk comes standard with a 10-year monitoring service. This means that you will not have an additional charge for monitoring service for 10 years when using any of the K&K Systems Navigational Systems. When your systems is installed, your communication systems is setup and in operational mode. Simply login to our free, cloud-based, CrossTalk software to manage your beacons.

Contact K&K Systems today for the most innovative navigational system management and backup system available.



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