

Flashlights: UV, IR and Visible Light

Flashlights have been revolutionized by LED technologies. Not only do LEDs lack of filaments and glass envelopes lend themselves to the rugged environments flashlights are used in, LEDs are also current-driven devices that register low consumption of battery power which extends the use of battery-operated flashlight torches, luminaires and head lamps rendering them much more useable. Marubeni-OPTO™ is the widest spectrum supplier of LEDs ranging from 260nm λ P through to 1600nm λ P wavelengths. When people think of flashlights, what is normally thought of is a white light version. Yet flashlights in other wavelengths also have very interesting utility that can significantly aid their users. With this in mind, Marubeni-OPTO™ specializes in specialty versions of flashlights, including Ultraviolet or UV Flashlights, Infrared or IR Flashlights as well as combination or multiple wavelength flashlights. These lights are great for the hobbyists, pet-owners, home owner, outdoor campers, soldiers, forensic specialists, inspectors, auto repairmen, crime scene investigator, border patrolmen, gemologist, scientist, fisherman, DNA analyzer,and the users list goes on. Marubeni-OPTO™ Flashlights are our way of bringing you some of the benefits of today's rugged, low power consumption LED technology in a device that you can use simply and effectively hour after hour



For your Specialized Viewing Requirements Rely On Marubeni-OPTO™

UV Flashlights: Rugged long wavelength UV-A LED Flashlights, the ideal mercury-based Black Light replacement, produces a variety of fluorescing effects, similar to shorter wavelength mercury-based, fragile Black Lights. Shine it on an object that naturally fluoresces such as scorpions (Bark, Hairy Desert, Striped Tail, etc.) at your campsite, various types of minerals while prospecting and identify what you are looking for, reptiles in the field or care for them as pets with the UV light they crave, sea-life at the shoreline or on a variety of "scapes" that incorporate fluorescing materials such as fluorescent painted walls and decals, T-Shirts, Posters, etc. For the pet owner, determine where your pet has urinated and how well you've cleaned it up, or search for pet fleas, head lice, rodents, spiders, etc



that leave their trails. Use a black light ink pen to mark your valuables and collector items. Use in night time paint ball battles. Check your skin for 'hidden' blemishes; or use to control various skin ailments such as psoriasis, acne, dermatitis, etc. while absorbing Vitamin D and achieving a well-being effect. It can also be used to diagnose ringworm, fungal infections, corneal scratches, foreign bodies in the eye, blocked tear ducts, acne, erythrasma, tinea versicolor, microsporum canis, scabies, alopecia, porphyria, bacterial

infections, and many other conditions. Or use to 'Charge' your fishing lures and fluorescing fishing line while night fishing; etc. Other more industrial uses include currency and credit card validation; security ticket or marking at events; verification of driver's licenses, IDs, documents; mineral prospecting and identification; art forgeries; fluorescing of blood and other bodily fluids at crime scenes; bacteria and other types of media inspections in hotel rooms, meeting places, etc. or check for bed bugs and other pests; authentication of various items ranging from collector glassware to stamps, to various other analyses. Inspect and validate art, sculptures, old ivory, depression glass, or quilts; use while examining gemstones; inspect ceramic, porcelain and pottery repairs; carbon stains on metal and welding inspections; agricultural, rodent and pest inspection; crude oil and chemical analysis or for their leaks and spills, use for pipeline inspection or automobile inspection and repair jobs, ideal for food inspectors for detecting contamination or bad items such as in a granary or silo where moisture can



affect food quality for checking for contaminated beef at a processor. It should be noted that the UV LEDs in our flashlight emit in the Near UV and longwave UV-A region, that is, UV radiation nearest in wavelength to visible light, with low frequency and therefore relatively low energy. The UV LEDs we use, have been known to be relatively harmless to the user, however, it should be noted that extended use and overexposure has been toughening of the skin, possible suppression of the immune system, and eventually with extended use cataract formation especially at shorter wavelengths. UV-A light is often called black light. Most phototherapy and tanning booths use UV-A lamps that are mercury based and emit in the 350-380nm λ P range, while our Near UV and UV-A long wavelength LEDs emit at a peak of 397nm λ P, this creates a safety margin for use of our products compared with traditional mercury-based Black Lights.

Near Infrared Light: Rugged IR LED lighting is utilized in night-vision applications ranging from outdoor woodsmen to tactical applications for our soldiers to enhance IR vision intensification systems or your smartphones camera; or at low-light output to help our natural night vision eyesight maintain itself yet provide some illumination. This flashlight is ideal for camping, hiking, astronomy, photography, training and other uses. It is also quite useful for various healing applications on family members or while on a trip, camping or sailing. The types of healing it can accelerate include wound healing, diabetic or bed sore healing, cold sore healing, ulcerated mouth, acne or plain old cuts, scratches and abrasions. Facial therapy may also be helpful with nervous tics. Mild depression may also be helped with a series of



mini therapy treatments, offering some of the same effects that can be found by spending time in natural sunlight. There are even claims that the stimulation of ATP (adenosine triphosphate, which IR LED therapy initiates), in the body can help with various forms of sexual dysfunction in both men and women. Depending on the ailment that is addressed, the duration of the red light therapy session will depend on the nature of the health issue. The sessions may be anywhere from two to five minutes in length, with repeated sessions occurring after a short period of rest. For example, when using IR LED skin therapy to facilitate wound healing, it would not be unusual to conduct one five minute session, allow the patient to rest for roughly three minutes, and then apply a second treatment lasting five minutes. This procedure would be repeated daily in order to motivate

the body's natural processes to heal the open wound. Can be used to prevent hair loss and increase the growth of hair. Also fantastic at relieving joint and muscle pain caused from sports or other type of injury, sprains, or arthritis pain. Can also be used to lower blood pressure and provides a sense of well-being. Why buy expensive medical therapy healing devices, when you can just buy a flashlight that does the same thing? Can also be used for on or off roadside accident signaling or for signaling that you are lost or need help when out hiking so Night Vision Device (NVD) equipped rescue personnel searches can be facilitated.

Marubeni-OPTO™ provides the widest spectrum of LEDs in the world. We can choose from any type of LED we have to manufacture and produce the Flashlight you require. Other Marubeni-OPTO™ Flashlights include:

- White Light: 6000°K Equal Energy White (EEW) light is a primary workhorse flashlight with balanced white light for any application especially image capture, encoding, graphic arts, textile identification or reproduction
- RED Light: Favored by pilots, fishermen, outdoorsmen, astronomers, these lights usually feature a 630nm λ D and a deeper Ruby Red 660 λ D wavelength
- Yellow Light: These lights are used in emergency kits for signaling, yellow 592nm λ D flashlights. They are a traditional color used for this and other signaling, caution-warning and guidance purposes such as crowd control.
- Portland Orange Lights: These lights emit at 605nm λ D and somewhat preserve low ambient adjusted vision at low emission use, while providing excellent illumination.
- Emerald Green Light: 555nm λ D light is the perfect light for Night Vision Instrument Systems (NVIS)
- Green Light: Your eyes are drawn to this 525nm λ D light, fun to use and view objects and landscapes.
- Cyan Light: These lights, as they emit at 505nm, are excellent aids to the night blindness person as well as for aviation and traffic signally beacons "green" all OK purposes. They are also excellent for underwater applications as this wavelength travels further in water than any other wavelength.
- Blue Light: Many have fun with this 470nm emission light, good for a variety of get-togethers and fun occasions, including tailgating, dance parties and other forms of entertainment.
- Multi-color Light: Dual White and Red (use in daylight and to preserve night vision) Flashlights; Dual Red and Yellow Flashlights as well as any custom flashlight you can perceive of can be had from Marubeni-OPTO™.