

# Lights...Camera...Action

Every other page in a scuba magazine is an advert for this weeks super dive light. What with Halogen, HID, and LED, and not forgetting, Krypton, Xenon even HMI bulb types, its a mine field, and lets not even get into battery technology! Here's a few observations with regard to about a dozen of the various models available. Most torches are rated by the power that the bulb consumes ie 5 watt or 50 watt, unfortunately power consumption does not necessarily mean brighter light.



Halogen Bulbs are probably the most popular bulb option, being relatively inexpensive and robust. Primary Halogen dive lights often boast power outputs up to 50watts, but generally 30watts is sufficient. Halogen light is ideal for general lighting, but appears yellow to brown when used for video or photography work. A plus for halogen is that the bulbs are often replaceable with those obtained in car accessory shops, as they both generally share 12 volt technology. Halogen lights often have a power change setting, but realistically this is of little benefit with bulb outputs less than 30 watts.

H.I.D bulbs are very fashionable at the moment, High Intensity Discharge (H.I.D) systems use electronic wizardry (voltage invertors) to increase bulb temperature and therefore brightness. HID bulbs are very efficient with battery power and can produce massive equivalent power outputs, with low current drain. An equivalent 50 watts of halogen power can be reproduced from only 10 watts of HID bulb. HID battery packs can be smaller, often last far longer than the equivalent Halogen. HID bulbs give of a dazzling white light, that can appear blue underwater to the naked eye. This blue light is excellent for underwater video



enthusiasts. The HID bulb delivers a beam of light that has a spread often less than 10' arc. This appears like a "light sabre" underwater. HID bulbs are quite useful in poor visibility, due to the bulbs tight beam. HID bulb brightness can place very bright "hotspots" into video or photography images, that effectively over illuminates the target. Some manufacturers provide a movable reflector that can reduce the "hotspots" common with HID, while others use frosted glass as a diffuser... HID technology sounds perfect doesn't it? The down side of all this brightness, compactness is fragility and expense. HID bulbs are like glass slippers and replacement bulbs can be very costly.





LED bulbs have come a long way since space invader games. LED's come in sizes and outputs that now make them useful as illuminators rather than just status advisers. LED bulbs have a very low current drain and a very white dazzling output. LED bulbs as yet cannot be readily focused and this makes for a very localised light with a high beam spread. The beam spread and bulb whiteness is very useful for image capturers, both video and photo. LED bulbs are currently up to 10 watt power outputs, soon to

be topped with 20 watt power, unfortunately LED power has fairly high power consumption. LED bulbs have been available in back up torches for a while, the bulbs are ultra reliable and offer enormous durations. The newer primary LED divelights have multiple bulbs that, give bulb redundancy and useful brightness, with up to 30 watts of power.

When purchasing a primary dive light you should decide on traditional pistol grip and lantern handles or, the umbilical system with the light head remote from the battery pack. Remote heads are usually very powerful, and much less cumbersome than an equivalent powered pistol grip light. Traditional grip lights are cheaper than most umbilical models. also in their favour, is ease of use, solid construction and proven reliable technology. (except in HID form ;-)



## BACK UP LIGHTS

The smaller dive lights that fill divers christmas stockings around the world have turned from boy scouts toys to pieces of high tech gadgetry. Back up lights nowadays can have multiple LED bulbs or xenon or even krypton bulbs. Back up lights by virtue of their smaller sizes can have crush depths over 600m. When buying any divelight its advisable to get a model with incredible depth ratings.



The deeper the depth rating, the more times the light will survive multiple shallower depth excursions. Dive lights should ideally be constructed with a cylindrical shape. Lights that have a round body as opposed to square, will remain water tight for longer.



Here we have a selection of popular back-up to mid range dive lights. The green model in the middle has a depth rating of 152m (500 ft) The batteries in the centre shot were inside the green light at 313m (1032ft). The green light was one of a pair, where only one survived the dive. As you can see the batteries didn't fair too well either!

Hope you found all this illuminating... start the car ;-)

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