

D&D T5 Retro Units

(Extracted from a magazine article and refers to D&D Mega Twin, Mega Single, Power Twin and Power Single Products)

D&D aquarium solutions limited may be a new name to many people reading this article but their products are certainly not, bringing long established products like Deltec and Rowaphos to the UK and American market place.

The company is headed up by David Saxby who has been at the forefront of marine aquaristics for many years, being mentioned in a number of books and articles in Germany and America and having kept marine tanks for over 30 years. At 3,700 gallons his current system in his home is one of the largest private reef aquariums in the country with individual coral heads having grown to over 1 metre across.

They say in life that 'experience is the best school but has the highest fees', which is certainly true in our market place and David freely admits that if there are pitfalls in this hobby that over the years he has fallen into every one of them.

With the current trend for new fads and conflicting information, he is now on a personal crusade to cut through this and bring his vast experience to the hobbyist.

D&D are also unusual in that most of the people working for and with the company are also reef keepers who understand their range of products, which is extensive but restricted to products that are known by the company to work and to work well.

One such product is T5 lighting.

This is a 'buzz word' in the hobby at the moment with everyone jumping on the T5 bandwagon with different levels of product in standard and compact versions.

D&D were first on the market in the UK when they launched their full range of lamps and tubes for freshwater planted, marine and reef aquariums about 4 months ago and are going from strength to strength.

The products were extensively tested over a 12-month period prior to release to develop the right range of tubes for good coral and plant growth.

The large aquarium of Bernd Mohr was used as the development site for the blended marine tubes. As one of the most experienced aquarists in Germany, Bernd has been running metal halide lighting on his systems for over 20 years. Following initial comparison trials the whole aquarium has been converted to only T5 lighting and 18 months on he comments that the results are fantastic.

His corals show tremendous growth rates, better colours, more polyp extension and no die back due to shadowing, no radiant heat build-up and significantly lower running costs. To view Bernd's tank go to www.korallenriff.de/Mohr/hauptaquarium.html

D&D now have T5 tubes available in 5 different colour spectrums available in 2, 3, 4 and 5 ft lengths.

Midday 6000 - is rated at 6000 Kelvin with a spectrum designed to recreate sunlight. Suitable for saltwater fish, reef and freshwater aquariums.

Deep Ocean - is rated at approximately 22000 Kelvin. This simulates loss of the red spectrum found in deeper water conditions. Suitable for saltwater fish, reef and freshwater fish only aquariums.

Aquablue - Is our standard marine tube, which is a 60:40 white:blue blend of grade 'A' phosphors with a five point spectrum. These were specifically developed for growing SPS corals down to a depth of 800mm. Suitable for saltwater, reef and freshwater fish only aquariums.

Aquaflo - This tube brings out the blue and red colours in your fish whilst maintaining maximum plant growth. Designed for planted freshwater aquariums.

Actinic plus - This is the latest of our 5 tubes and as the name suggests it emits high levels of actinic light. This will make even the drabest corals stand out by producing high levels of fluorescence.

What are the benefits of T5 lighting?

As everybody knows, for good coral growth or even survival, especially hard corals, one of the critical parameters is light.

With the advent of T5's, (which incidentally only describes the small diameter of the tube and does not indicate the lumen output), and the development of the correct phosphor blends it has been possible to produce a fluorescent tube, which can emit 10% more light than the equivalent wattage from a metal halide bulb. This is achieved with a 40 % reduction in running cost and without the radiant heat problems that are associated with metal halide lighting.

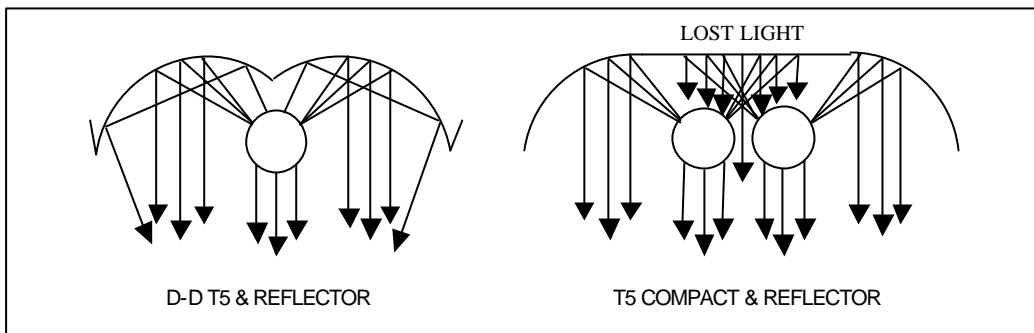
The actual tubes themselves are significantly less expensive than metal halide bulbs and have longevity far in excess, up to 15000 hours.

The T5 tube is only half the story.

The narrow diameter of the standard linear T5 tube has allowed production by D&D of a highly efficient reflector. The reflector is gull wing in shape, which allows the light from the back of the tube to be utilised and not reflected back through the tube where it would be lost. This is only possible due to the narrow diameter of the linear format T5 as the light is reflected in a clear path away from the tube. **See diagram.**

The return edge on the D&D reflector strengthens it along its length, (up to 5 ft long), and prevents sagging and distortion which would result in further loss of light if this was not present.

Comparison of Standard Linear T5 and T5 Compact where the tube bends back on itself half way along its length



In contrast it can be seen for example that for the *T5 compact* it is not possible to build as efficient a reflector therefore a large percentage of the light is reflected back towards the tube and lost resulting in less lighting per watt of electricity and less light on the corals / tank.

We have discussed the basics now what about fittings

D&D have a wide range of light fittings in general ranging from 1000-Watt metal halide units, hanging metal halide units with built in T5 actinic tubes plus moonlight bulbs through four and six tube hanging T5 units to one of the most popular ranges the T5 Retro Unit.

The T5 retro unit was designed by D&D and like all of the lighting range utilises German manufacturing quality for their construction.

The body of the T5 Retro is a lightweight single piece aluminium extrusion, which is anodised to protect from corrosion before machining to take one or two light tubes.

The upper surface is shaped to protect the tubes during transport, the importance of which would be clear if you have ever tried order tubes through the post before and also doubles up as a groove to run excess wire during installation above the tank.

One of the design criteria for the D&D unit was that it should not just be splash proof due to the potential dangers of an electrical fitting in an aqueous environment, to the person but also to their precious livestock.

The European Standard that the retro unit passes includes a short-term immersion test should the worst ever happen. The unit however is not designed to be immersed during normal operation.

The sectional dimensions of the twin unit are 165mm wide x 65mm deep allowing ample space for multiple units giving the greatest light intensity per square inch of any fluorescent lighting system on the market.

The D&D T5 Retro, (Megatwin), units come complete in 2,3,4 and 5ft lengths with two tubes, gull wing reflectors, 3m of flex, three pin plug and switch. They are also available as a single tube unit.

Further Considerations

We have talked in length about the power of the T5 units and their effect on the growth and vitality of corals however light is a food for another simpler group of organisms – ALGAE.

Even in a change from metal halide lighting, many people find that the increase in light due to better distribution when using T5's can have a positive effect on the growth of algae which can be a negative effect for the average aquarium owner.

This is quite normal and only indicates that the aquarium water is too rich in nitrates or phosphates or both, which act to fuel the algae growth. Remember that in a reef tank, which is a closed system, the way that the light increases coral growth is by feeding the symbiotic algae (zooxanthellae) that grow within the coral. By removing either phosphate or nitrate from the tank it will remove one of the vital elements required for nuisance algae growth.

Phosphates however are also an inhibitor to coral growth and act by restricting the process of calcification within the coral skeleton. In a reef tank this is a far worse effect than the increased algae growth on the glass.

In both salt water and freshwater aquariums the phosphate levels can be controlled to help starve out the algae by the addition of **Rowaphos** phosphate absorber, which is a man made chemical designed specifically to remove phosphate from water.

The ideal level for phosphates within the aquarium is less than 0.015mg/l measured as phosphorus, (0.046 mg/l measured as PO₄)

For further information on these or other products contact D&D aquarium solutions or see our web page at:

www.d-daquariumsolutions.com

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