

## **Setting up of the fluorescence equipment**

As fluorescence source we used a torch containing HighTech LEDs. These are 4 blue high power OSTAR SMT LEDs in multichip technology (4 x 9 MegaCd/qm), i.e. 16 HighTech LEDs. In our recent construction (fig.18) we used 3 blue LUMINUS HighTech LEDs with 1200 Lumen. The first commercially available torches contained 1 LED only.

The diving mask will be covered with a special yellow filter from the US factory Night.Sea. A similar filter was placed in front of the housing for the cam corder.



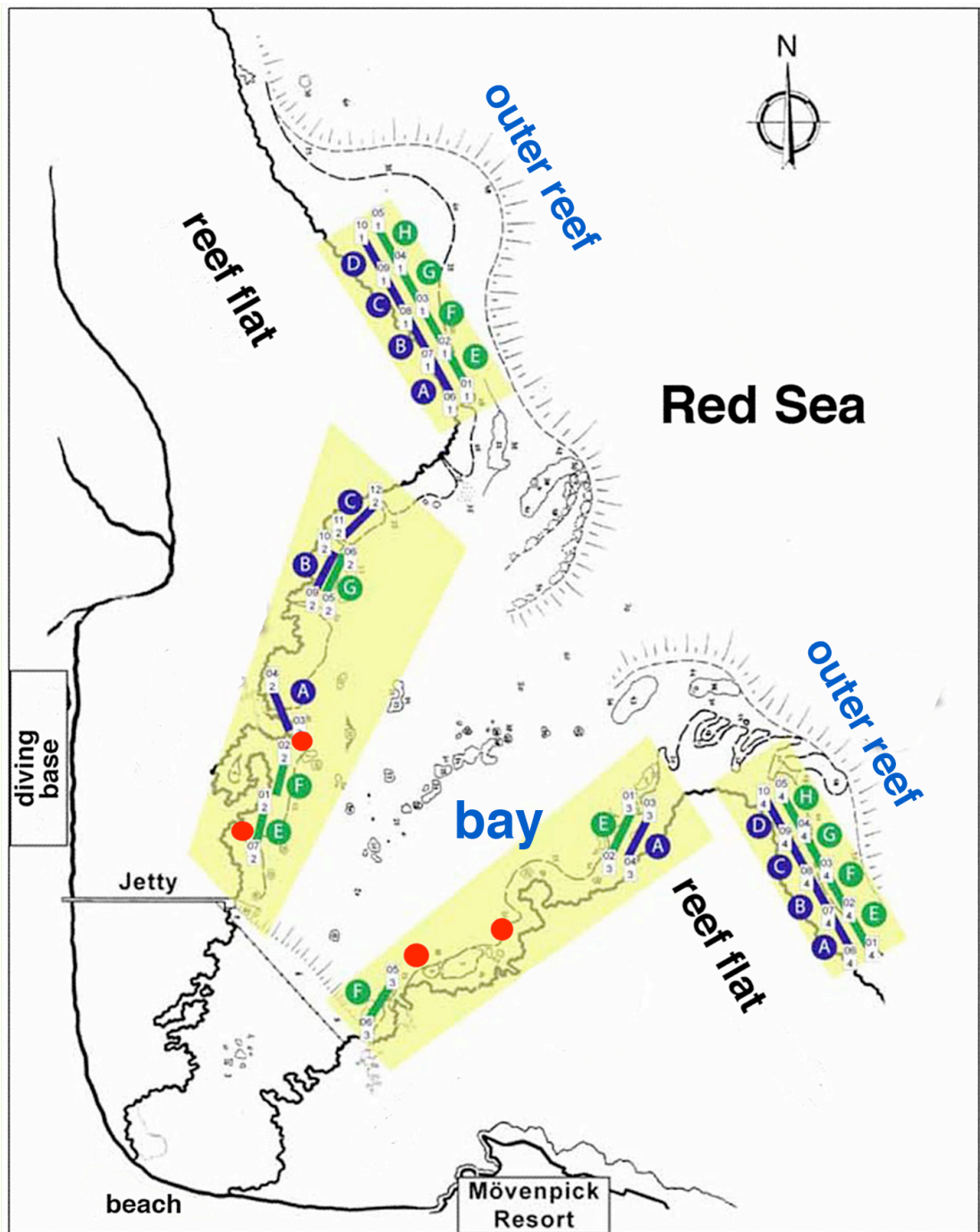
**Fig. 12 Sealux® Housing**



**Fig. 13** The author close to the coral reef in the ElQuadim Bay, ElQuseir, Egypt



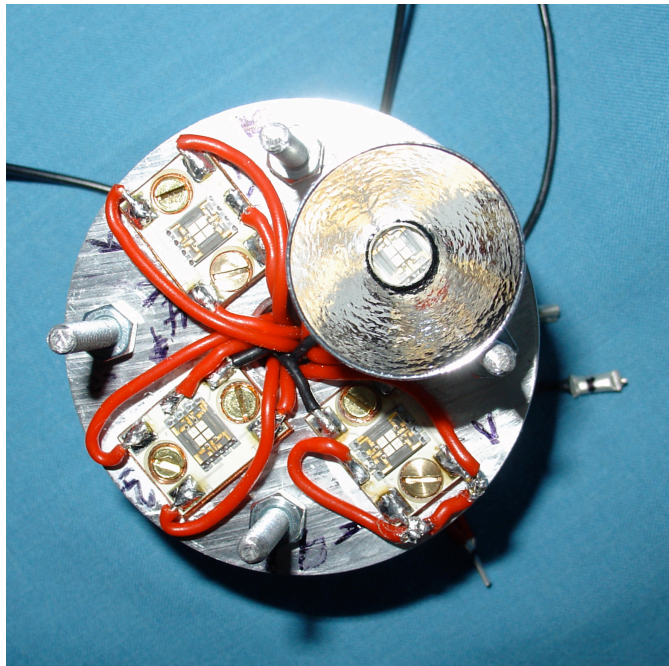
**Fig. 14** Documentation during day time in a depth of 20 meters



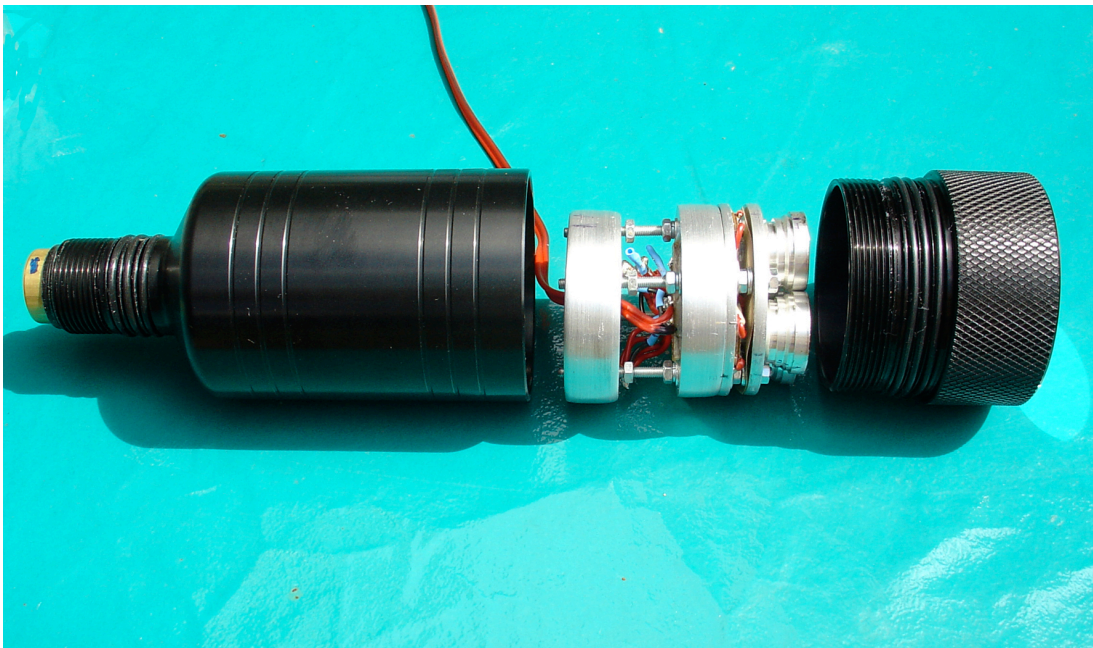
**Fig. 15 The El Quadim bay, El Quseir, Egypt**

The Fringing Reef (outer reef) is interrupted by the bay, which was a former harbor during the Roman time. The red points mark the area, where we have performed our fluorescence studies in a depth of 15 - 25 meters.

*fig. modified after H. Heiss et al. (2005)*



**Fig. 16** Shown are 4 modules OSRAM SMTs, each with 4 LEDs (altogether 16 LEDs). Also one ALU - reflector can be seen



**Fig. 17** Explosion diagram of the fluorescent torch. The black body was a former HID housing of TillyTec - Modular Power Lightsystem



**Fig. 18 HiTec Fluorescence with 3 blue LUMINUS LEDs**

- a) top view on the 3 high power LEDs
- b) top view with the 3 mounted reflectors
- c) explosion diagram. The black housing is from a former HID torch of TillyTec® - Modular Power Lightsystem