Parameter

Dive, light level profile [] *Abbreviation: DLLP* *Parameter no: 78002*

In accordance with data derived from electronic instruments of several manufacturers we use processed data on the animal's behaviour in different formats and at varying resolutions.

Light level *profiles* at varying time resolutions contain light level measurements recorded continuously by ARGOS satellite-linked dive recorders type SPLASH, manufactured by Wildlife computers. Light levels are relative measurements. The recording tag performs minimum measurements at $5*10^{-12}$ $W*cm^{-2}$ corresponding to readings between around 25 and 40. Thus each unit undergoes calibration by the manufacturer prior to deployment. Calibration points account for 2 decades of light level changes, and the tag reports light levels from 25-ish to 225-ish, thus representing a 10 decade span of light levels. The recorded light level is log-transformed. The conversion of log transformed light level values (*sens*) into irradiance as Watt per square-metre is given by

$$10^{-\left(\frac{240-sens}{20}\right)} * 10000 = \frac{W}{m^2}$$

The reciprocal conversion of Watt per square-centimetre into light level values is given by

$$\frac{20\log\left(\frac{W}{cm^2}\right)+240}{10000} = sens$$

In order to view both, light level values and irradiance, DLLP is aggregated in tandem with parameter "irradiance, total" (*8190*).

It is imperative to read the "Further details" section of each event label prior to data retrieval and analyses. The section summarizes the hardware configuration and the user-defined settings upon deployment. For technical specifications on hard- or software configurations of the different satellite transmitters you have to consult the respective manufacturers.