

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 $5 \times 10^{-12} \text{ W} \cdot \text{cm}^{-2}$ 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.