

Lumiso pH Calibration

On some occasions our customers notice differences between the pH results of our new Lumiso instruments vs our legacy instruments. Palintest Lumiso pool photometers have a pH calibration which has been compiled using solutions specified by NSF. (see NSF/ANSI/CAN/50-2019) to mimic the composition of pool water as accurately as possible.

The pH calibration on the legacy Palintest pool photometers was compiled using pool surrogate solutions containing calcium and alkalinity. Calibrations specified by the NSF have compositions closer to real swimming pool water, containing calcium, alkalinity, magnesium, and chlorine, and therefore we have chosen to adopt this method for the Lumiso instruments.

Typically the solutions contain 220mg/l of calcium hardness, 80mg/l of magnesium hardness, 2mg/l of chlorine and 100mg/l of alkalinity. The solutions are also measured at 27 and 39°C to represent the temperature of a swimming pool or a Spa respectively.

pH was measured across the range of the test at room temperature, 27°C and 39°C using a pH probe to compare the results of the legacy pool photometer. The results are shown in the table below.

pH probe	Legacy Photometer	
	27°C	39°C
7.1	7.33	7.42
7.3	7.49	7.53
7.5	7.72	7.70
7.9	8.02	8.04
8.3	8.38	8.33

pH probe	Lumiso	
	27°C	39°C
7.00	6.94	6.97
7.3	7.28	7.29
7.5	7.4	7.65
7.9	7.88	7.88
8.4	8.37	8.40

The Lumiso pH calibration aligns very well with the pH probe at 27°C and 39°C, but the legacy instrument reads about 0.2 units higher.