



What we measure

Seven live water-quality readings from three low-maintenance sensors - exactly what each one tells you, the healthy range, and why it matters for protecting your fish and your lake.

Reading	Unit	Healthy range	Typical
Optical dissolved-oxygen probe - On every station			
Dissolved oxygen	mg/L	7-11 mg/L	8.4
Oxygen saturation	%	80-110 %	95
Water temperature	°C	4-22 °C	17.2
pH probe - Add-on			
pH	-	6.5-9.0	7.4
Conductivity probe - Add-on			
Conductivity (EC)	µS/cm	150-800 µS/cm	520
Total dissolved solids	ppm	100-450 ppm	260
Salinity	ppt	~0 ppt (fresh)	0.23

Why each reading matters

Optical dissolved-oxygen probe (On every station)

Dissolved oxygen (mg/L) - healthy 7-11 mg/L

The oxygen actually dissolved in the water - the single most important number for keeping fish alive. It swings through the day: highest in the afternoon, lowest just before dawn.

Why it matters: Below ~6 mg/L fish get stressed; below ~4 mg/L a summer fish kill becomes a real risk. Watching the overnight low is what Lakelytics is built to catch and warn you about before it's too late.

Oxygen saturation (%) - healthy 80-110 %

How full the water is relative to the most oxygen it could physically hold at its current temperature - it puts the raw mg/L reading in context.

Why it matters: Saturation exposes trouble the raw number can hide: a 'fine looking' 7 mg/L on a hot afternoon may already be under-saturated, meaning the water will fall further overnight.

Water temperature (°C) - healthy 4-22 °C

The temperature of the water at the probe, on the same optical head. It drives oxygen capacity, fish metabolism and how fast algae grow.

Why it matters: Warm water holds less oxygen and makes fish burn more of it - the exact combination behind summer crashes. Above ~25 °C carp are under real heat stress.



pH probe (Add-on)

pH - healthy 6.5-9.0

How acidic or alkaline the water is, from 0 to 14. Most healthy coarse fisheries sit between 6.5 and 9, ideally around 7-8.5, drifting a little day to night.

Why it matters: A sudden swing or a reading outside that window points to an algal bloom, pollution or run-off - and extreme pH is directly harmful to fish and makes ammonia far more toxic.

Conductivity probe (Add-on)

Conductivity (EC) ($\mu\text{S}/\text{cm}$) - healthy 150-800 $\mu\text{S}/\text{cm}$

How well the water carries a current - a direct measure of dissolved minerals and salts. Every lake has its own baseline set by geology and inflows.

Why it matters: It's the change that matters. A sudden jump can flag run-off, pollution, road salt or a leak; a steady drift tells a longer story about your water.

Total dissolved solids (ppm) - healthy 100-450 ppm

The estimated weight of everything dissolved in the water - minerals, salts, nutrients - derived from conductivity.

Why it matters: Climbing TDS often shadows nutrient enrichment and heavy algae, which is exactly what fuels big overnight oxygen swings. A useful long-term health trend.

Salinity (ppt) - healthy ~0 ppt (fresh)

The salt content in parts per thousand. A freshwater lake should read close to zero and stay there, year in, year out.

Why it matters: Any meaningful, sustained rise in a freshwater lake is a red flag - saline run-off, a discharge or intrusion - well before it would ever be visible.

Every station reads dissolved oxygen, saturation and temperature as standard. pH and conductivity (with TDS and salinity) are add-ons on the same probe bus. Readings land on the Lakelytics app and web dashboard every few minutes, with tunable low-oxygen alerts and automatic aeration control.