

Ozone Reactor **OZR** for Fresh Water Ponds



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3 stage Ozone Reactor for fresh water Ponds and Pools

For fresh water fish ponds and pools AquaCare has developed an ozone reactor that puts ozone fast and efficient into the water. The dissolved ozone cracks biological persistent substances like “Gelbstoffe” and humic acids to realize their biological degradation – the water gets crystal-clear. Nitrite is oxidized and is consequently not harmful for flora and fauna, especially in the start-up phase of a pond. The oxygen concentration is rising.

The function of the AquaCare OZR

1. stage: in the upper section the feed water is mixed turbulently with ozone containing air. A small air pump should pump air through the ozone generator into the OZR.
2. stage: within the trickling section the water flows over trickling filter material that realizes a good transit of the ozone into the water.
3. stage: in the water filled section of the OZR the smallest bubbles will stay for a long time in the tube and dissolves more ozone.

The outlet water may flow over an activated carbon filter to eliminate surplus ozone or may flow directly into the pool. With the second version the ORP should be controlled to avoid over concentrations that can harm organisms.

Connection of the OZR at the water system

The OZR has to be connected with a feed water (separate pump or bypass of the main pump) with enough pressure / flow. A small air pump (option) presses the air through an ozone generator (option) into the OZR. To prevent back-flowing water into the ozone generation a check valve (option) should be connected or a safety loop must be installed.

To prevent an overdosing of ozone it is possible to connect the ozone generator with an ORP-control. Another way to prevent overdosing is an activated carbon filter that is connected after the OZR. The diameter of the activated carbon filter must be minimum as large as the main tube of the OZR.

Technical data of the **OZR50 - OZR70**

Size	OZR50			OZR70		
	OZR50-40	OZR50-70	OZR50-100	OZR70-45	OZR70-70	OZR70-100
Order number						
System	three-stage reactor					
Max. pond / pool size in m ³	4	8	12	8	14	22
Diameter main tube in mm	50			70		
Total height in cm*	40	70	100	45	70	100
Necessary height	+ 5 cm					
max. ozone needs in mg/h	30	60	90	55	110	160
Foot print: length × width in mm	140 × 100			180 × 140		
max. inlet flow in m ³ /h	0.2...0.4			0.3...0.7		
Materials	PMMA, PVC, ABS, PE, PVDF, NBR					
Connection water	G1/4", Nozzle 8			PVC d20, Nozzle 12 mm		
Connection ozone	6/4 mm					

* Special heights are possible

Technical data of the OZR100 - OZR150

Size	OZR100			OZR150		
Order number	OZR100-50	OZR100-70	OZR100-100	OZR150-50	OZR150-70	OZR150-100
System	three-stage reactor					
Max. pond / pool size in m ³	20	30	46	44	70	100
Diameter main tube in mm	110			150		
Total height in cm*	50	70	100	50	70	100
Necessary height	+ 5 cm					
max. ozone needs in mg/h	150	230	350	330	500	800
Foot print: length × width in mm	210 × 160			310 × 220		
max. inlet flow in m ³ /h	0.8...1.5			1.7...3.6		
Materials	PMMA, PVC, ABS, PE, PVDF, NBR					
Connection water	PVC d20, Nozzle 16 mm			PVC25, Nozzle 25		
Connection ozone	6/4 mm					

* Special heights are possible

Technical data of the OZR250 - OZR300:

Size	OZR250	OZR300		
Order number	380-250	OZR300-50	OZR300-100	OZR300-150
System	three-stage reactor			
Max. pond / pool size in m ³	150	170	440	700
Diameter main tube in mm	250	300		
Total height in cm*	195	50	100	150
Necessary height	+ 5 cm			
max. ozone needs in mg/h	2500	1300	3200	5300
Foot print: length × width in mm	430 × 400	310 × 220		
max. inlet flow in m ³ /h	5...10	7...15		
Materials	PVC, PE, PVDF, Silicone	PMMA, PVC, PE, PVDF, Silicone		
Connection water	PVC d50	PVC25, Nozzle 25		
Connection ozone	8/6 mm			

* Special heights are possible

Tips for operation



Use only pre-filtrated water: otherwise dirt and fibres get caught in the packing and causes more maintenance.

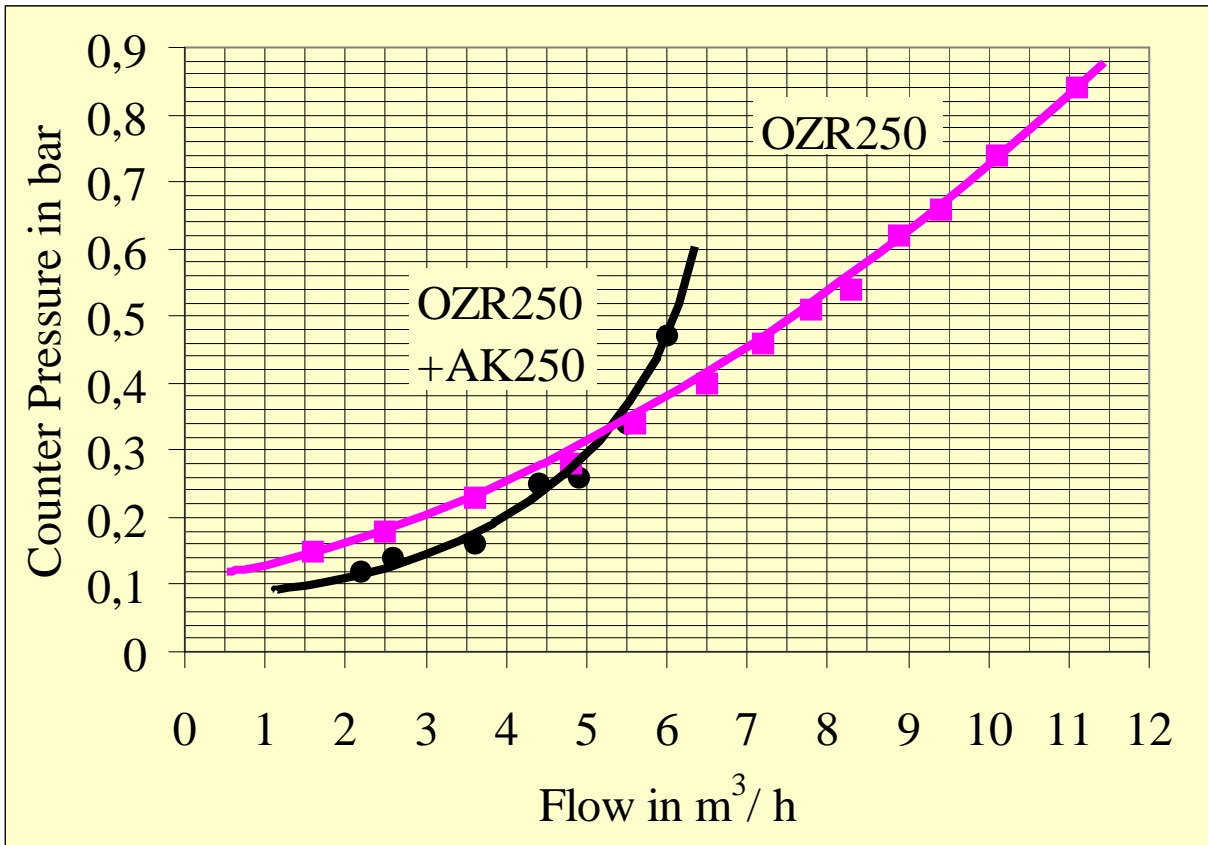


Take attention that the connected air pump will bear down all resistances: check valven, ozone generator, tubes, counterpressure of OZR and counterpressure of downstream installed filters, e.g. acitvated carbon.



The counter pressure depends on the choosen water flow (the more flow the higher the counter pressure in the OZR, see diagram below) and if the outlet ball valve is throttled: the higher the counter pressure in the OZR the more ozone will dissolve.

Performance curve



Performance curve of OZR250 (violet) and OZR250 plus a downstream activated carbon filter AK250 (black); the counter pressure was measured at the gas (air plus ozone) inlet.

Warning note

⚠ Attention! Ozone is a harmful substance and is to use in accordance with the manual of the ozone generator and local regulations only. ⚠