



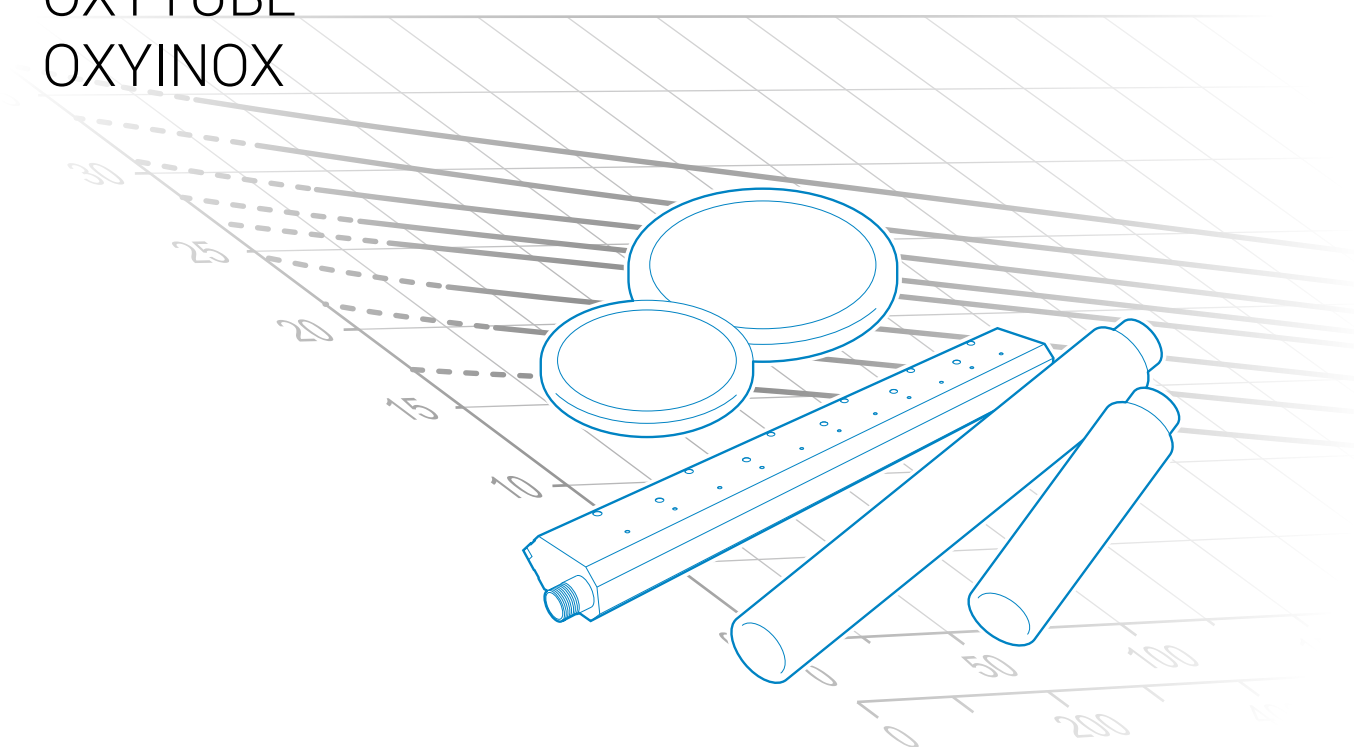
A  **TSURUMI PUMP** COMPANY

OXY series

OXYPLATE

OXYTUBE

OXYINOX



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OXY series

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D A T A B O O K L E T

Air diffusers

Disc-shaped air diffusers



OXYPLATE 9 - OXYPLATE 12

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Disc-shaped diffusers having elastomer membrane with tiny holes for application in water treatment processes in reactors with continuous or intermittent aeration, especially recommended for high-efficiency permanent installations.

The quality, design and membrane hole size ensure unbeatable efficiency in terms of the ideal oxygen transfer-pressure drop balance.

Tubular air diffusers



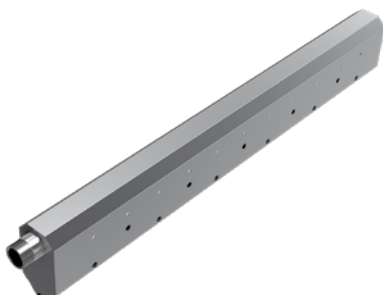
OXYTUBE 2-500 - OXYTUBE 2-750 - OXYTUBE 2-1000

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They are especially recommended for the construction of removable aeration systems and in all cases where a large output surface area is required with only a small number of air distribution pipelines.

Diffusers basically consist of a head with threaded connection, a rigid polypropylene mount and a tubular membrane in elastomer with tiny holes, secured with stainless steel band clamps.

Large bubble tubular diffusers



OXYINOX L305 - OXYTUBE L610

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Constructed in AISI 316 throughout, the type of diffuser is used where the liquid has to be both mixed and oxygenated.

Its ideal applications are aerated sand separators, aerobic digestion tanks, pre-aeration tanks and in general any installation where the use of steel is necessary due to the nature of the liquid for treatment.

Disc-shaped air diffusers

OXYPLATE 9 EPDM LP

MEMBRANE: EPDM LP – PERFORATION: FINE BUBBLE

Features

Membrane thickness	mm	2,0±0,15
Active surface	m ²	0,038
Orifice	mm	6
Threaded connection		¾" NPT
Weight	Kg	0,7

Membrane Features

Density (ISO 2781)	g/cm ³	1,06±0,02
Hardness (ISO 53505)	Shore A	60±5
Tensile strength	MPa	> 10,0
Tear resistance	N/mm	> 4,0
Elongation (ISO 37)	%	> 400
Tension set (ISO 2285) 24h at 100% extension	%	< 5,0

Performances

Min. operating flow	Nm ³ /h	2
Max. operating flow	Nm ³ /h	6
Max. overload flow*	Nm ³ /h	10
Operating temperature	°C	0-80
Operation mode		Intermittent / continuous
Application		Municipal & industrial

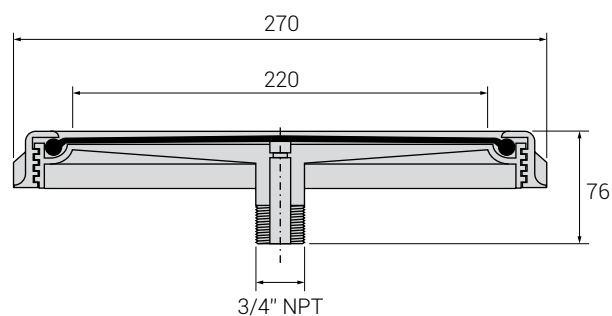
* max. 10 min. for membrane cleaning, test etc..



Materials

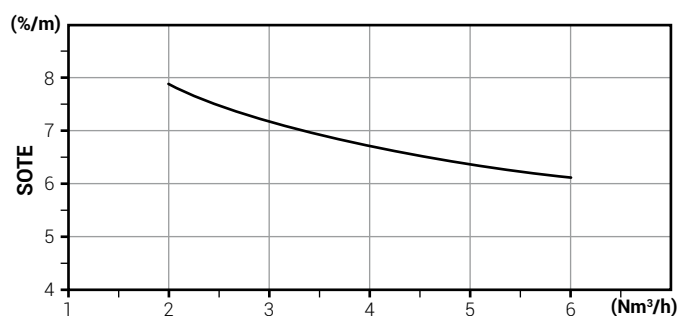
Membrane	EPDM low plasticizers
Support	PP GF 30
Ring nut	PP GF 30

Dimensions



Oxygen transfer

density 7.6% - test according atv-m 209



Airflow per diffuser

Headloss



Airflow per diffuser

Disc-shaped air diffusers

OXYPLATE 9 EPDM SM

MEMBRANE: EPDM LP - PERFORATION: FINE BUBBLE

Features

Membrane thickness	mm	2.0
Active surface diameter	m ²	0,0375
Orifice	mm	6
Threaded connection		3/4" NPT
Weight	Kg	0.47
Slit quantity	n	6600

Membrane features

Density (ISO 2781)	g/cm ³	0.905
Hardness (ASTM D2240-95)	Shore A	60 ± 5
Tensile strength (ASTM 412-92)	MPa	> 12.0
Tear resistance (ASTM D624-91)	N/mm	> 100
Elongation (ASTM D412-92)	%	> 650
Tension set (ASTM D412-92) 24h at 100% elongation	%	> 4.5

Performances

Min. operating flow	Nm ³ /h	2
Max. operating flow	Nm ³ /h	6
Max. overload flow*	Nm ³ /h	10
Operating temperature	°C	0-100
Operation mode		intermittant/continuous
Application		municipal & industrial

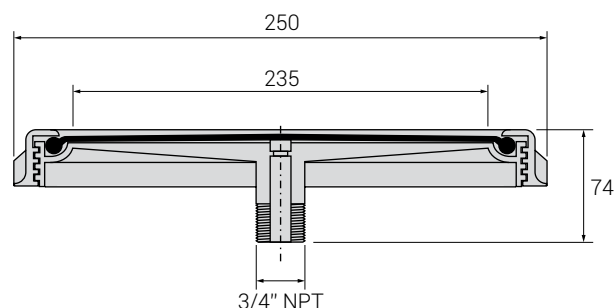
* max. 10 min. for membrane cleaning, test, etc.



Materials

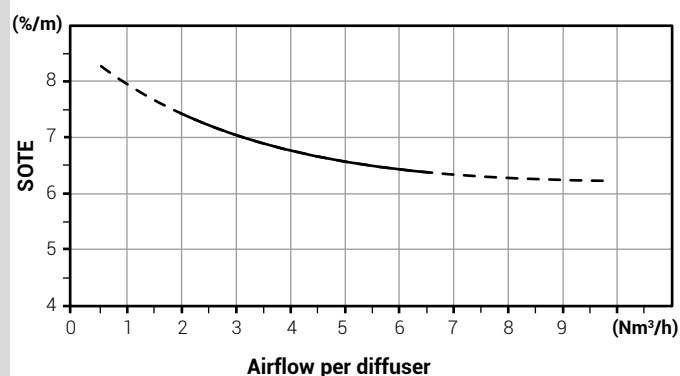
Membrane	EPDM LP
Support	PP
Ring nut	PP

Dimensions

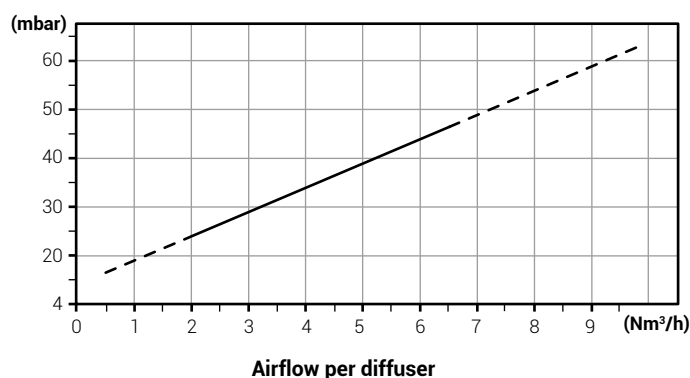


Oxygen transfer

density 7.6% - test according atv-m 209



Headloss



* Data refers to TDS correction to 1000 mg/l according to ASCE/EWRI 2-06 (2006), DIN EN 12255-15 (2003) and ATV M 209E (1996)

Disc-shaped air diffusers

OXYPLATE 9 S

MEMBRANE: SILICONE - PERFORATION: FINE BUBBLE

Features

Membrane thickness	mm	2,0±0,15
Active surface	m ²	0,038
Orifice	mm	6
Threaded connection		¾" NPT
Weight	Kg	0,7



Membrane Features

Density (ISO 2781)	g/cm ³	1,16±0,03
Hardness (ISO 53505)	Shore A	60±5
Tensile strength	MPa	> 9,0
Tear resistance	N/mm	> 35,0
Elongation (ISO 37)	%	> 600
Tension set (ISO 2285) 24h at 100% extension	%	< 5,0

Materials

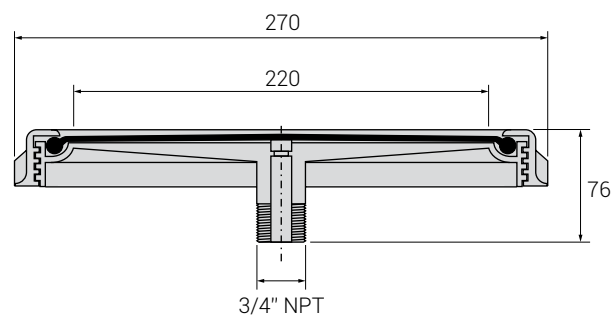
Membrane	Silicone
Support	PP GF 30
Ring nut	PP GF 30

Performances

Min. operating flow	Nm ³ /h	1,5
Max. operating flow	Nm ³ /h	7
Max. overload flow*	Nm ³ /h	10
Operating temperature	°C	0-100
Operation mode	Intermittent / continuous	
Application	Municipal & industrial	

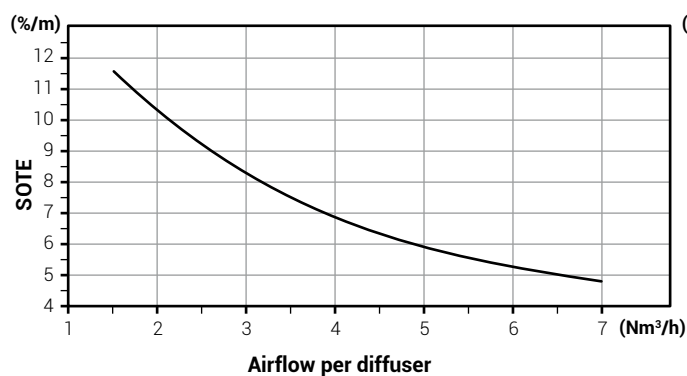
* max. 10 min. for membrane cleaning, test etc..

Dimensions

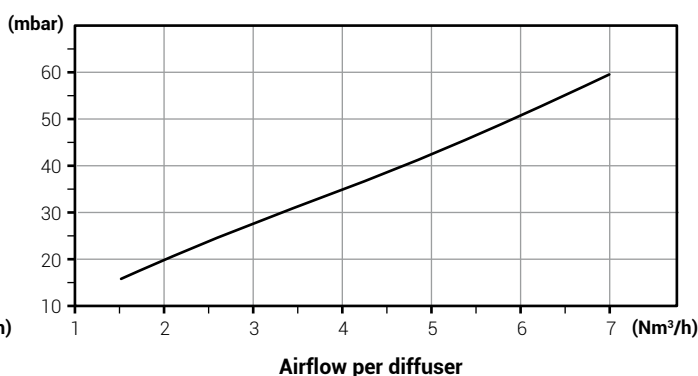


Oxygen transfer

density 7.6% - test according atv-m 209



Headloss



Disc-shaped air diffusers

OXYPLATE 12 EPDM LP

MEMBRANE: EPDM LP - PERFORATION: FINE BUBBLE

Features

Membrane thickness	mm	2,0±0,15
Active surface	m²	0,06
Orifice	mm	6
Threaded connection		¾" NPT
Weight	Kg	1,2

Membrane Features

Density (ISO 2781)	g/cm³	1,06±0,02
Hardness (ISO 53505)	Shore A	60±5
Tensile strength	N/mm²	> 10,0
Tear resistance	N/mm	> 4,0
Elongation (ISO 37)	%	> 400
Tension set (ISO 2285) 24h at 100% extension	%	< 5

Performances

Min. operating flow	Nm³/h	2
Max. operating flow	Nm³/h	10
Max. overload flow*	Nm³/h	15
Operating temperature	°C	0-80
Operation mode		Intermittent / continuous
Application		Municipal & industrial

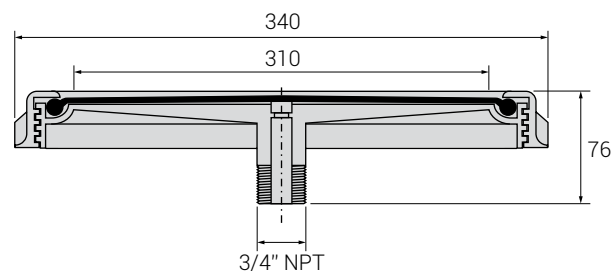
* max. 10 min. per pulizia membrane, test ecc..



Materials

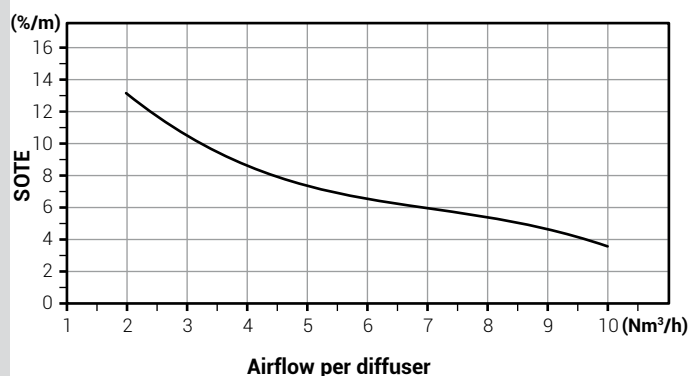
Membrane	EPDM low plasticizers
Support	PP GF 30
Ring nut	PP GF 30

Dimensions

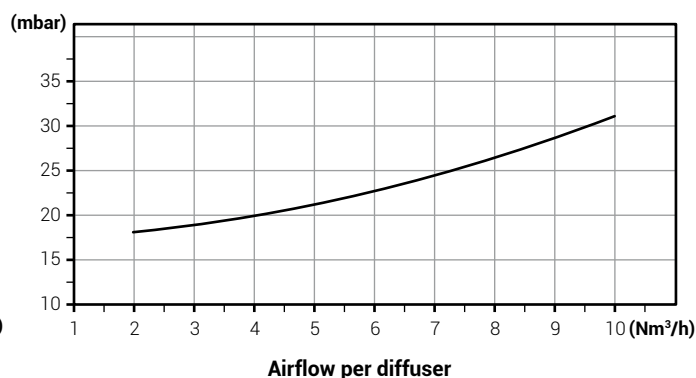


Oxygen transfer

density 5.3% - test according atv-m 209



Headloss



Tubular air diffusers

OXYTUBE 2 EPDM LP

MEMBRANE: EPDM LP - PERFORATION: FINE BUBBLE

Features		500	750	1000
Membrane thickness	mm	1,7±0,2	1,7±0,2	1,7±0,2
Active surface	m ²	0,09	0,135	0,18
Threaded connection		¾" WR	¾" WR	¾" WR
Weight	Kg	0,8	1,1	1,3



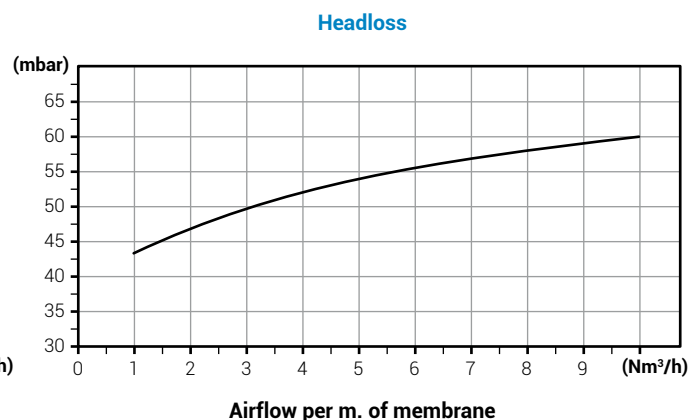
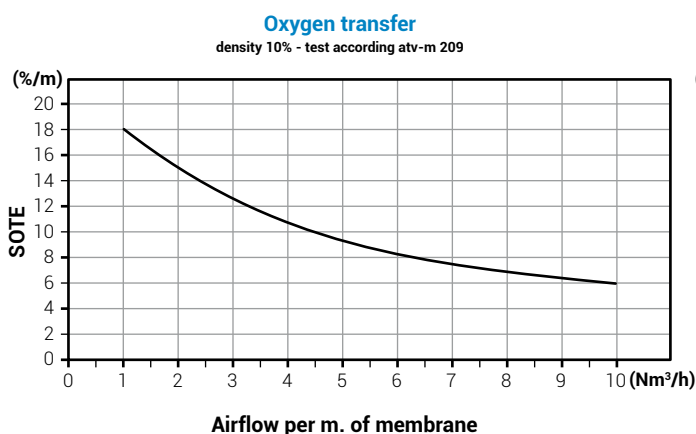
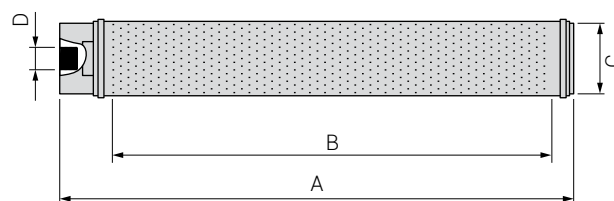
Rubber compound			
Density (ISO 2781)	g/cm ³	1,12	
Hardness (ISO 53505)	Shore A	48 ± 5	
Tensile strength	MPa	> 13,4	
Tear resistance	N/mm	> 17,6	
Elongation (ISO 37)	%	> 825	
Tension set (ISO 2285) 24h at 100% extension	%	< 5	

Materials	
Membrane	EPDM low plasticizers
Support	PP
Head	PP GF 30
Clamp	V2A (SS 1.4301 – AISI 304)
Gasket	EPDM 4 mm.

Performances		500	750	1000
Min. operating flow	Nm ³ /h	1	2	3
Max. operating flow	Nm ³ /h	6	9	12
Max. overload flow*	Nm ³ /h	10	15	20
Operating temperature	°C	0-80		
Operation mode		Intermittent / continuous		
Application		Municipal & industrial		

* max. 10 min. for membrane cleaning, test etc..

Dimensions				
	A	B	C	D
	mm	mm	mm	inch
500	560	500	63	3/4"
750	810	750	63	3/4"
100	1060	1000	63	3/4"



Tubular air diffusers

OXYTUBE 2 S

MEMBRANE: SILICONE - PERFORATION: FINE BUBBLE



Features		500	750	1000
Membrane thickness	mm	1,5±0,15	1,5±0,15	1,5±0,15
Active surface	m²	0,09	0,135	0,18
Threaded connection		¾" WR	¾" WR	¾" WR
Weight	Kg	0,8	1,1	1,3

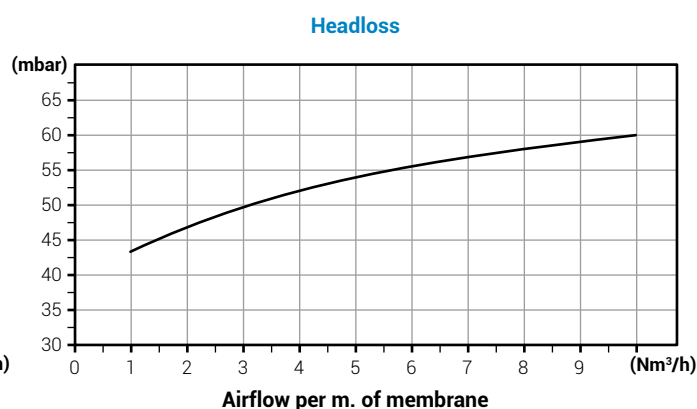
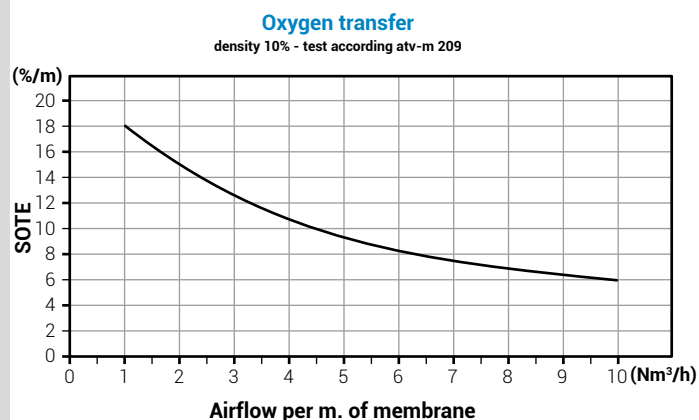
Rubber compound		
Density (ISO 2781)	g/cm³	1,16 ± 0,03
Hardness (ISO 53505)	Shore A	60 ± 5
Tensile strength	MPa	> 9,0
Tear resistance	N/mm	> 35,0
Elongation (ISO 37)	%	> 600

Materials	
Membrane	Silicone
Support	PP
Head	PP GF 30
Clamp	V2A (SS 1.4301 – AISI 304)
Gasket	Silicone 4 mm.

Performances		500	750	1000
Min. operating flow	Nm³/h	1	2	3
Max. operating flow	Nm³/h	5	8	10
Max. overload flow*	Nm³/h	10	15	20
Operating temperature	°C	0-100		
Operation mode		Intermittent / continuous		
Application		Municipal & industrial		

* max. 10 min. for membrane cleaning, test etc..

Dimensions				
	A mm	B mm	C mm	D inch
500	560	500	63	3/4"
750	810	750	63	3/4"
100	1060	1000	63	3/4"

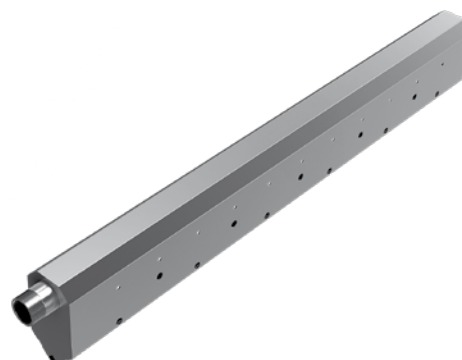


Tubular air diffusers

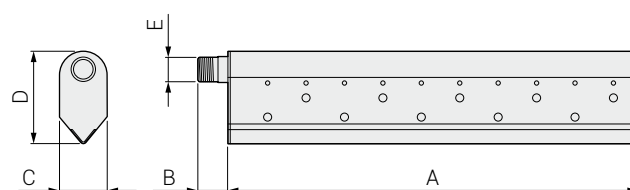
OXYINOX L305 - L610

Features		L305	L610
Bubble size		Coarse bubble	
Body material		AISI 316	
Diameter of upper holes	mm	4	
Diameter of lower holes	mm	8	
Diffuser length (connector excluded)	mm	305	610
Total length	mm	333	638
Threaded connection		3/4" NPT	

Performances		L305	L610
Min. operating flow	Nm ³ /h	3.0	7.0
Nominal flow	Nm ³ /h	18.0	40.0
Max. operating flow	Nm ³ /h	36.0	80.0
Headloss at nominal flow (immersion at 4 m)	cm	~9.5	~9.5

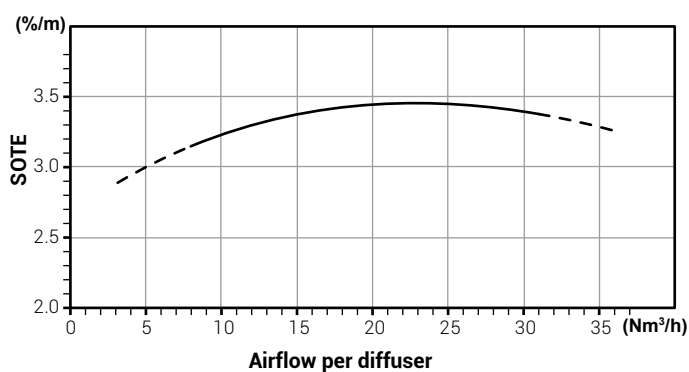


Dimensions

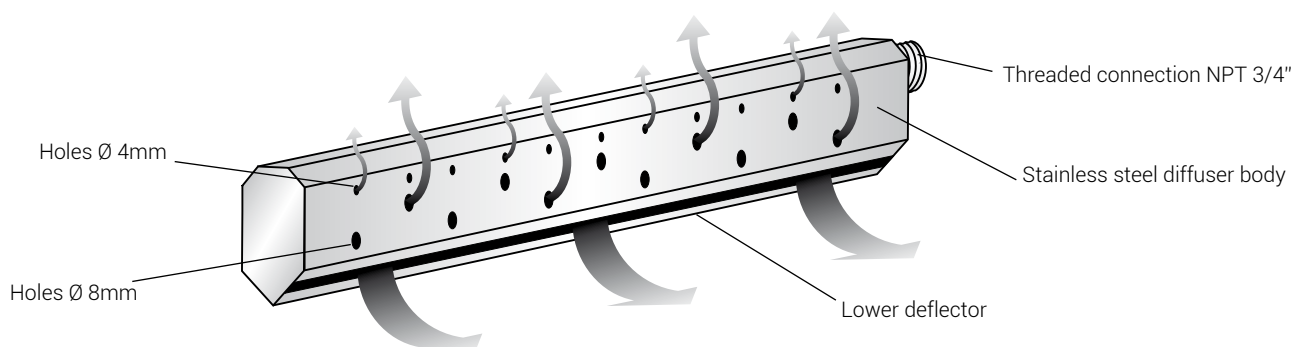
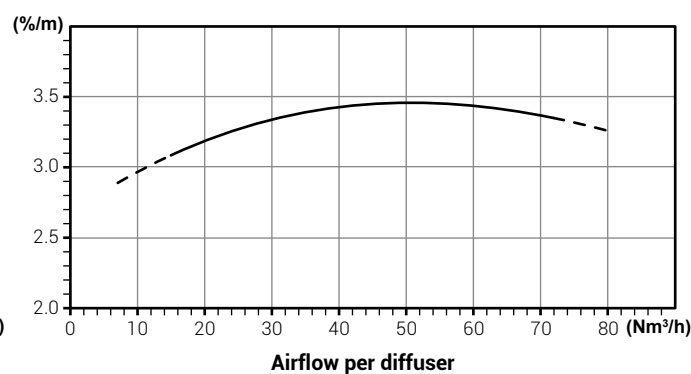


	A mm	B mm	C mm	D mm	E inch
L305	305	28	50	100	3/4" NPT
L610	610	28	50	100	3/4" NPT

OXYINOX L305



OXYINOX L610



Installations and accessories

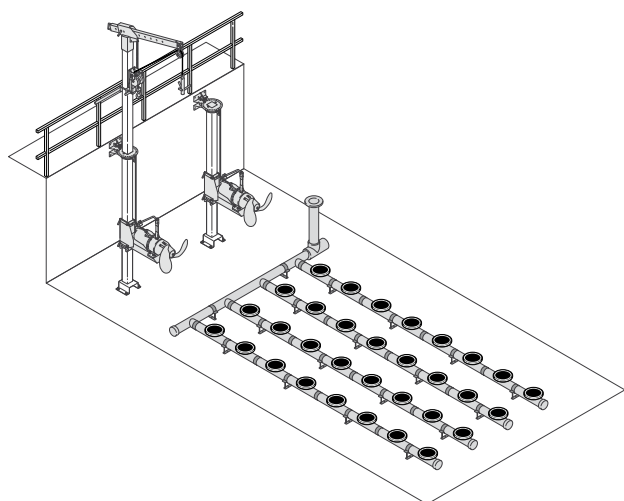
Membrane air diffusers are generally used in water treatment and purification processes where slurries have to be aerated to activate biological organic matter oxidation and nitrification processes.

They are also used in pre-aeration and aeration processes in oxidation tanks and aerobic digestion plants for industrial and civil sludges.

OXYPLATE

ZENIT is able to design and build complete aeration systems comprising disc-shaped diffusers and preassembled PVC air distribution networks.

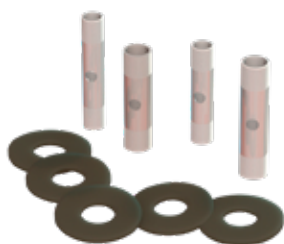
The high degree of standardisation and the use of special components manufactured by ZENIT itself allow the construction of simple, reliable, quick-to-install systems which are surprisingly inexpensive in spite of the use of top-quality materials such as PVC PN10 pipelines and stainless steel mounts.



To facilitate the installation and servicing of its diffuser systems, Zenit has produced a series of tools that make every procedure quick and effective.

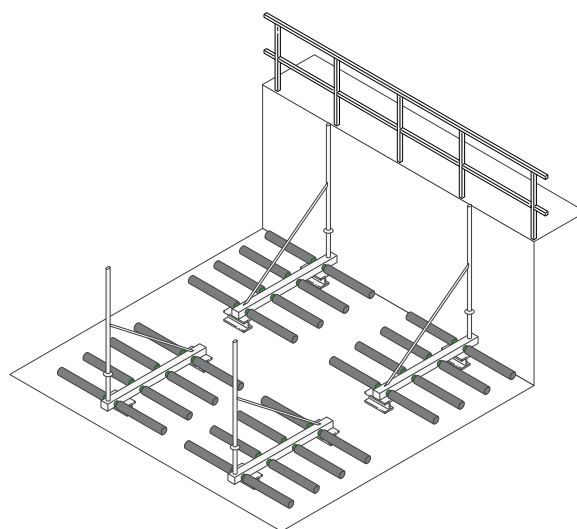


OXYTUBE



Membranes made of different materials are available for different applications:

- EPDM LP with low plasticiser content (<15%) for civil wastewater with some industrial input and industrial wastewater with low fat, oil and hydrocarbon content. Maximum operating temperature 80 °C;
- SILICONE for industrial wastewater with high fat and hydrocarbon content. Maximum operating temperature 100°C;
- Stainless steel connectors for installation of diffusers in pairs facing each other on square manifold of 80x80 mm or 100x100 mm.
- Adaptors for manifolds with ready-made holes.



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