



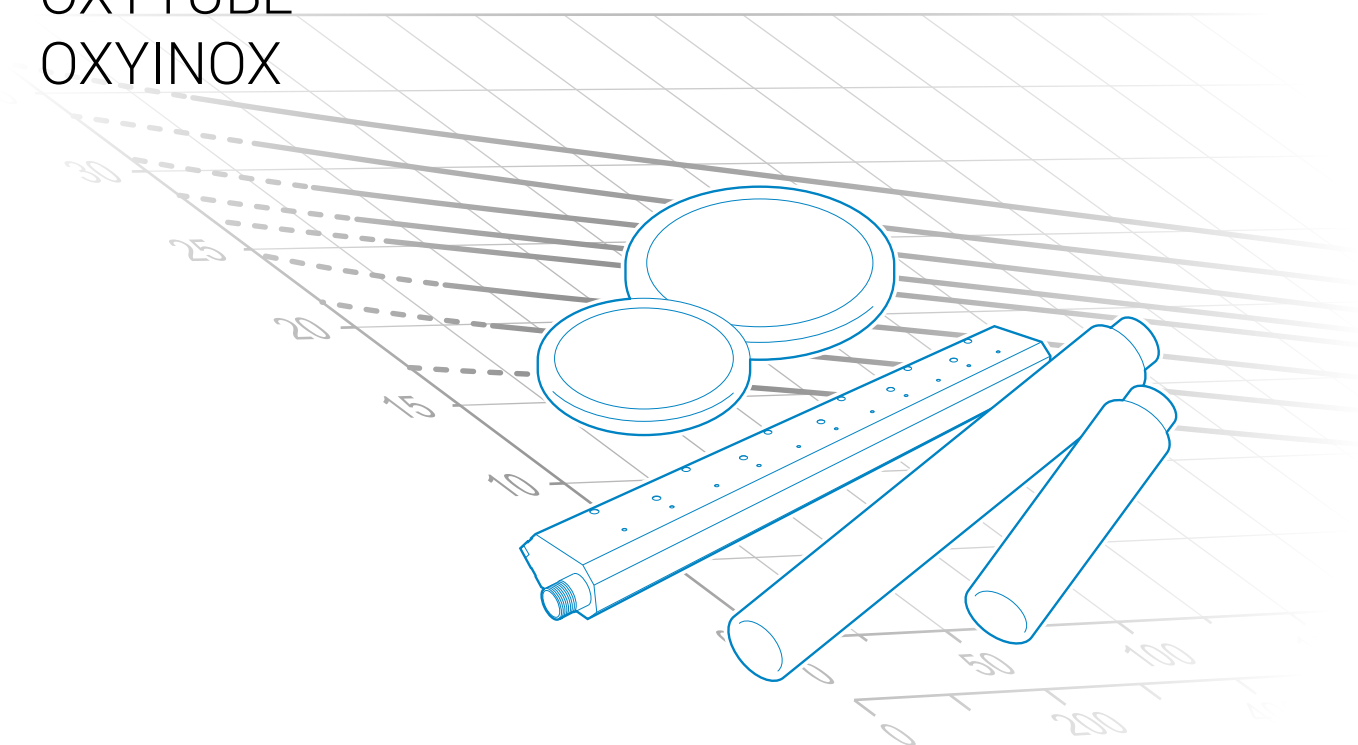
water solutions

# OXY series

OXYPLATE

OXYTUBE

OXYINOX



D A T A   B O O K L E T





water solutions

# OXY series

OXYPLATE

OXYTUBE

OXYINOX

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



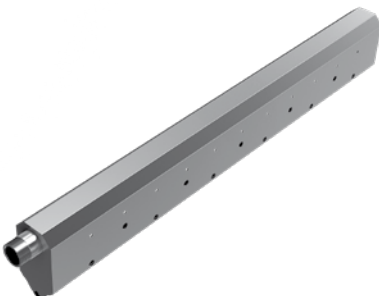
#### OXYTUBE 2-500 - OXYTUBE 2-750 - OXYTUBE 2-1000

page 9

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 <sup>2</sup>	0,038
Orifice	mm	6
Threaded connection		¾" NPT
Weight	Kg	0,7

### Membrane Features

Density (ISO 2781)	g/cm <sup>3</sup>	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 <sup>3</sup> /h	2
Max. operating flow	Nm <sup>3</sup> /h	6
Max. overload flow*	Nm <sup>3</sup> /h	10
Operating temperature	°C	0-80
Operation mode		Intermittent / continuous
Application		Municipal & industrial

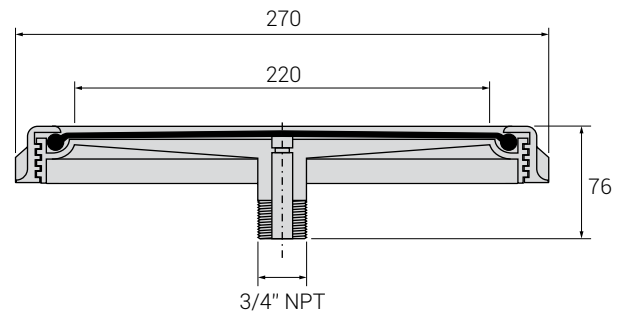
\* max. 10 min. for membrane cleaning, test etc..



### Materials

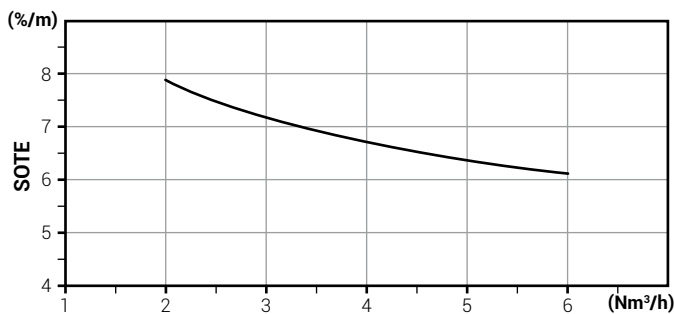
Membrane	EPDM low plasticizers
Support	PP GF 30
Ring nut	PP GF 30

### Dimensions



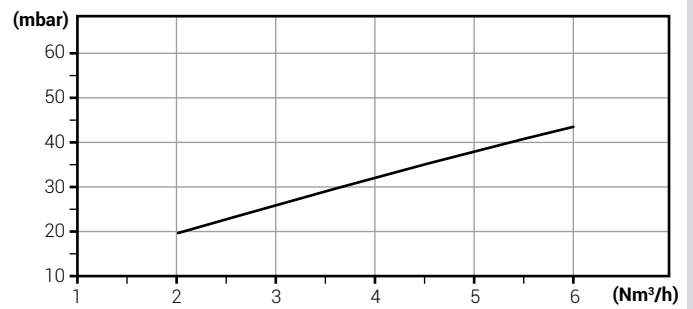
### Oxygen transfer

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 <sup>2</sup>	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 <sup>3</sup>	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

### Materials

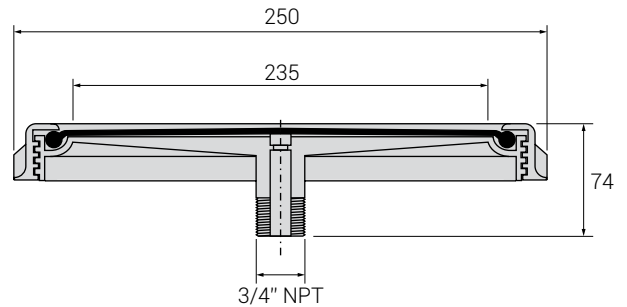
Membrane	EPDM LP
Support	PP
Ring nut	PP

### Performances

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

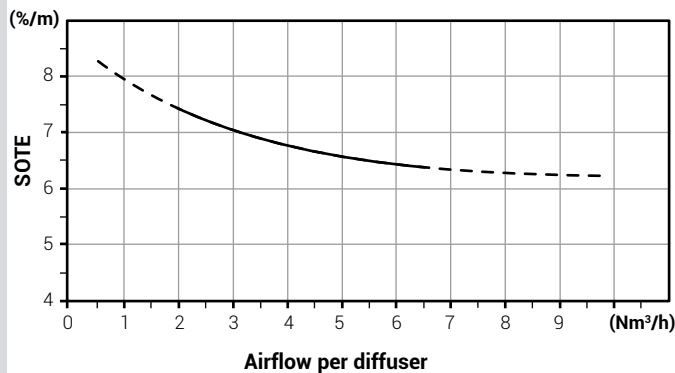
\* max. 10 min. for membrane cleaning, test, etc.

### Dimensions

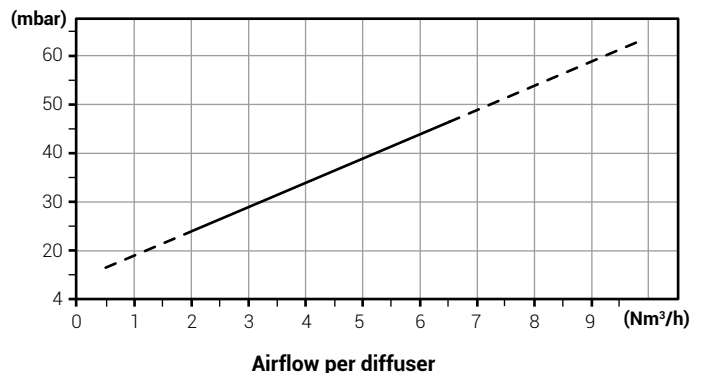


### Oxygen transfer

density 7.6% - test according atv-m 209



### Headloss



\* Data refers to the section of 10000g of air according to ASCE (AWA-261(8006), DIN 2002, EN 12083 and (2003) 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 <sup>2</sup>	0,038
Orifice	mm	6
Threaded connection		¾" NPT
Weight	Kg	0,7



### Membrane Features

Density (ISO 2781)	g/cm <sup>3</sup>	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

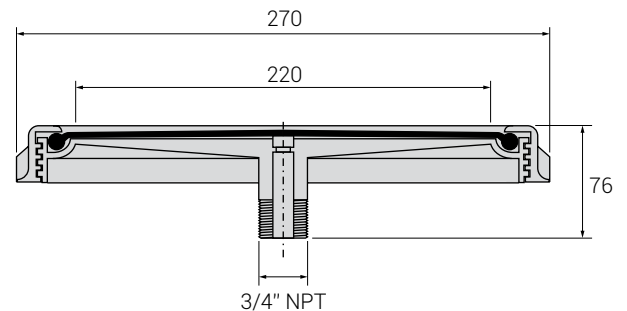
Membrane	Silicone
Support	PP GF 30
Ring nut	PP GF 30

### Performances

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

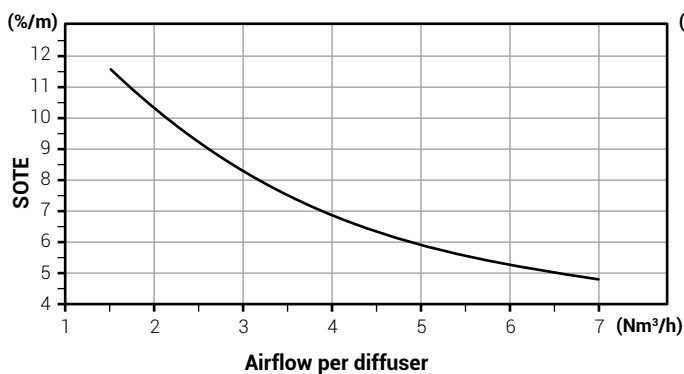
\* max. 10 min. for membrane cleaning, test etc..

### Dimensions

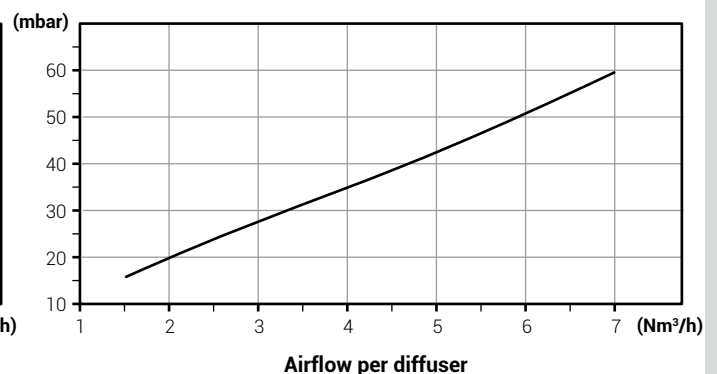


### Oxygen transfer

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	m <sup>2</sup>	0,06
Orifice	mm	6
Threaded connection		¾" NPT
Weight	Kg	1,2



### Membrane Features

Density (ISO 2781)	g/cm <sup>3</sup>	1,06±0,02
Hardness (ISO 53505)	Shore A	60±5
Tensile strength	N/mm <sup>2</sup>	> 10,0
Tear resistance	N/mm	> 4,0
Elongation (ISO 37)	%	> 400
Tension set (ISO 2285) 24h at 100% extension	%	< 5

### Materials

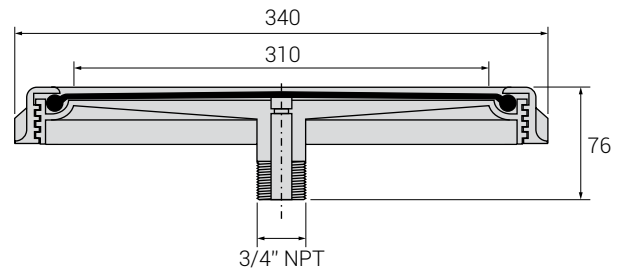
Membrane	EPDM low plasticizers
Support	PP GF 30
Ring nut	PP GF 30

### Performances

Min. operating flow	Nm <sup>3</sup> /h	2
Max. operating flow	Nm <sup>3</sup> /h	10
Max. overload flow*	Nm <sup>3</sup> /h	15
Operating temperature	°C	0-80
Operation mode		Intermittent / continuous
Application		Municipal & industrial

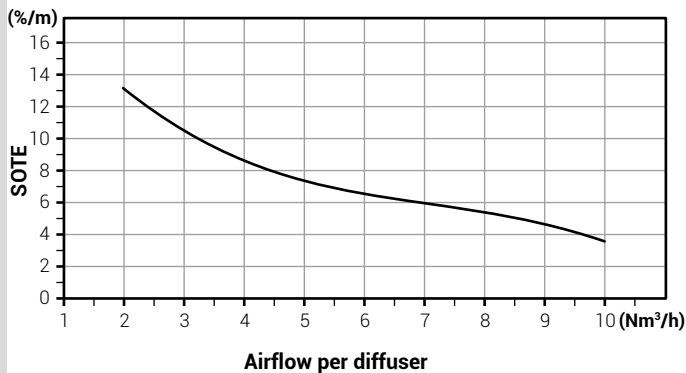
\* max. 10 min. per pulizia membrane, test ecc..

### Dimensions

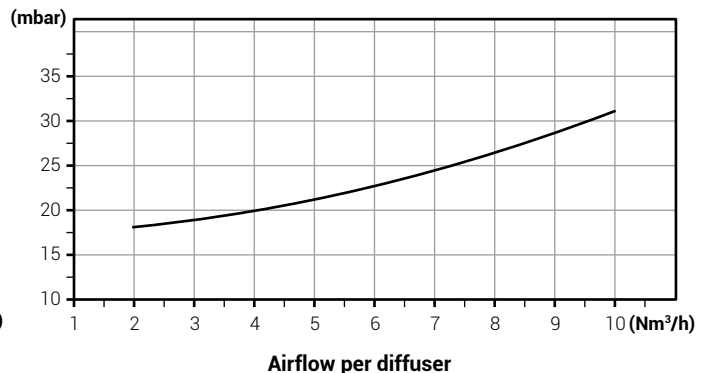


### Oxygen transfer

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 <sup>2</sup>	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 <sup>3</sup>	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

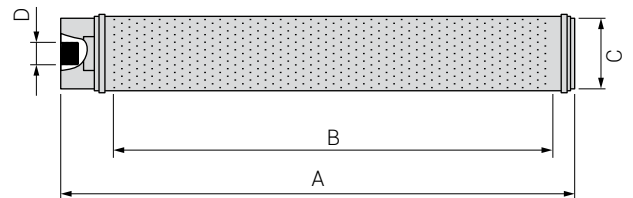
### Materials

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

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

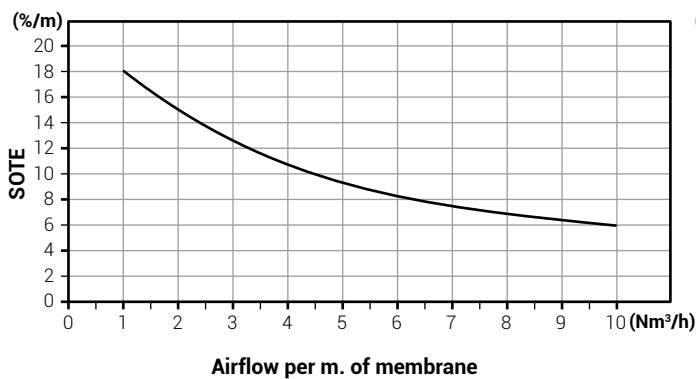
### Dimensions



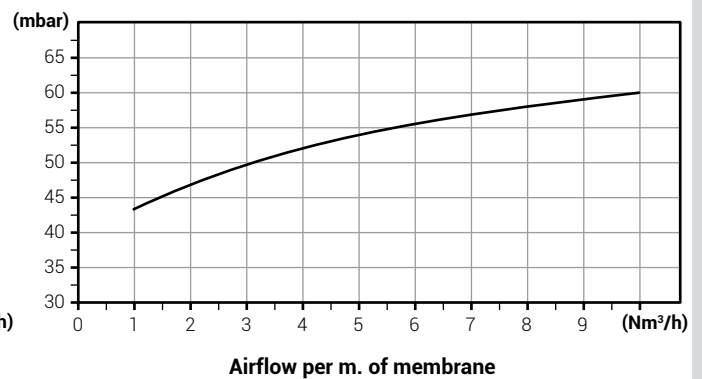
	A mm	B mm	C mm	D inch
500	560	500	63	3/4"
750	810	750	63	3/4"
100	1060	1000	63	3/4"

### Oxygen transfer

density 10% - test according atv-m 209



### Headloss



## 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	m <sup>2</sup>	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 <sup>3</sup>	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

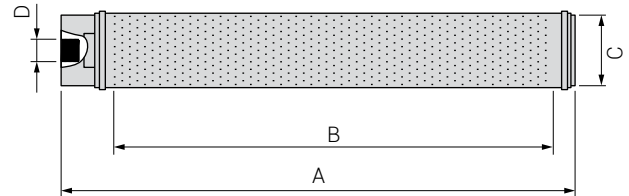
Membrane	Silicone
Support	PP
Head	PP GF 30
Clamp	V2A (SS 1.4301 – AISI 304)
Gasket	Silicone 4 mm.

### Performances

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

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

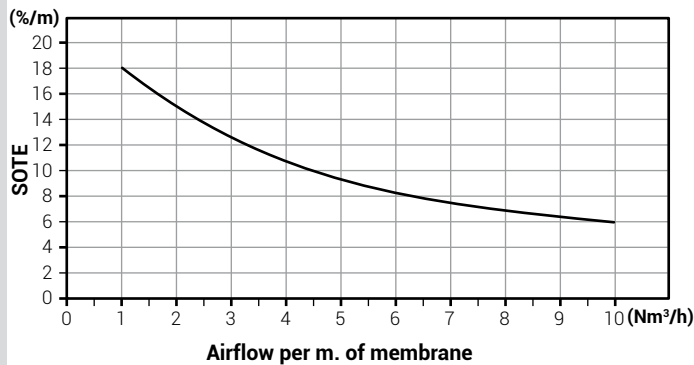
### Dimensions



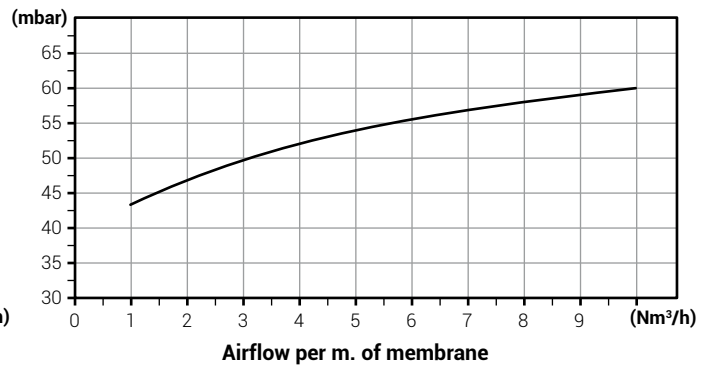
	A	B	C	D
	mm	mm	mm	inch
500	560	500	63	3/4"
750	810	750	63	3/4"
100	1060	1000	63	3/4"

### Oxygen transfer

density 10% - test according atv-m 209

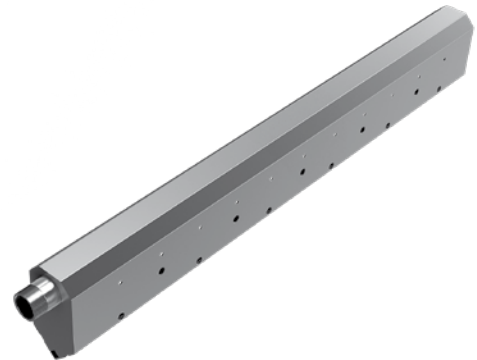


### Headloss



**Tubular air diffusers**

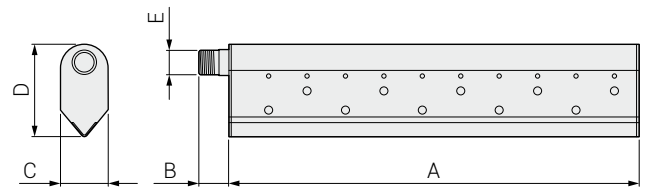
# OXYINOX L305 - L610



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	

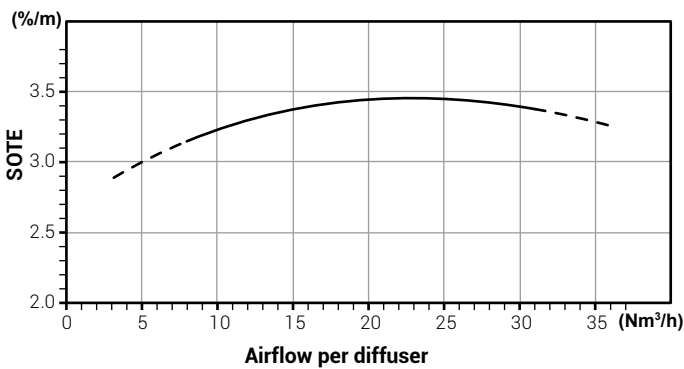
Performances		L305	L610
Min. operating flow	Nm <sup>3</sup> /h	3.0	7.0
Nominal flow	Nm <sup>3</sup> /h	18.0	40.0
Max. operating flow	Nm <sup>3</sup> /h	36.0	80.0
Headloss at nominal flow (immersion at 4 m)	cm	~9.5	~9.5

**Dimensions**

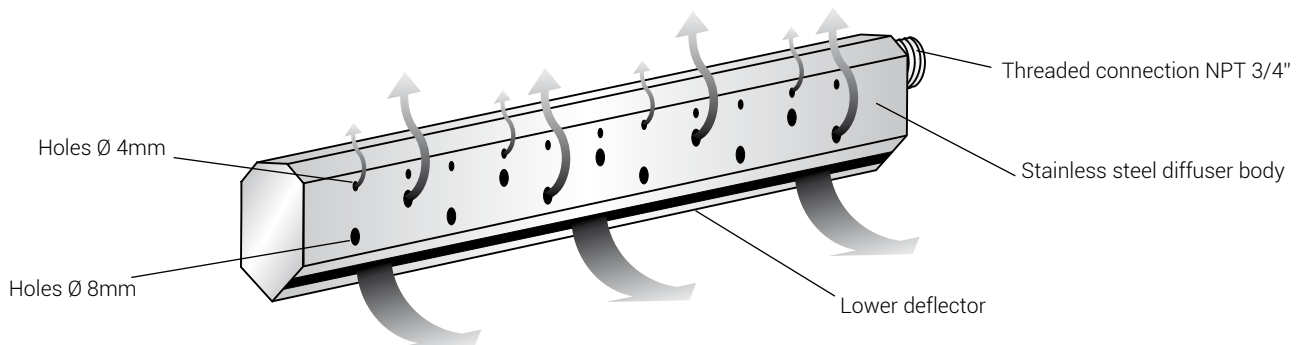
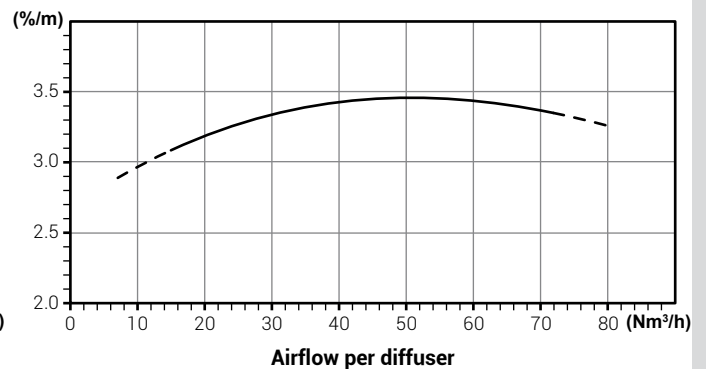


	A mm	B mm	C mm	D mm	E inch
<b>L305</b>	305	28	50	100	3/4" NPT
<b>L610</b>	610	28	50	100	3/4" NPT

**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.

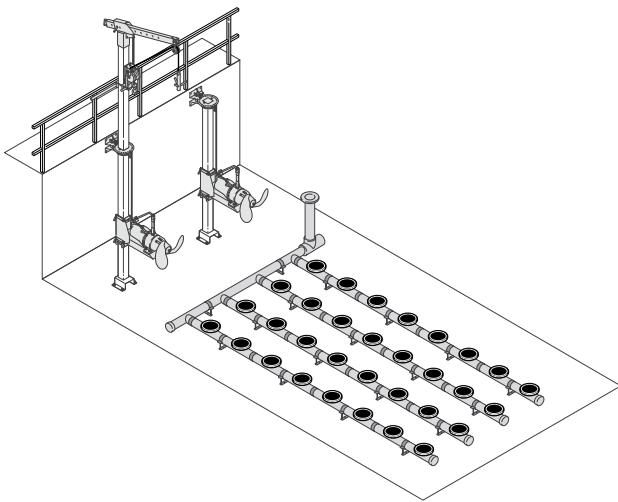
### OXYPLATE

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.

