

# DSA 适用于严苛的工况

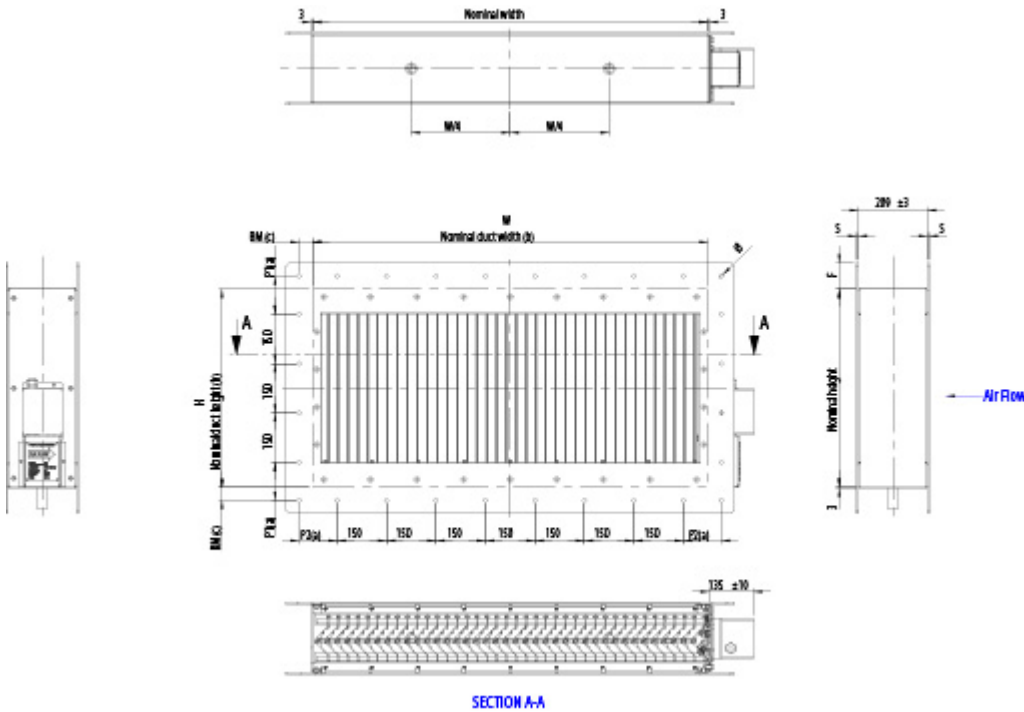


## 概览

- 液滴和水气的分离效率高
- 性能通过了独立实验室模拟雨水测试（根据 EN 13030 测试）
- 可根据客户需求量身定制尺寸和设计，可用于模块化构造
- 适用于壁式和管道式安装
- 无需特殊维护
- ATEX 认证组件 II 2 G/D EEx e II T3
- 加热容量  $2.5 \text{ kW/m}^2 - 3.7 \text{ kW/m}^2$
- DSA 的工作温度  $-50 \text{ }^\circ\text{C} - +50 \text{ }^\circ\text{C}$
- 可选用极端环境解决方案 Halton ECS

# Dimensions

## DSA general drawings



Please note:

- a) 75 mm b) Width x Height = nominal duct size (internal)
- c) Back mark BM is the distance from the inside duct to centerline hole

Frame options:

- Flange only in front
- Flange only in back
- Flange in front and back
- Without a flange

Flange drilling ISO15138 as standard.

Nominal duct Longest side (mm)	Back mark BM (mm)	Flange F (mm)	Bolt hole size Ø (mm)	Aluminium Flange thickness S (mm)	Stainless steel Flange thickness S (mm)
≤ 350	20	40	10	5	3
> 350 to ≥ 1000	30	50	12	5	3
> 1000	40	80	14	5	5

# Minimum and maximum dimensions

A minimum size for Halton DSA droplet separator is 300×300 mm (W×H). Maximum size for a single separator is 1500×1200 mm (W×H). Sizes with 50 mm divisions. Modular construction available up to 3000×2400 mm (W×H).

# Material thickness

Standard frame thickness 3 mm. Larger thicknesses available as an option.

# Material and Finishing

PART	MATERIAL	FISHING
Droplet separator	Aluminium EN AW 6060	–
Frame	Aluminium EN AW 5754	Painted RAL9010, C3 acc. standard* ISO 12944-2 as standard
Frame	Stainless steel EN 1.4404 (AISI 316L)	Painted as an option
Heating cable	Nickel-plated copper wire, silicone rubber outer jacket (ATEX certified)	–
Junction box	GRP, Eex e II T6 IP66	–

\*) C3 durability of 7-15 years. Please note about painting procedures; NORSOK C5-M and Norsok M501 available on request. Please note: Stainless steel junction box available as an option.

# Electrical data and control

Power supply 230V, 1 Phase AC.

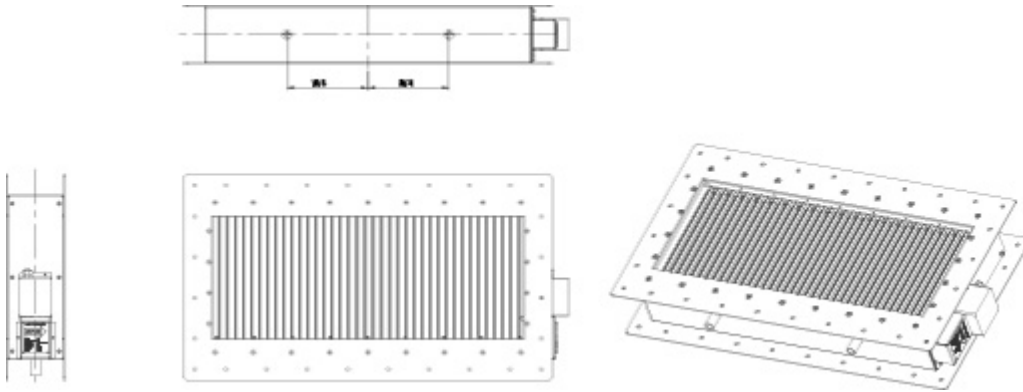
Electrical heating capacities vary between 2,5 kW/m<sup>2</sup> – 3,7 kW/m<sup>2</sup>, depending on ambient temperature. For optimal performance and control, contact Halton Marine.

# Drainage

## Drain pipe

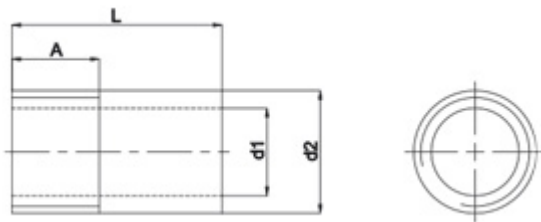
Threaded drain pipes are welded to the bottom of the droplet separator. The thread type is 1" BSPT (male).

## Drain locations



## Drain pipe sizes

Weld-on pipe	Ø (Inch)	L (mm)	A (mm)	d1 (mm)	d2 (mm)
Aluminium EN AW 6060	1	50	25	25	35
Stainless steel EN 1.4404 (AISI 316)	1	40	20	27	34



## Optional features

### Optional feature, the Extreme Conditions Solution (ECS)

When intake air is crucial during extreme icing conditions, the Halton Extreme Condition Solution (ECS) keeps the air intake open. The Halton ECS combines the DSA heated droplet separators with either shut-off or fire dampers with an additional option for filter units.

The solution can allow one or more separators to remain open and ice-free while the other separator is in defrost mode during critical atmospheric conditions.

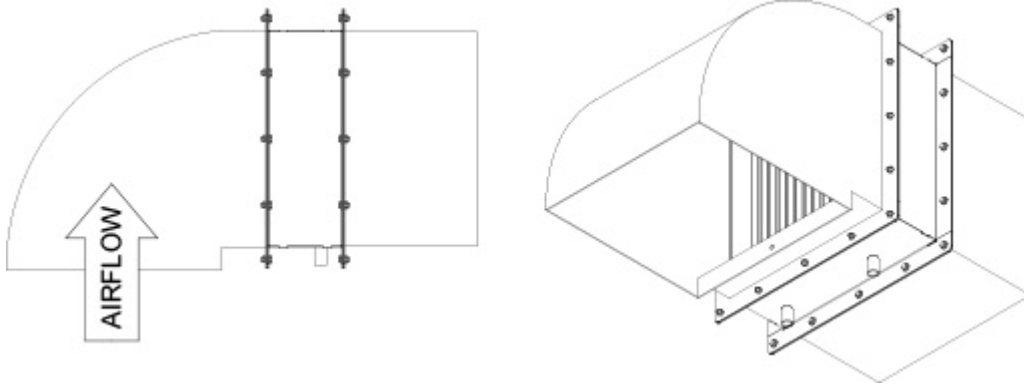
This is achieved by shutting-off a section of the DSA to allow the ice build-up to melt.

There are a few control methods available to alternate the opening/closing sequence of the ECS to ensure a free flow of unrestricted air.



## Optional feature, reducing the wind effect

Strong wind can adversely affect the performance of the droplet separator. In environments where stormy weather is regular Halton recommends using a “gooseneck” air intake with droplet separators. A gooseneck can be installed directly to a duct installation type of droplet separator.



## Optional features, filters

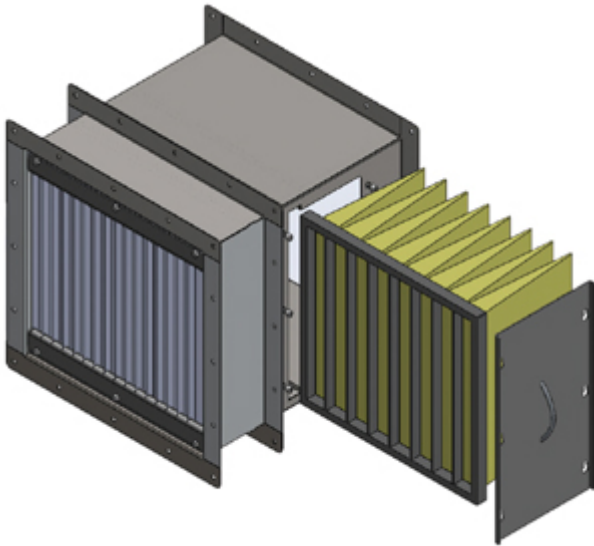
Please note: filters installed in DSA require always a separate frame.

### ISO Coarse 70% filter

Panel filters are manufactured of progressive thermally smoothed synthetic polyester having high dust holding capacity and constancy for humidity. The filters are used in general ventilation system for air purification.

## ePM10 70%, ePM2,5 65%, ePM1 50% Bag filters

The materials of the synthetic fine filters are high-quality and durable, progressive mounted synthetic fibres. The filters can be used in example for air purification of intake air.



## ATEX approved filters

Halton Marine also offers ATEX approved filters for droplet separators.

## Optional feature, installation in conjunction with damper

Halton droplet separator can be connected to a Halton Marine damper with or without a connection piece. In both cases the construction is modified to fit the damper. Connecting DSH together with a fire damper must be mentioned when ordering products. Special flanges and drilling patterns are available for all models on request. The structural flexibility of dampers and high-quality combined with a wide range of accessories (ex-actuators) and special steels, enable Halton Marine to offer tailored solutions for its customers.

Combining Halton Marine droplet separator to damper offers customers a compact solution for air intake that also saves space. The products are recommended to be connected together at Halton Marine factory.

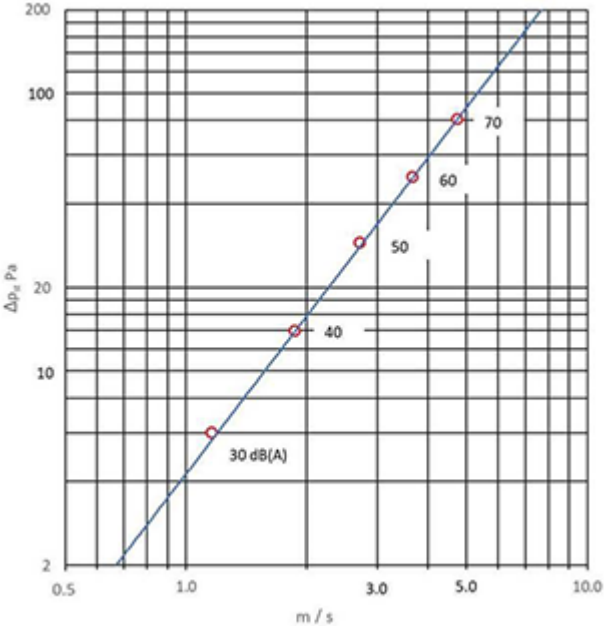
## Optional feature, weather tight hatch

Weather tight hatch (WTH) is used e.g. to shut down the intake close to the waterline in the event of rough seas. See a separate brochure on weather tight hatch called Halton WTH.

# Results

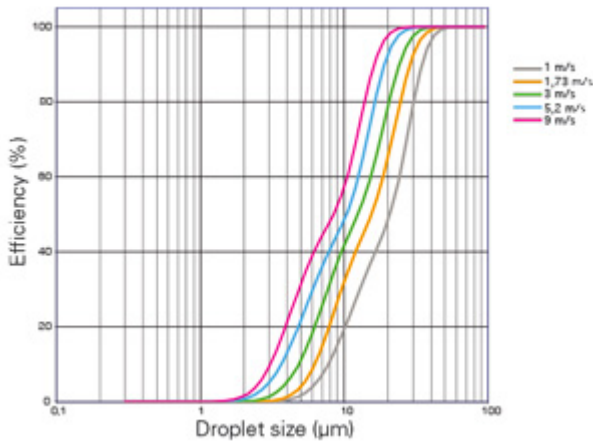
## Pressure drop and sound data LPA[DB(A)]

DSA aluminium, pitch spacing 28 mm. Velocity based on face area



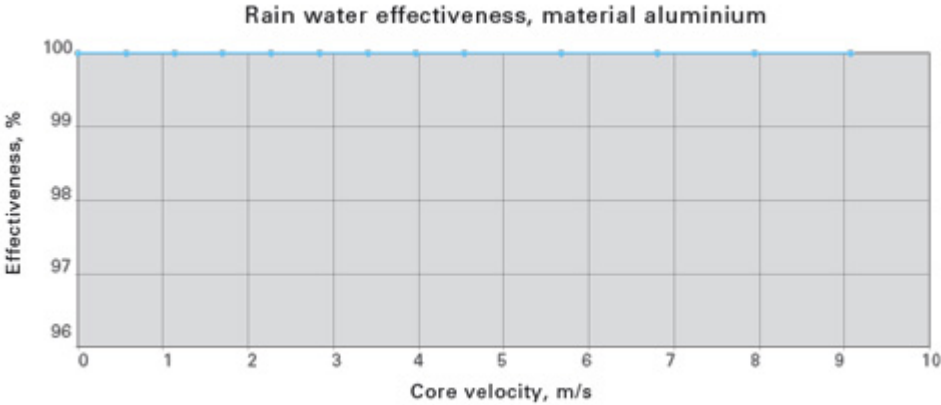
## DSA efficiency results

Single stage DSA, pitch spacing 28 mm



# Performance data

Effectiveness for removal of simulated rain  
EN 13030:2001  
Rainfall rate: 75 (l/h)/m<sup>2</sup>, (75 mm/h)  
Vertical installation



# Weights

Weights of DSA including frame, 1 flange, aluminium (KG), Pitch spacing 28 mm



H/ Height	B/ Width (mm)																	
	mm	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100
300	19	21	23	25	28	30	31	34	36	38	40	42	44	46	48	59	61	
350	20	23	25	27	30	32	34	36	38	40	43	45	47	49	51	62	65	
400	22	25	27	29	32	34	36	39	41	43	45	48	50	52	55	66	69	
450	24	27	29	31	34	36	39	41	44	46	48	51	53	56	58	70	73	
500	26	28	31	33	36	39	41	44	46	48	51	54	56	59	61	73	76	
550	27	30	33	35	38	41	43	46	49	51	54	57	59	62	65	77	80	
600	29	32	35	37	40	43	46	49	51	54	57	60	62	65	68	81	84	
650	31	34	37	39	42	45	48	51	54	57	60	63	65	68	71	84	88	
700	32	35	39	41	44	48	50	54	57	59	63	66	68	72	75	88	92	
750	34	37	41	43	47	50	53	56	59	62	65	69	71	75	78	92	95	
800	35	39	42	45	49	52	55	58	62	65	68	72	74	78	81	95	99	
850	37	41	44	47	51	54	57	61	65	67	71	75	77	81	85	99	103	
900	39	42	46	49	53	57	60	63	67	70	74	78	81	84	88	103	107	
950	40	44	48	51	55	59	62	66	70	73	77	81	84	88	92	106	111	
1000	42	46	50	53	57	61	64	68	72	75	80	84	87	91	95	110	115	
1050	51	56	60	64	68	73	76	81	85	89	93	98	101	106	110	114	118	
1100	53	58	62	66	71	75	79	84	88	92	96	101	105	109	114	117	122	
1150	55	60	64	68	73	78	81	86	91	95	99	104	108	113	118	121	126	
1200	57	62	67	70	75	80	84	89	94	98	103	107	111	116	121	125	130	

The weights on the table are indicative and do not include a filter and damper.

Consult Halton Marine for weights for different types of configurations and weights for modular constructions.

A minimum size for Halton DSA droplet separator is 300×300 mm (W×H). Maximum size for a single separator is 1500×1200 mm (W×H). Sizes with 50 mm divisions. Modular construction available up to 3000×2300 mm (W×H).

**Product code**

**DSA product code**

DSA ver 4.1					
<b>(S)=Model</b>					
(A) Single W1H1					
(B) Side by side W2H2					
(C) One on the other W1H2					
(D) Two by two W2H2					
<b>(W)=Width</b>					
300-1500 mm per module, max 2×2 modules					
<b>(H)=Height</b>					
300-1200 mm per module, max 2×2 modules					
<b>Specifics and accessories</b>					
<b>(MP)=Module</b>					
(M1) Left upper module					
(M1) Left upper module					
(M2) Right upper module					
(M3) Left lower module					
<b>(FM)=Frame Material</b>					
(AS) Stainless steel (EN 1.4404)					
(LS) Stainless steel (EN 1.4432)					
(AL) Aluminium EN AW 5754 (RAL9010 default paint)					
<b>(SM)=Separator Material</b>					
(AS) Stainless steel (EN 1.4404)					
(AL) Aluminium EN AW 6060					
<b>(FT)=Frame type</b>					
(FD) Flange both sides (double)					
(FF) Flange in front (front)					
(FB) Flange in back (back)					
<b>(EX)=Safe area</b>					
(N) No					

(Y) Yes									
<b>(ZT)=ETO Processing</b>									
(Y) Yes									
(N) No									
<b>AC=Accessories</b>									
<b>(MD) Manometric drain trap</b>									
Code example									
DSA/A-300-300,MP=M1,FM=AL,SM=AL,FT=FD,EX=Y,ZT=N,AC=MD									