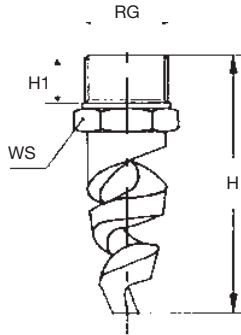


FULL CONE NOZZLES

E



SPIRAL NOZZLES

Spiral nozzles work on the impact principle, by deflection of a water stream onto a spiral profiled surface which provides the desired spray angle.

The spray angle value is maintained even at low pressure and when spraying high viscosity liquids.

While the droplet spray distribution is not comparable to the one provided by a standard full cone nozzle, the fact that a whirling vane is not required makes them virtually clog-free in most cases. Since spiral nozzles work on the impact principle and have no inherent turbulence losses, they produce faster and smaller droplets as compared to a standard full cone nozzle.

Capacity values on a grey background should be obtained with metal nozzles only, plastic materials being too weak to assure structural nozzle resistance.

See next page for materials, applications and assembly fittings.

Materials **B31** AISI 316L Stainless steel  
**T1** Brass

The two above materials are usually available in stock, while several other materials as listed on page 25 can be obtained on request.

Code	RG inch	D mm	D1 mm	Capacity at different pressure values (lpm) (bar)								Dimensions mm		
				0.7	1.0	2.0	3.0	5.0	7.0	10	H	H1	WS	
60°	1/4	2.4	2.4	2.66	3.18	4.49	5.50	7.10	8.40	10.0	45	12	14	
		4.0	3.2	7.54	9.01	12.7	15.6	20.1	23.8	28.5				
	3/8	4.8	3.2	11.4	13.6	19.2	23.5	30.3	35.9	42.9	48	14	19	
		6.4	3.2	20.0	24.0	33.9	41.5	53.6	63.4	75.8				
		7.9	3.2	31.2	37.3	52.7	64.6	83.4	99.0	118				
	1/2	9.5	4.7	45.6	54.5	77.1	94.4	122	144	172	64	18	22	
		11.1	4.7	61.8	73.9	105	128	165	196	234				
	3/4	12.7	4.7	79.7	95.3	135	165	213	252	301	70	19	27	
	1	15.9	6.3	126	150	212	260	336	397	475	92	26	34	
	1 1/2	22.2	7.9	245	293	414	507	655	774	926	111	27	50	
90°	1/4	2.4	2.4	2.66	3.18	4.49	5.50	7.10	8.40	10.0	45	12	14	
		3.2	3.2	4.83	5.77	8.16	10.0	12.9	15.3	18.3				
		4.0	3.2	7.54	9.01	12.7	15.6	20.1	23.8	28.5				
	3/8	4.8	3.2	11.4	13.6	19.2	23.5	30.3	35.9	42.9	48	14	19	
		5.6	3.9	15.3	18.3	25.9	31.7	40.9	48.4	57.9				
		6.4	4.8	20.0	24.0	33.9	41.5	53.6	63.4	75.8				
		7.9	5.5	31.2	37.3	52.7	64.6	83.4	99.0	118				
		9.5	3.3	45.6	54.5	77.1	94.4	122	144	172	64	18	22	
	1/2	11.1	3.7	61.8	73.9	105	128	165	196	234				
		12.7	4.7	79.7	95.3	135	165	213	252	301	70	19	27	
	3/4	19.0	6.3	126	150	212	260	336	397	475	92	26	34	
	1	23.0	6.3	180	215	304	372	480	568	679				
	2	34.9	11.1	527	629	890	1090	1407	1665	1990	149	31	65	
		44.5	14.3	985	1178	1666	2040	2633	3116	3724	219	42	89	
		50.8		1290	1541	2180	2670	3447	4078	4874				

Operation with pressure values and capacities shown on the grey background recommended for cast or machined metal nozzles only.



The picture shows the inside of a spiral nozzle with a completely free passage, without any internal vane.

## FULL CONE NOZZLES

E

## SPIRAL NOZZLES

Code	RG inch	D mm	D1 mm	Capacity at different pressure values								Dimensions mm					
				(lpm) (bar)								H	H1	WS			
				0.7	1.0	2.0	3.0	5.0	7.0	10							
120°																	
<b>EBW 1550 xx</b>	1/4	2.4	2.4	2.66	3.18	4.49	5.50	7.10	8.40	10.0	45	12	14				
<b>EBW 2100 xx</b>		3.2	3.2	4.83	5.77	8.16	10.0	12.9	15.3	18.3							
<b>EBW 2156 xx</b>		4.0	3.2	7.54	9.01	12.7	15.6	20.1	23.8	28.5							
<b>ECW 2156 xx</b>	3/8	4.0	3.2	7.54	9.01	12.7	15.6	20.1	23.8	28.5	48	14	19				
<b>ECW 2230 xx</b>		4.8	3.2	11.4	13.6	19.2	23.5	30.3	35.9	42.9							
<b>ECW 2317 xx</b>		5.6	4.0	15.3	18.3	25.9	31.7	40.9	48.4	57.9							
<b>ECW 2410 xx</b>		6.4	4.0	20.0	24.0	33.9	41.5	53.6	63.4	75.8							
<b>ECW 2640 xx</b>		7.9	4.0	31.2	37.3	52.7	64.6	83.4	98.7	118							
<b>EDW 2940 xx</b>	1/2	9.5	4.8	45.6	54.5	77.1	94.4	122	144	172	64	18	22				
<b>EDW 3104 xx</b>		9.7	4.8	50.2	60.0	84.9	104	134	159	190							
<b>EDW 3128 xx</b>		11.1	4.8	61.8	73.9	105	128	165	196	234							
<b>EEW 3165 xx</b>	3/4	12.7	4.8	79.7	95.3	135	165	213	252	301	70	19	27				
<b>EFW 3260 xx</b>	1	15.9	6.3	126	150	212	260	336	397	475	92	26	34				
<b>EFW 3372 xx</b>		19.0		180	215	304	372	480	568	679							
<b>EHW 3507 xx</b>	1 1/2	22.2	7.9	245	293	414	507	655	774	926	111	27	50				
<b>EHW 3663 xx</b>		25.4		320	383	541	663	856	1013	1210							
<b>EHW 3747 xx</b>		28.6		361	431	610	747	964	1141	1364							
<b>EKW 4109 xx</b>	2	34.9	11.1	527	629	890	1090	1407	1665	1990	149	31	65				
<b>EKW 4139 xx</b>		38.1		671	803	1136	1391	1796	2125	2540							
<b>EMW 4204 xx</b>	3	44.5	14.3	985	1178	1666	2040	2634	3116	3725	203	35	90				
<b>EMW 4265 xx</b>		51.0		1280	1530	2164	2650	3421	4048	4838							
<b>EPW 4412 xx</b>	4	63.5	15.9	1990	2379	3364	4120	5318	6293	7522	230	40	127				
150°																	
<b>ECX 2230 xx</b>	3/8	4.8	3.2	11.4	13.6	19.2	23.5	30.3	35.9	42.9	48	14	19				
<b>ECX 2317 xx</b>		5.6	4.0	15.3	18.3	25.9	31.7	40.9	48.4	57.9							
<b>ECX 2410 xx</b>		6.4		20.0	24.0	33.9	41.5	53.6	63.4	75.8							
<b>ECX 2640 xx</b>		7.9		31.2	37.3	52.7	64.6	83.4	98.7	118							
<b>EDX 2940 xx</b>	1/2	9.5	4.8	45.6	54.5	77.1	94.4	122	144	172	64	18	22				
<b>EDX 3128 xx</b>		11.1		61.8	73.9	105	128	165	196	234							
<b>EEX 3165 xx</b>	3/4	12.7	4.8	79.7	95.3	135	165	213	252	301	70	19	27				
<b>EFX 3260 xx</b>	1	15.9	6.3	126	150	212	260	336	397	475	92	26	34				
<b>EFX 3372 xx</b>		19.0		180	215	304	372	480	568	679							
<b>EHX 3507 xx</b>	1 1/2	22.2	7.9	245	293	414	507	655	774	926	111	27	50				
<b>EHX 3663 xx</b>		25.4		320	383	541	663	856	1013	1210							
<b>EHX 3747 xx</b>		28.6		361	431	610	747	964	1141	1364							
<b>EKX 4109 xx</b>	2	34.9	11.1	527	629	890	1090	1407	1665	1990	149	31	65				
<b>EKX 4139 xx</b>		38.1		671	803	1136	1391	1796	2125	2540							
180°																	
<b>EBZ 2156 xx</b>	1/4	4.0	2.5	7.54	9.01	12.7	15.6	20.1	23.8	28.5	45	12	14				
<b>ECZ 2230 xx</b>	3/8	4.8	3.2	11.4	13.6	19.2	23.5	30.3	35.9	42.9	48	14	19				
<b>ECZ 2317 xx</b>		5.6	4.0	15.3	18.3	25.9	31.7	40.9	48.4	57.9							
<b>ECZ 2410 xx</b>		6.4		20.0	24.0	33.9	41.5	53.6	63.4	75.8							
<b>ECZ 2640 xx</b>		7.9		31.2	37.3	52.7	64.6	83.4	99.0	118							
<b>EDZ 2940 xx</b>	1/2	9.5	3.3	45.6	54.5	77.1	94.4	122	144	172	64	18	22				
<b>EDZ 3128 xx</b>		11.1	4.8	61.8	73.9	105	128	165	196	234							
<b>EEZ 3165 xx</b>	3/4	12.7	4.7	79.7	95.3	135	165	213	252	301	70	19	27				
<b>EFZ 3260 xx</b>	1	15.9	6.3	126	150	212	260	336	397	475	92	25	36				
<b>EFZ 3372 xx</b>		19.0		180	215	304	372	480	568	679							
<b>EHZ 3507 xx</b>	1 1/2	22.2	7.9	245	293	414	507	655	774	926	111	27	50				
<b>EHZ 3663 xx</b>		25.4		320	383	541	663	856	1013	1210							
<b>EHZ 3747 xx</b>		28.6		361	431	610	747	964	1141	1364							
<b>EKZ 4109 xx</b>	2	34.9	11.1	527	629	890	1090	1407	1665	1990	149	31	63				
<b>EKZ 4139 xx</b>		38.1		671	803	1136	1391	1796	2125	2540							



Operation with pressure values and capacities shown on the grey background recommended for cast or machined metal nozzles only.

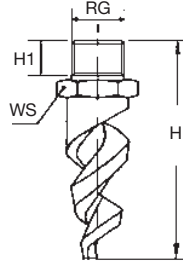
Spiral nozzles can be delivered in brass and all the plastic materials in the following list. Most types are also available from stock or with short delivery in cast 316 stainless steel. Please contact our sales offices for delivery time in a given material.

## Materials

B31	AISI 316L Stainless steel
D1	PVC
D2	Polypropylene
D8	PVDF
E1	PTFE
L8	Hastelloy C 276
T1	Brass

## FULL CONE NOZZLES

### E-X



#### SPIRAL NOZZLES/WIDE PASSAGE

E-X type nozzles feature the same design and advantages as the E-type nozzles, while the resistance to clogging is enhanced by a longer spiral pitch. The spiral pitch length is typically equal to the inlet orifice diameter, therefore any foreign particle entering the nozzle can also find a way out through the spiral opening.

Material list at the bottom of previous page.

Code	RG inch	D mm	D1 mm	Capacity at different pressure values								Dimensions mm		
				0.7	1.0	2.0	3.0	5.0	7.0	10	H	H1	WS	
120°														
<b>ECW 2230 xx Xy</b>	3/8	4.8	4.8	11.4	13.6	19.2	23.5	30.3	35.9	42.9	70	15	22	
<b>ECW 2317 xx Xy</b>		5.6	5.6	15.3	18.3	25.9	31.7	40.9	48.4	57.9				
<b>ECW 2410 xx Xy</b>		6.4	6.4	20.0	24.0	33.9	41.5	53.6	63.4	75.8				
<b>ECW 2640 xx Xy</b>		7.9	7.9	31.2	37.3	52.7	64.6	83.4	98.7	118				
<b>EDW 2940 xx Xy</b>	1/2	9.5	9.5	45.6	54.5	77.1	94.4	122	144	172	86	18	27	
<b>EDW 3128 xx Xy</b>		11.1	11.1	61.8	73.9	105	128	165	196	234				
<b>EEW 3165 xx Xy</b>	3/4	12.7	12.7	79.7	95.3	135	165	213	252	301	130	20	27	
<b>EFW 3260 xx Xy</b>	1	16.0	16.0	126	150	212	260	336	397	475	131	26	34	
<b>EFW 3372 xx Xy</b>		19.0	19.0	180	215	304	372	480	568	679	168	26	34	
<b>EHW 3507 xx Xy</b>	1 1/2	22.2	22.2	245	293	414	507	655	774	926	171	27	50	
<b>EHW 3663 xx Xy</b>		25.4	25.4	320	383	541	663	856	1013	1210				
<b>EHW 3747 xx Xy</b>		28.6	28.6	361	431	610	747	964	1141	1364	185	27	50	
<b>EKW 4109 xx Xy</b>	2	35.0	35.0	527	629	890	1090	1407	1665	1990	279	32	65	
<b>EKW 4139 xx Xy</b>		38.1	38.1	671	803	1136	1391	1796	2125	2540				
<b>EMW 4204 xx Xy</b>	3	44.5	44.5	985	1178	1666	2040	2634	3116	3725	267	32	90	
<b>EMW 4265 xx Xy</b>		51.0	51.0	1280	1530	2164	2650	3421	4048	4838				
<b>EPW 4412 xx Xy</b>	4	63.5	63.5	1990	2379	3364	4120	5318	6293	7522	293	36	127	

Operation with pressure values and capacities shown on the grey background recommended for cast or machined metal nozzles only.

#### Coding

Extra wide passage spiral nozzles are often supplied in a special design, where the nozzle has no thread and it is assembled onto a nipple by means of a retaining nut. This design is the only one possible with Silicon Carbide nozzles, while it can be obtained as an option for nozzles cast in special alloys or stainless steel.

To identify such nozzles please note the following coding

#### **EHW 3747 xx Xy**

**xx** = Material code, see material table on the previous page

**y** = Connection code / B=Bspt male thread / N=NPT male thread / F= Locknut fitting

#### SILICON CARBIDE NOZZLES

We design and supply spiral nozzles made out several types of silicon carbide, for applications where fluids containing abrasive solid particles must be sprayed and long nozzle service life is required.

Please contact our offices for more detailed information.



#### Common Applications

Chemical processes

Fire fighting

Gas cooling

Gas & smoke scrubbers