

CHAPTER 2

◆◆ Hollow Cone Nozzles



ABOUT US

We Are Here to Help

• Welcome to SPADFLOW

facing the **Challenges** of new industries and emerging markets.

• Spray Technologies

with over **Thousands of Spray Nozzle Types** SPADFLOW has become Iran's leading producer.

• From Design to Installation

with **Skilled** engineers and project managers, SPADFLOW is providing consultancy and support services.

• Knowledge and Experience

as an **Expert** on spray technology, SPADFLOW is at the forefront of production and innovation.





PRODUCT NUMBERS

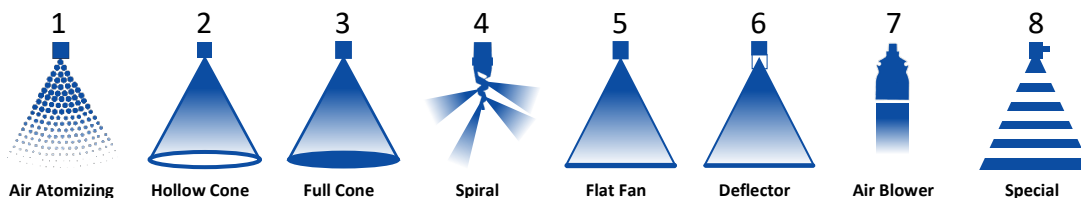
Everything You Need to Know

SPADFLOW 3L 490 70 . 060 . 038T . 3

A B C D E F

A

Nozzle Type (Spray Pattern)



B

Nozzle Series

C

Flow Rate Rank

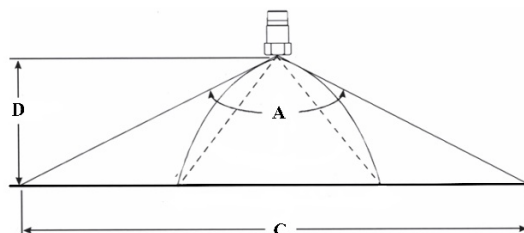
The flow rate rank is relative and depends on the respective nozzle type. The exact value is mentioned in tables on the product pages.

D

Spray Angle

Theoretical spray angle is mentioned in tables on the product pages. Actual spray angle depends on installation and alignment.

A = Theoretical Spray Angle
D = Spray Distance
C = theoretical Spray Coverage





PRODUCT NUMBERS

Everything You Need to Know

E

Connection

1/8" to 4" connections. The exact specification is mentioned in tables on the product pages.

T = BSBT Thread Type Connection

P = BSPP Thread Type Connection

N = NPT Thread Type Connection

R = Retaining Nut

F

Material

Material	Code	Material	Code
Brass	1	Polyvinylchloride	PVC
AISI 304/304L Stainless Steel	2	Polypropylene	PP
AISI 316/316L Stainless Steel	3	Polyamide	PA
AISI 310 Stainless Steel	4	Polyvinylidene fluoride	PVDF
AISI 321 Stainless Steel	5	Polytetrafluorethylene	PTFE
AISI 420 Stainless Steel	6	Polyoxymethylene	POM
Tungsten Carbide	TN	Nitrile Butadiene Rubber	NBR
Phosphor Bronze	CuSn	Poly lactic Acid	PLA
Copper	Cu	Acrylonitrile Butadiene Styrene	ABS
Titanium	TI	Nylon Polyamide	PA6
Aluminum	AL	Polycarbonate	PC

Ø B (Equivalent Bore Diameter)

Applies to elliptical discharge holes of flat fan nozzles. A cylindrical hole with a diameter A has the same surface area as the ellipse.

Ø E (Narrowest Free Cross Section)

Important Characteristics for determining the pre-filtration of a nozzle. Can be less than a due to several swirl ducts.

Conversion Formula: $K \text{ factor} \times \sqrt{P(\text{bar})} = Q (\text{l/min})$

All flow rate data in this catalogue is based on measurements with water,

Spray angle (α)	Code	Connection Size [inch]	Ø B [mm]	Ø E [mm]	Flow rate (Q) [l/min]						
					Pressure (P) [bar]						
					0.5	1.0 K factor	2.0	3.0	5.0	7.0	10.0
45°	3L 490 40 . 045	1/8"	1.25	1.25	0.57	0.76	1.00	1.18	1.44	1.65	1.90
	3L 490 60 . 045	1/4"	2.00	2.00	1.81	2.39	3.15	3.70	4.54	5.20	6.00
	3L 490 70 . 045	3/8"	2.65	2.65	3.22	4.24	5.60	6.59	8.08	9.24	10.66
	3L 490 78 . 045	1/2"	3.45	3.45	5.17	6.82	9.00	10.58	12.98	14.85	17.12
60°	3L 490 40 . 060	1/8"	1.15	1.15	0.57	0.76	1.00	1.18	1.44	1.65	1.90
	3L 490 80 . 060	3/8"	3.70	3.70	5.74	7.58	10.00	11.76	14.43	16.51	19.04
	3L 490 88 . 060	1/2"	4.65	4.65	9.19	12.13	16.00	18.82	23.08	26.41	30.46
	3L 490 96 . 060	3/4"	5.80	5.80	14.36	18.95	25.00	29.40	36.07	41.26	47.59
	3L 491 08 . 060	1"	8.15	8.15	28.72	37.89	50.00	58.80	72.14	82.53	95.18

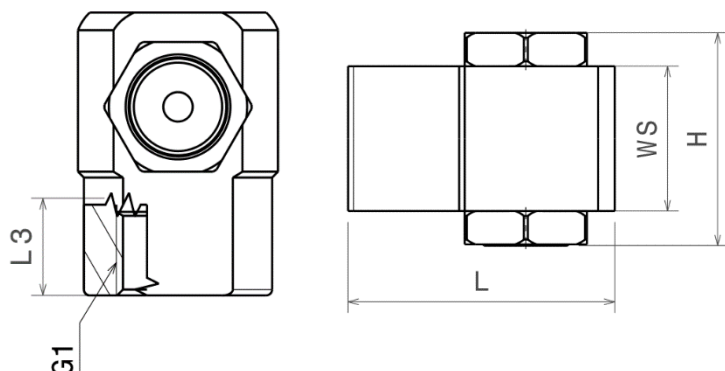
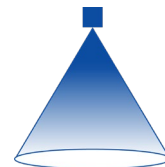
SPADFLOW spray nozzles are manufactured with the highest precision and undergo permanent quality checks. However, production-related tolerances can affect the spray angle, flow rate, droplet size and droplet distribution.



SPADFLOW 2SF 422/423

Tangential Hollow-Cone Nozzle

Webpage
+ STP



G1	Thread Type			Dimensions [mm]				Weight
	BSPT	BSPP	NPT	L	L3	H	WS	
1/4"	014T	014P	014N	24.0	9.7	22.0	15.0	44 gr
3/8"	038T	038P	038N	34.0	10.1	25.0	20.0	101 gr
1/2"	012T	012P	012N	48.0	13.2	38.0	30.0	370 gr
3/4"	034T	034P	034N	58.0	14.5	50.0	40.0	830 gr
1"	100T	100P	100N	61.0	16.8	52.0	42.0	1581 gr

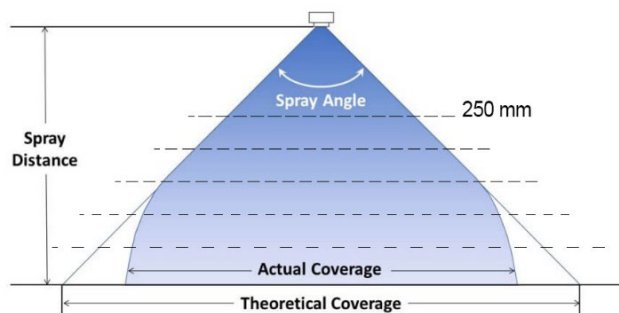
Material*	Code
Brass	1
S.S.304	2
S.S.316	3

Properties:

- No Whirl Vanes
- Non-Clogging Nozzle
- Uniform Spray
- Full Cone Pattern is Available

* Different materials are available upon request

α	Spray coverage
	@ 250 mm
60°	225
90°	380-390
120°	680



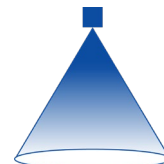
Spray angle (α)	Code	Connection [inch]	$\varnothing$ B [mm]	$\varnothing$ E [mm]	Flow rate [l/min]					
					P [bar]					
					0.5	1.0 K factor	2.0	3.0	5.0	10.0
60°	2SF 422 64 . 060	3/8"	3.00	3.00	2.00	2.83	4.00	4.90	6.32	8.94
	2SF 422 40 . 090	1/4"	1.40	1.40	0.50	0.71	1.00	1.22	1.58	2.24
	2SF 422 48 . 090	1/4"	1.85	1.85	0.80	1.13	1.60	1.96	2.53	3.58
	2SF 422 56 . 090	1/4"	2.25	2.25	1.25	1.77	2.50	3.06	3.95	5.59
	2SF 422 60 . 090	3/8"	2.55	2.55	1.57	2.23	3.15	3.86	4.98	7.04
	2SF 422 64 . 090	3/8"	2.90	2.90	2.00	2.83	4.00	4.90	6.32	8.94
	2SF 422 72 . 090	3/8"	3.70	3.70	3.15	4.45	6.30	7.72	9.96	14.09
	2SF 422 76 . 090	3/8"	4.15	4.15	4.00	5.66	8.00	9.80	12.65	17.89
	2SF 422 80 . 090	3/8"	4.65	4.65	5.00	7.07	10.00	12.25	15.81	22.36
	2SF 422 84 . 090	3/8"	5.30	5.30	6.25	8.84	12.50	15.31	19.76	27.95
	2SF 422 88 . 090	3/8"	5.85	6.00	8.00	11.31	16.00	19.60	25.30	35.78
	2SF 422 96 . 090	1/2"	8.00	8.00	12.50	17.68	25.00	30.62	39.53	55.90



SPADFLOW 2SF 422/423

Tangential Hollow-Cone Nozzle

Webpage
+ STP



Spray angle (α)	Code	Connection [inch]	Ø B [mm]	Ø E [mm]	Flow rate [l/min]					
					P [bar]					
					0.5	1.0 <i>K factor</i>	2.0	3.0	5.0	10.0
120°	2SF 422 48 . 120	1/4"	1.90	1.90	0.80	1.13	1.60	1.96	2.53	3.58
	2SF 422 56 . 120	1/4"	2.45	2.40	1.25	1.77	2.50	3.06	3.95	5.59
	2SF 422 60 . 120	3/8"	2.70	2.70	1.57	2.23	3.15	3.86	4.98	7.04
	2SF 422 72 . 120	3/8"	4.00	3.90	3.15	4.45	6.30	7.72	9.96	14.09
	2SF 422 80 . 120	3/8"	4.90	4.90	5.00	7.07	10.00	12.25	15.81	22.36
	2SF 422 84 . 120	3/8"	5.30	5.30	6.25	8.84	12.50	15.31	19.76	27.95
	2SF 422 88 . 120	3/8"	6.60	6.00	8.00	11.31	16.00	19.60	25.30	35.78
	2SF 422 92 . 120	1/2"	7.30	7.30	10.00	14.14	20.00	24.49	31.62	44.72
	2SF 422 96 . 120	1/2"	8.00	8.00	12.50	17.68	25.00	30.62	39.53	55.90
	2SF 423 00 . 120	1/2"	8.70	8.70	15.75	22.27	31.50	38.88	49.81	70.44
	2SF 423 12 . 120	3/4"	12.70	12.30	31.50	44.55	63.00	77.16	99.61	140.87
	2SF 423 20 . 120	1"	17.00	16.00	50.00	70.71	100.00	122.47	158.11	223.61