

CHAPTER 3

◆◆ Full 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

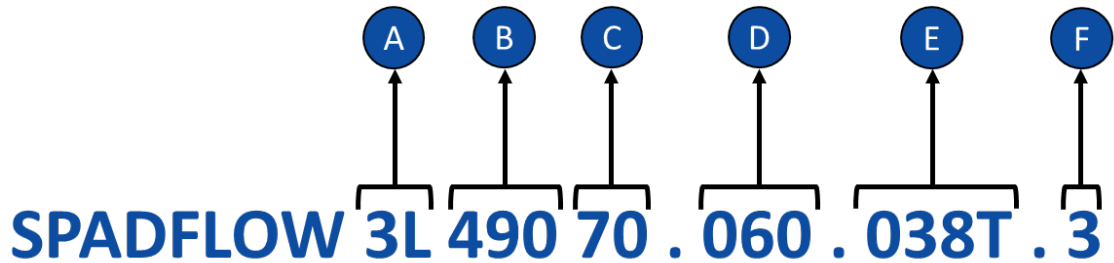
as an **Expert** on spray technology, SPADFLOW is at the forefront of production and innovation.





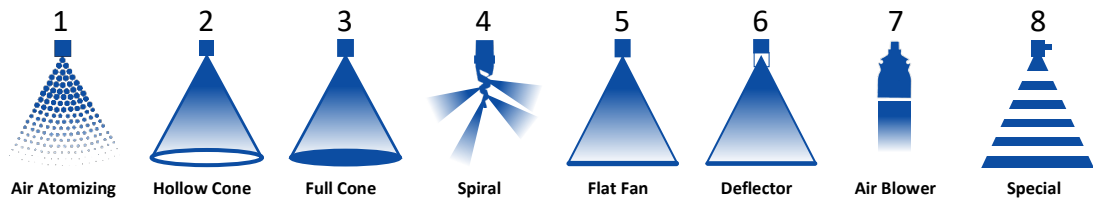
PRODUCT NUMBERS

Everything You Need to Know



A

Nozzle Type (Spray Pattern)



B

Nozzle Series

C

Flow Rate Rank

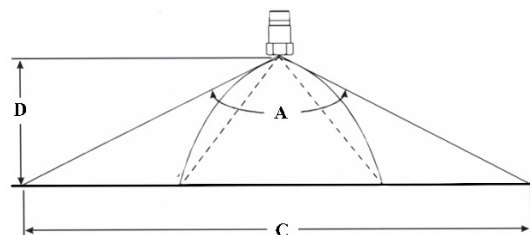
The flow rate rank is relative and depends on the respective nozzle type. The exact value is mentioned in tables on the product pages.

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	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

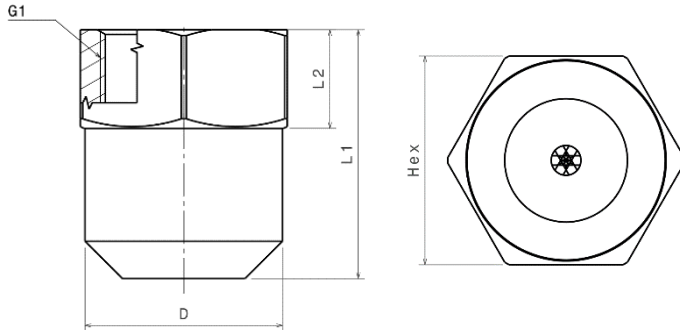
SPADFLOW spray nozzles are manufactured with the highest precision and undergo permanent quality checks. However, production-related tolerances can affect the spray angle, flow rate, droplet size and droplet distribution.



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G1	Thread Type			Dimensions [mm]				Weight
	BSPT	BSPP	NPT	L ₁	L ₂	D	Hex/Flats	
3/8"	038T	038P	038N	26.5	10	21.5	22	55 g

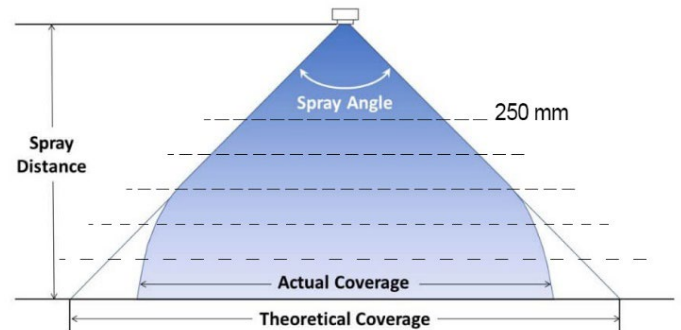
Material*	Code
Brass	1
S.S.304	2
S.S.316	3

* Different materials are available upon request

α	Spray coverage
	@ 250 mm
45°	200
50°	230
55°	260
60°	280
65°	320
70°	350
80°	420
90°	500

Properties:

- Two-Piece Construction
- Internal Vane
- Good Resistance to Clogging
- Uniform Spray



Spray angle	Code	General Code	Flow rate [l/min]						
			P [bar]						
			1.0 K factor	2.0	2.8	3.0	5.0	7.0	10
45°	3SF 05 020 . 45	2045	1.20	1.70	2.00	2.08	2.68	3.17	3.79
	3SF 05 025 . 45	2545	1.49	2.11	2.50	2.58	3.33	3.94	4.71
	3SF 05 030 . 45	3045	1.80	2.55	3.00	3.12	4.02	4.76	5.69
	3SF 05 035 . 45	3545	2.10	2.97	3.50	3.64	4.70	5.56	6.64
	3SF 05 040 . 45	4045	2.40	3.39	4.00	4.16	5.37	6.35	7.59
	3SF 05 047 . 45	4745	2.80	3.96	4.70	4.85	6.26	7.41	8.85
	3SF 05 050 . 45	5045	3.00	4.24	5.00	5.20	6.71	7.94	9.49
	3SF 05 055 . 45	5545	3.29	4.65	5.50	5.69	7.35	8.70	10.39
	3SF 05 060 . 45	6045	3.60	5.09	6.00	6.24	8.05	9.52	11.38
	3SF 05 070 . 45	7045	4.18	5.91	7.00	7.24	9.35	11.06	13.22
	3SF 05 080 . 45	8045	4.80	6.79	8.00	8.31	10.73	12.70	15.18
	3SF 05 100 . 45	10045	5.98	8.45	10.00	10.35	13.36	15.81	18.90
	3SF 05 120 . 45	12045	7.17	10.14	12.00	12.42	16.04	18.97	22.68



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Spray angle	Code	General Code	Flow rate [l/min]						
			P [bar]						
			1.0 <i>K factor</i>	2.0	2.8	3.0	5.0	7.0	10
50°	3SF 05 060 . 50	6050	3.59	5.07	6.00	6.21	8.02	9.49	11.34
55°	3SF 05 060 . 55	6055	3.59	5.07	6.00	6.21	8.02	9.49	11.34
60°	3SF 05 014 . 60	1460	0.86	1.22	1.44	1.49	1.92	2.28	2.72
	3SF 05 022 . 60	2260	1.29	1.82	2.16	2.23	2.88	3.41	4.08
	3SF 05 025 . 60	2560	1.49	2.11	2.50	2.59	3.34	3.95	4.72
	3SF 05 027 . 60	2760	1.61	2.28	2.70	2.79	3.61	4.27	5.10
	3SF 05 030 . 60	3060	1.79	2.54	3.00	3.11	4.01	4.74	5.67
	3SF 05 035 . 60	3560	2.09	2.96	3.50	3.62	4.68	5.53	6.61
	3SF 05 036 . 60	3660	2.15	3.04	3.60	3.72	4.81	5.69	6.80
	3SF 05 049 . 60	4960	2.93	4.14	4.90	5.07	6.55	7.75	9.27
	3SF 05 060 . 60	6060	3.61	5.11	6.04	6.25	8.07	9.55	11.42
	3SF 05 072 . 60	7260	4.29	6.07	7.18	7.43	9.59	11.35	13.57
	3SF 05 165 . 60	16560	9.86	13.95	16.50	17.08	22.05	26.09	31.18
	65°	3SF 05 010 . 65	1065	0.60	0.85	1.00	1.04	1.34	1.58
3SF 05 015 . 65		1565	0.90	1.27	1.50	1.55	2.00	2.37	2.83
3SF 05 016 . 65		1665	0.96	1.35	1.60	1.66	2.14	2.53	3.02
3SF 05 020 . 65		2065	1.20	1.69	2.00	2.07	2.67	3.16	3.78
3SF 05 024 . 65		2465	1.40	1.98	2.40	2.42	3.13	3.70	4.43
3SF 05 025 . 65		2565	1.49	2.11	2.50	2.59	3.34	3.95	4.72
3SF 05 030 . 65		3065	1.79	2.54	3.00	3.11	4.01	4.74	5.67
3SF 05 033 . 65		3365	1.96	2.77	3.28	3.39	4.38	5.19	6.20
3SF 05 035 . 65		3565	2.09	2.96	3.50	3.62	4.68	5.53	6.61
3SF 05 038 . 65		3865	2.27	3.21	3.80	3.93	5.08	6.01	7.18
3SF 05 040 . 65		4065	2.39	3.38	4.00	4.14	5.35	6.32	7.56
3SF 05 042 . 65		4265	2.51	3.55	4.20	4.35	5.61	6.64	7.94
3SF 05 045 . 65		4565	2.69	3.80	4.50	4.66	6.01	7.12	8.50
3SF 05 047 . 65		4765	2.81	3.97	4.70	4.86	6.28	7.43	8.88
3SF 05 050 . 65		5065	3.00	4.24	5.00	5.20	6.71	7.94	9.49
3SF 05 055 . 65		5565	3.28	4.64	5.50	5.68	7.33	8.68	10.37
3SF 05 059 . 65		5965	3.50	4.95	5.90	6.06	7.83	9.26	11.07
3SF 05 060 . 65		6065	3.59	5.07	6.00	6.21	8.02	9.49	11.34
3SF 05 065 . 65		6565	3.88	5.49	6.50	6.73	8.69	10.28	12.28
3SF 05 066 . 65		6665	3.94	5.58	6.60	6.83	8.82	10.44	12.47
3SF 05 070 . 65		7065	4.18	5.92	7.00	7.25	9.35	11.07	13.23
3SF 05 072 . 65		7265	4.30	6.09	7.20	7.45	9.62	11.38	13.61
3SF 05 073 . 65		7365	4.36	6.17	7.30	7.56	9.76	11.54	13.80
3SF 05 075 . 65		7565	4.48	6.34	7.50	7.76	10.02	11.86	14.17
3SF 05 080 . 65		8065	4.78	6.76	8.00	8.28	10.69	12.65	15.12
3SF 05 085 . 65		8565	5.08	7.18	8.50	8.80	11.36	13.44	16.06
3SF 05 090 . 65		9065	5.40	7.64	9.00	9.35	12.07	14.29	17.08
3SF 05 095 . 65		9565	5.68	8.03	9.50	9.83	12.69	15.02	17.95
3SF 05 100 . 65		10065	5.98	8.45	10.00	10.35	13.36	15.81	18.90
3SF 05 120 . 65		12065	7.17	10.14	12.00	12.42	16.04	18.97	22.68
3SF 05 130 . 65		13065	7.77	10.99	13.00	13.46	17.37	20.56	24.57
3SF 05 146 . 65		14665	8.73	12.34	14.60	15.11	19.51	23.08	27.59
3SF 05 150 . 65	15065	8.96	12.67	15.00	15.52	20.04	23.71	28.33	
3SF 05 160 . 65	16065	9.55	13.51	16.00	16.54	21.35	25.27	30.20	
3SF 05 165 . 65	16565	9.86	13.95	16.50	17.08	22.05	26.09	31.18	
3SF 05 170 . 65	17065	10.16	14.37	17.00	17.60	22.72	26.88	32.13	
70°	3SF 05 026 . 70	2670	1.55	2.20	2.60	2.69	3.47	4.11	4.91
	3SF 05 052 . 70	5270	3.11	4.39	5.20	5.38	6.95	8.22	9.83
	3SF 05 062 . 70	6270	3.71	5.24	6.20	6.42	8.29	9.80	11.72
80°	3SF 05 015 . 80	1580	0.90	1.27	1.50	1.56	2.01	2.38	2.85
	3SF 05 020 . 80	2080	1.20	1.69	2.00	2.07	2.67	3.16	3.78
	3SF 05 025 . 80	2580	1.49	2.11	2.49	2.58	3.33	3.94	4.71
	3SF 05 030 . 80	3080	1.79	2.54	3.00	3.11	4.01	4.74	5.67
	3SF 05 033 . 80	3380	1.96	2.77	3.28	3.39	4.38	5.19	6.20
	3SF 05 035 . 80	3580	2.09	2.96	3.50	3.62	4.68	5.53	6.61
	3SF 05 040 . 80	4080	2.39	3.38	4.00	4.14	5.35	6.32	7.56
	3SF 05 045 . 80	4580	2.69	3.80	4.50	4.66	6.01	7.12	8.50
	3SF 05 050 . 80	5080	2.99	4.23	5.00	5.18	6.68	7.91	9.45



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Spray angle	Code	General Code	Flow rate [l/min]						
			1.0 <i>K factor</i>	2.0	2.8	P [bar]			
						3.0	5.0	7.0	10
80°	3SF 05 060 . 80	6080	3.59	5.07	6.00	6.21	8.02	9.49	11.34
	3SF 05 075 . 80	7580	4.50	6.36	7.53	7.79	10.06	11.91	14.23
	3SF 05 080 . 80	8080	4.78	6.76	8.00	8.28	10.69	12.65	15.12
	3SF 05 085 . 80	8580	5.08	7.18	8.50	8.80	11.36	13.44	16.06
	3SF 05 098 . 80	9880	5.86	8.28	9.80	10.14	13.10	15.50	18.52
	3SF 05 102 . 80	10280	6.10	8.62	10.20	10.56	13.63	16.13	19.28
	3SF 05 106 . 80	10680	6.33	8.96	10.60	10.97	14.16	16.76	20.03
	3SF 05 110 . 80	11080	6.57	9.30	11.00	11.39	14.70	17.39	20.79
	3SF 05 118 . 80	11880	7.05	9.97	11.80	12.21	15.77	18.66	22.30
	3SF 05 129 . 80	12980	7.71	10.90	12.90	13.35	17.24	20.40	24.38
	3SF 05 150 . 80	15080	8.96	12.68	15.00	15.53	20.04	23.72	28.35
	3SF 05 160 . 80	16080	9.56	13.52	16.00	16.56	21.38	25.30	30.24
90°	3SF 05 015 . 90	1590	0.90	1.27	1.50	1.56	2.01	2.38	2.85
	3SF 05 020 . 90	2090	1.20	1.70	2.00	2.08	2.68	3.17	3.79
	3SF 05 025 . 90	2590	1.49	2.11	2.50	2.59	3.34	3.95	4.72
	3SF 05 030 . 90	3090	1.79	2.54	3.00	3.11	4.01	4.74	5.67
	3SF 05 035 . 90	3590	2.09	2.96	3.50	3.62	4.67	5.53	6.61
	3SF 05 038 . 90	3890	2.27	3.21	3.80	3.93	5.08	6.01	7.18
	3SF 05 040 . 90	4090	2.39	3.38	4.00	4.14	5.35	6.32	7.56
	3SF 05 045 . 90	4590	2.69	3.80	4.50	4.66	6.01	7.12	8.50
	3SF 05 046 . 90	4690	2.75	3.89	4.60	4.76	6.15	7.27	8.69
	3SF 05 050 . 90	5090	2.99	4.23	5.00	5.18	6.68	7.91	9.45
	3SF 05 055 . 90	5590	3.29	4.65	5.50	5.69	7.35	8.70	10.39
	3SF 05 060 . 90	6090	3.59	5.07	6.00	6.21	8.02	9.49	11.34
	3SF 05 065 . 90	6590	3.88	5.49	6.50	6.73	8.69	10.28	12.28
	3SF 05 074 . 90	7490	4.42	6.25	7.40	7.66	9.89	11.70	13.98
	3SF 05 080 . 90	8090	4.78	6.76	8.00	8.28	10.69	12.65	15.12
	3SF 05 090 . 90	9090	5.38	7.61	9.00	9.32	12.03	14.23	17.01
	3SF 05 095 . 90	9590	5.68	8.03	9.50	9.83	12.69	15.02	17.95
	3SF 05 100 . 90	10090	5.98	8.45	10.00	10.35	13.36	15.81	18.90
3SF 05 110 . 90	11090	6.57	9.30	11.00	11.39	14.70	17.39	20.79	
3SF 05 120 . 90	12090	7.17	10.14	12.00	12.42	16.04	18.97	22.68	
3SF 05 146 . 90	14690	8.73	12.34	14.60	15.11	19.51	23.08	27.59	