

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

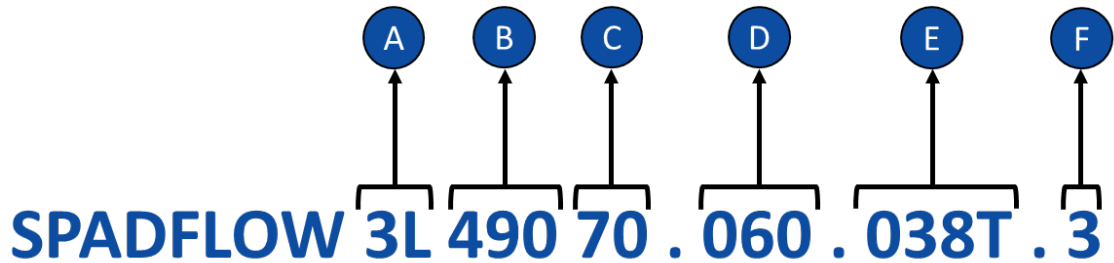
as an **Expert** on spray technology, SPADFLOW is at the forefront of production and innovation.





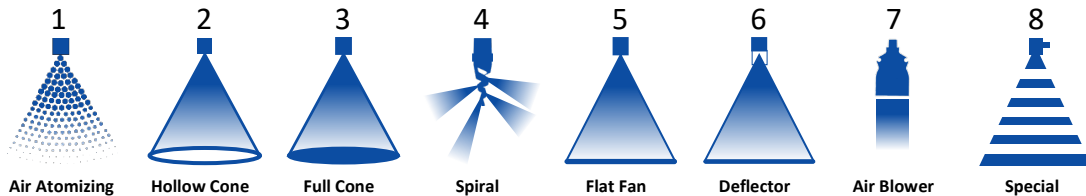
PRODUCT NUMBERS

Everything You Need to Know



A

Nozzle Type (Spray Pattern)



B

Nozzle Series

C

Flow Rate Rank

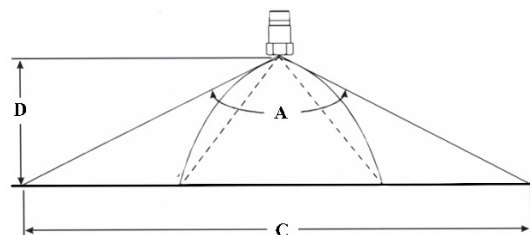
The flow rate rank is relative and depends on the respective nozzle type. The exact value is mentioned in tables on the product pages.

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	Polylactic 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

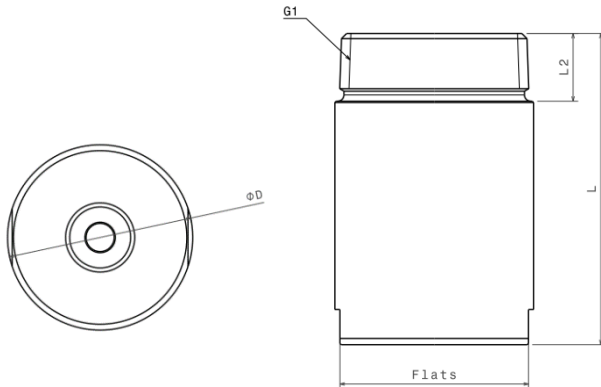
SPADFLOW spray nozzles are manufactured with the highest precision and undergo permanent quality checks. However, production-related tolerances can affect the spray angle, flow rate, droplet size and droplet distribution.



SPADFLOW 3L 403

Axial Full-Cone Nozzle

Webpage
+ STP



90° Version

120° Version

Version	G1	Thread Type			Dimensions [mm]				Weight
		BSPT	BSPP	NPT	L ₁	L ₂	D	Flats	
90°	2 1/2"	212T	212P	212N	52	27	83	75	1,300 gr
	3"	300T	300P	300N	60	30	98	85	2,000 gr
	3 1/2"	312T	312P	312N	70	32	118	105	3,600 gr

Properties:

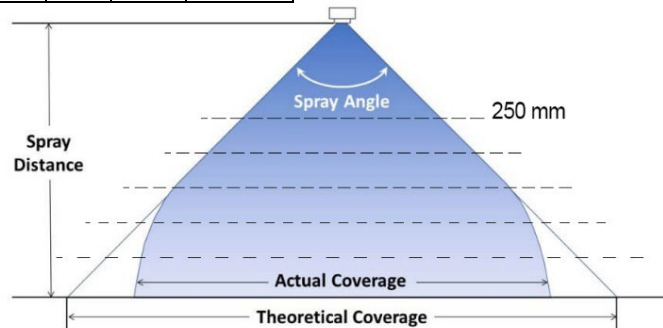
- Two-Piece Construction
- Internal Vane
- Uniform Spray Pattern
- High Flow

Version	G1	Thread Type			Dimensions [mm]				Weight
		BSPT	BSPP	NPT	L ₁	L ₂	D	Flats	
120°	2 1/2"	212T	212P	212N	124	27	83	75	3,200 gr
	3"	300T	300P	300N	153	30	98	85	5,400 gr
	3 1/2"	312T	312P	312N	156	32	118	105	8,300 gr
	4"	400T	400P	400N	165	36	128	110	9,600 gr

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

* Different materials are available upon request

α	Spray coverage @ 250 mm
90°	500 mm
120°	850 mm



Spray angle (α)	Code	Connection [inch]	B Ø [mm]	E Ø [mm]	Flow rate [l/min]						
					P [bar]						
					0.3	0.5	1.0 <i>K factor</i>	2.0	3.0	5.0	7.0
90°	3L 403 44 . 090	2 1/2"	25.00	12.00	187	230	303	400	470	577	660
	3L 403 48 . 090	2 1/2"	29.50	12.00	234	287	379	500	588	721	825
	3L 403 52 . 090	3"	32.00	13.80	295	362	477	630	741	909	1,040
	3L 403 60 . 090	3 1/2"	40.00	15.00	468	574	758	1,000	1,176	1,443	1,651
120°	3L 403 44 . 120	2 1/2"	25.50	10.00	187	230	303	400	470	577	660
	3L 403 48 . 120	2 1/2"	29.50	11.00	234	287	379	500	588	721	825
	3L 403 52 . 120	3"	32.00	15.00	295	362	477	630	741	909	1,040
	3L 403 60 . 120	3 1/2"	42.00	12.00	469	574	758	1,000	1,176	1,443	1,651
	3L 403 62 . 120	4"	45.00	15.00	585	718	947	1,250	1,470	1,903	2,063