

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

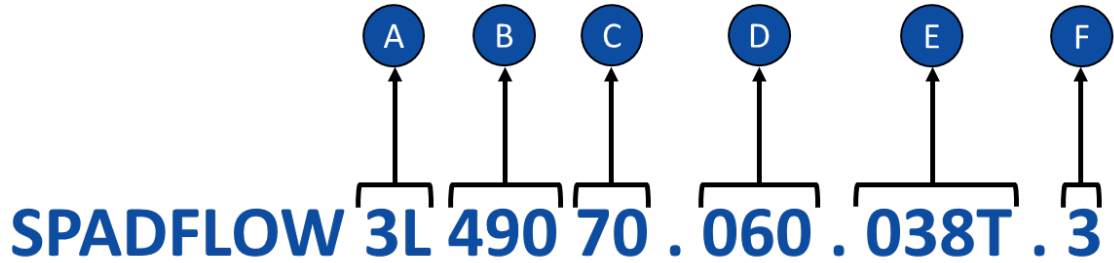
as an **Expert** on spray technology, SPADFLOW is at the forefront of production and innovation.





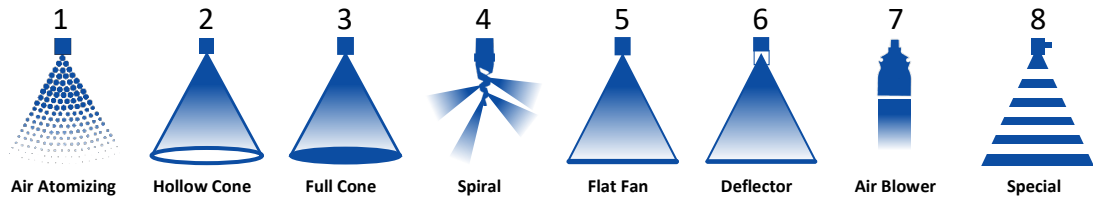
PRODUCT NUMBERS

Everything You Need to Know



A

Nozzle Type (Spray Pattern)



B

Nozzle Series

C

Flow Rate Rank

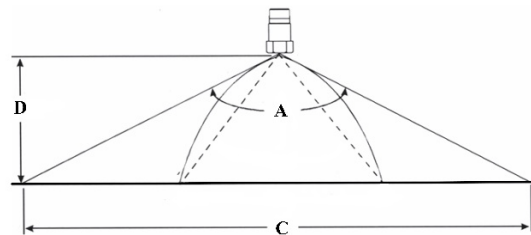
The flow rate rank is relative and depends on the respective nozzle type. The exact value is mentioned in tables on the product pages.

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,

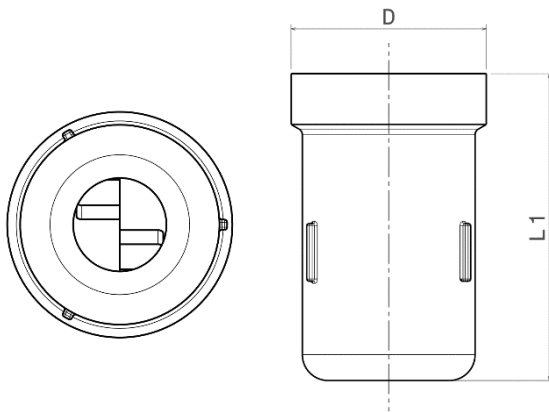
Spray angle (α)	Code	Connection Size [inch]	Ø B [mm]	Ø E [mm]	Flow rate (Q) [l/min]						
					Pressure (P) [bar]						
					0.5	1.0	2.0	3.0	5.0	7.0	10.0
45°	3L 490 40 . 045	1/8"	1.25	1.25	0.57	0.76	1.00	1.18	1.44	1.65	1.90
	3L 490 60 . 045	1/4"	2.00	2.00	1.81	2.39	3.15	3.70	4.54	5.20	6.00
	3L 490 70 . 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.

SPADFLOW 3S R

High Flow Full-Cone Nozzle

Webpage
+ STP



Properties:

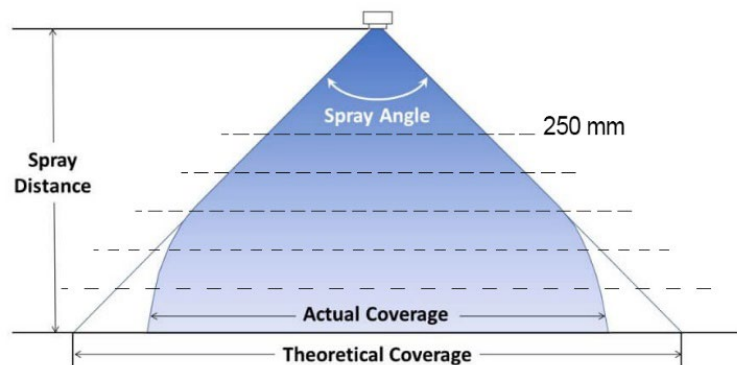
- One-Piece Construction
- Internal Vane
- Large Open Orifice

G1	Thread Type			Dimensions [mm]		Weight
	BSPT	BSPP	NPT	L ₁	D	
2"	200T	200P	200N	112.7	74.6	1.36 Kg
2 1/2"	212T	212P	212N	138.9	88.1	2.49 Kg
3"	300T	300P	300N	165.1	104.8	3.40 Kg
4"	400T	400P	400N	206.4	127.0	6.12 Kg
5"	500T	500P	500N	254.8	161.9	14.97 Kg
6"	600T	600P	600N	300.0	193.7	17.46 Kg
8"	800T	800P	800N	388.9	241.3	34.02 Kg

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

* Different materials are available upon request

α	Spray coverage
	@ 250 mm
50°	220
65°	300
80°	420
95°	550



Spray angle (α)	Code	Connection [inch]	Flow rate [l/min]							
			P [bar]							
			0.1	0.2	0.4	0.5	0.7	1.5	3	4
50°	3S R 45 . 050	2"	122	168	231	256	298	424	583	665
	3S R 70 . 050	2 1/2"	190	261	359	398	464	659	907	1035
	3S R 110 . 050	3"	298	410	564	625	730	1036	1425	1627
	3S R 160 . 050	4"	434	596	820	909	1061	1507	2073	2366
	3S R 190 . 050	4"	515	708	974	1079	1260	1789	2461	2809
	3S R 250 . 050	5"	677	932	1282	1420	1658	2354	3238	3697
	3S R 280 . 050	5"	759	1044	1436	1591	1857	2637	3627	4140
	3S R 360 . 050	6"	975	1342	1846	2045	2388	3390	4663	5323
	3S R 400 . 050	6"	1084	1491	2051	2273	2653	3767	5181	5915
	3S R 650 . 050	8"	1761	2423	3333	3693	4311	6121	8420	9611
3S R 750 . 050	8"	2032	2795	3845	4261	4974	7063	9715	11090	
65°	3S R 45 . 065	2"	122	168	231	256	298	424	583	665
	3S R 60 . 065	2"	163	224	308	341	398	565	777	887
	3S R 70 . 065	2 1/2"	190	261	359	398	464	659	907	1035
	3S R 90 . 065	2 1/2"	244	335	461	511	597	848	1166	1331



SPADFLOW 3S R

High Flow Full-Cone Nozzle

Webpage
+ STP



Spray angle (α)	Code	Connection [inch]	Flow rate [l/min]							
			P [bar]							
			0.1	0.2	0.4	0.5	0.7	1.5	3	4
	3S R 110 . 065	3"	298	410	564	625	730	1036	1425	1627
	3S R 140 . 065	3"	379	522	718	795	929	1318	1814	2070
	3S R 160 . 065	4"	434	596	820	909	1061	1507	2073	2366
	3S R 190 . 065	4"	515	708	974	1079	1260	1789	2461	2809
	3S R 250 . 065	4" – 5"	677	932	1282	1420	1658	2354	3238	3697
	3S R 280 . 065	5"	759	1044	1436	1591	1857	2637	3627	4140
	3S R 360 . 065	6"	975	1342	1846	2045	2388	3390	4663	5323
	3S R 380 . 065	5"	1030	1416	1948	2159	2520	3579	4922	5619
	3S R 400 . 065	6"	1084	1491	2051	2273	2653	3767	5181	5915
	3S R 560 . 065	6"	1517	2087	2871	3182	3714	5274	7254	8280
	3S R 650 . 065	8"	1761	2423	3333	3693	4311	6121	8420	9611
	3S R 750 . 065	8"	2032	2795	3845	4261	4974	7063	9715	11090
	3S R 850 . 065	8"	2303	3168	4358	4829	5637	8005	11011	12569
80°	3S R 160 . 080	4"	434	596	820	909	1061	1507	2073	2366
	3S R 250 . 080	5"	677	932	1282	1420	1658	2354	3238	3697
	3S R 360 . 080	6"	975	1342	1846	2045	2388	3390	4663	5323
	3S R 650 . 080	8"	1761	2423	3333	3693	4311	6121	8420	9611
95°	3S R 45 . 095	2"	122	168	231	256	298	424	583	665
	3S R 60 . 095	2"	163	224	308	341	398	565	777	887
	3S R 70 . 095	2 1/2"	190	261	359	398	464	659	907	1035
	3S R 90 . 095	2 1/2"	244	335	461	511	597	848	1166	1331
	3S R 110 . 095	3"	298	410	564	625	730	1036	1425	1627
	3S R 140 . 095	3"	379	522	718	795	929	1318	1814	2070
	3S R 190 . 095	4"	515	708	974	1079	1260	1789	2461	2809
	3S R 250 . 095	4"	677	932	1282	1420	1658	2354	3238	3697
	3S R 280 . 095	5"	759	1044	1436	1591	1857	2637	3627	4140
	3S R 380 . 095	5"	1030	1416	1948	2159	2520	3579	4922	5619
	3S R 400 . 095	6"	1084	1491	2051	2273	2653	3767	5181	5915
	3S R 560 . 095	6"	1517	2087	2871	3182	3714	5274	7254	8280
	3S R 750 . 095	8"	2032	2795	3845	4261	4974	7063	9715	11090
	3S R 850 . 095	8"	2303	3168	4358	4829	5637	8005	11011	12569
3S R 1000 . 095	8"	2710	3727	5127	5681	6632	9417	12954	14787	