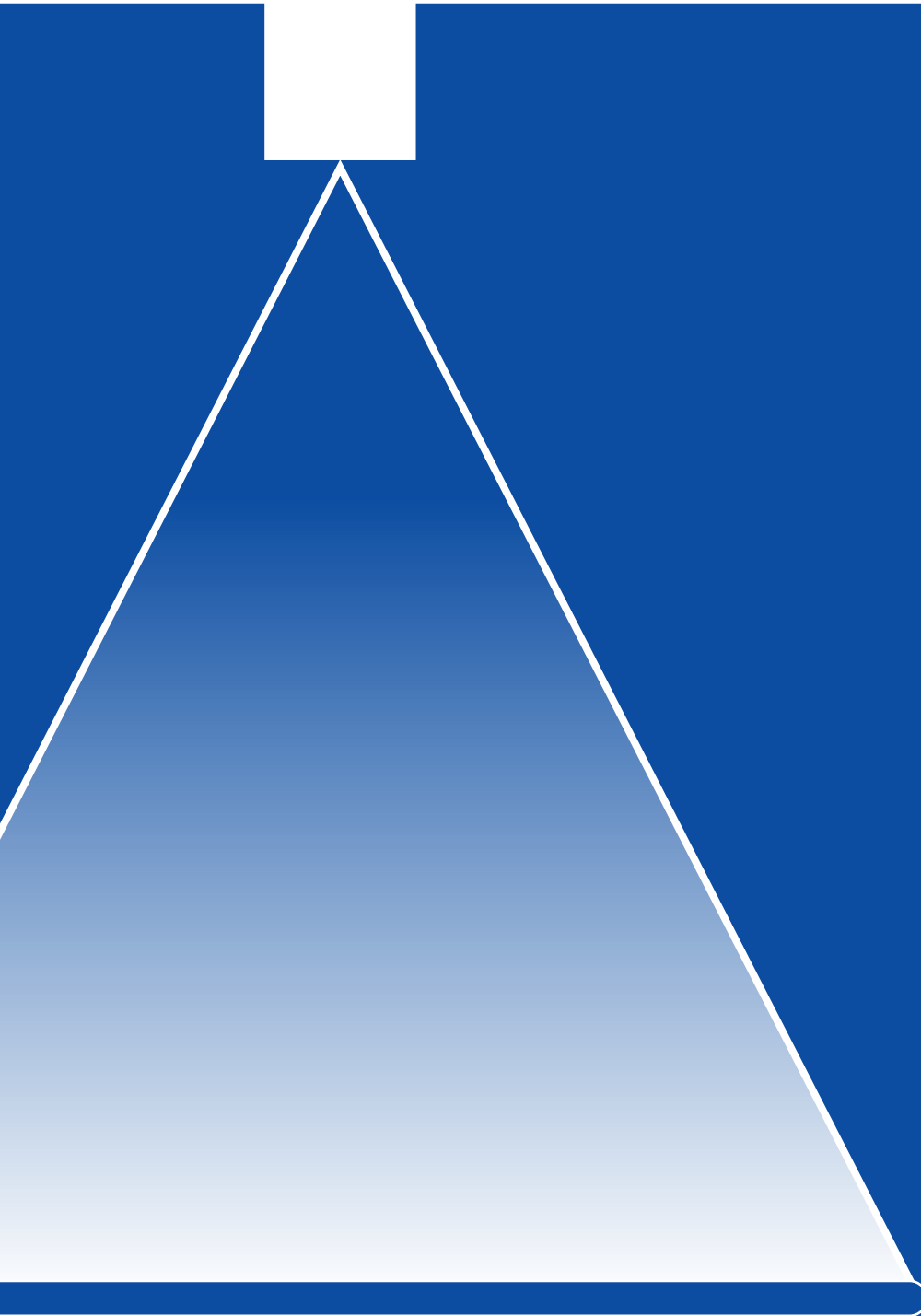


CHAPTER 5

◆◆ Flat Fan 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

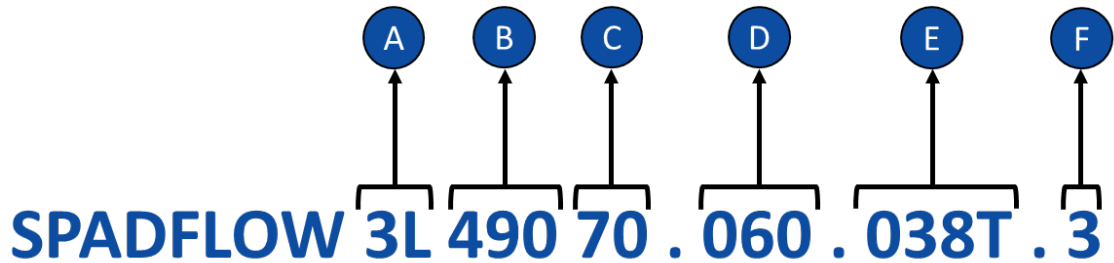
as an **Expert** on spray technology, SPADFLOW is at the forefront of production and innovation.





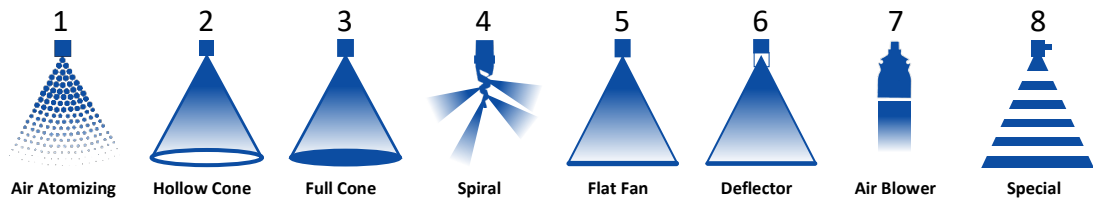
PRODUCT NUMBERS

Everything You Need to Know



A

Nozzle Type (Spray Pattern)



B

Nozzle Series

C

Flow Rate Rank

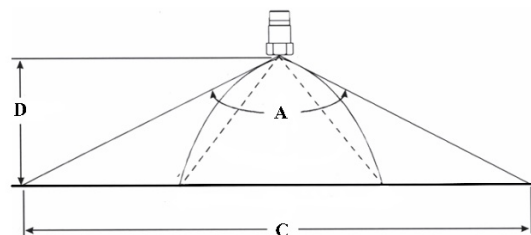
The flow rate rank is relative and depends on the respective nozzle type. The exact value is mentioned in tables on the product pages.

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

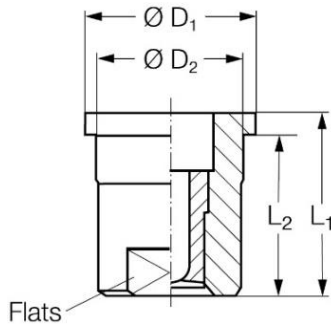
SPADFLOW spray nozzles are manufactured with the highest precision and undergo permanent quality checks. However, production-related tolerances can affect the spray angle, flow rate, droplet size and droplet distribution.



SPADFLOW 5L 652(HP)

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G1	Dimensions [mm]					Weight
	L1	L2	D1	D2	Flats	
Retaining Nut 3/8"	16.0	14.0	14.8	12.6	10.0	10 gr

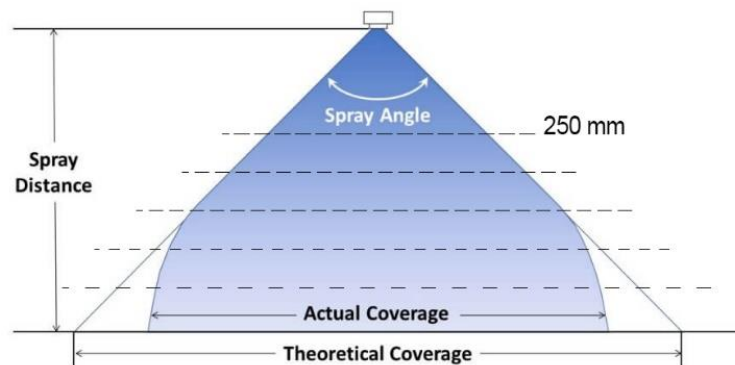
Material*	Code
Brass	1
S.S.304	2
S.S.316	3

* Different materials are available upon request

Properties:

- Uniform, Parabolic Liquid Distribution
- Stable Spray Angle
- Assembly with Retaining Nut

α	Spray coverage
	@ 250 mm
20°	85 mm
30°	125 mm
45°	170 mm
60°	290 mm



Spray angle (α)	Code	General Code	A Ø [mm]	Flow rate [l/min]							
				P [bar]							
				40	60	80	100	120	150	200	
20°	5L 652H 36 . 020	2002	1	2.88	3.53	4.08	4.56	5	5.58	6.45	
	5L 652H 37 . 020	20021	1.02	3.03	3.71	4.28	4.79	5.25	5.87	6.77	
	5L 652H 38 . 020	20025	1.1	3.6	4.42	5.1	5.7	6.24	6.98	8.06	
	5L 652H 39 . 020	20028	1.16	4.04	4.94	5.71	6.38	6.99	7.81	9.02	
	5L 652H 40 . 020	2003	1.18	4.32	5.29	6.11	6.83	7.48	8.37	9.66	
	5L 652H 41 . 020	20034	1.3	4.9	6	6.93	7.75	8.49	9.49	10.96	
	5L 652H 44 . 020	20038	1.33	5.48	6.72	7.75	8.67	9.5	10.62	12.26	
	5L 652H 45 . 020	2004	1.35	5.77	7.06	8.16	9.12	9.99	11.17	12.9	
	5L 652H 46 . 020	20043	1.38	6.2	7.59	8.77	9.8	10.74	12	13.86	
	5L 652H 47 . 020	20045	1.4	6.49	7.95	9.18	10.26	11.24	12.57	14.51	
	5L 652H 48 . 020	2005	1.55	7.21	8.83	10.2	11.4	12.49	13.96	16.12	
	5L 652H 50 . 020	20055	1.6	7.93	9.71	11.22	12.54	13.74	15.36	17.73	
5L 652H 52 . 020	2006	1.72	8.65	10.6	12.24	13.68	14.99	16.75	19.35		



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Spray angle (α)	Code	General Code	A Ø [mm]	Flow rate [l/min]						
				P [bar]						
				40	60	80	100	120	150	200
20°	5L 652H 53 . 020	20065	1.75	9.37	11.48	13.26	14.82	16.23	18.15	20.96
	5L 652H 54 . 020	2007	1.8	10.09	12.36	14.28	15.96	17.48	19.55	22.57
	5L 652H 55 . 020	20075	1.9	10.81	13.25	15.29	17.1	18.73	20.94	24.18
	5L 652H 57 . 020	2008	2.05	11.54	14.13	16.31	18.24	19.98	22.34	25.8
	5L 652H 58 . 020	20087	2.06	12.54	15.36	17.74	19.83	21.72	24.29	28.04
	5L 652H 59 . 020	2009	2.1	12.98	15.89	18.35	20.52	22.48	25.13	29.02
	5L 652H 60 . 020	2010	2.3	14.41	17.65	20.38	22.79	24.97	27.91	32.23
	5L 652H 62 . 020	2011	2.4	15.86	19.42	22.42	25.07	27.46	30.7	35.45
	5L 652H 64 . 020	20125	2.5	18.02	22.07	25.48	28.49	31.21	34.89	40.29
	5L 652H 65 . 020	20131	2.55	18.89	23.13	26.71	29.86	32.71	36.57	42.23
	5L 652H 66 . 020	20139	2.65	20.04	24.54	28.34	31.68	34.7	38.8	44.8
	5L 652H 67 . 020	2015	2.7	21.62	26.48	30.58	34.19	37.45	41.87	48.35
	5L 652H 70 . 020	20175	3	25.23	30.9	35.68	39.89	43.7	48.86	56.41
30°	5L 652H 36 . 030	3002	1	2.88	3.53	4.08	4.56	5	5.58	6.45
	5L 652H 37 . 030	30021	1.02	3.03	3.71	4.28	4.79	5.25	5.87	6.77
	5L 652H 38 . 030	30025	1.1	3.6	4.42	5.1	5.7	6.24	6.98	8.06
	5L 652H 39 . 030	30028	1.16	4.04	4.94	5.71	6.38	6.99	7.81	9.02
	5L 652H 40 . 030	3003	1.18	4.32	5.29	6.11	6.83	7.48	8.37	9.66
	5L 652H 41 . 030	30034	1.3	4.9	6	6.93	7.75	8.49	9.49	10.96
	5L 652H 44 . 030	30038	1.33	5.48	6.72	7.75	8.67	9.5	10.62	12.26
	5L 652H 45 . 030	3004	1.35	5.77	7.06	8.16	9.12	9.99	11.17	12.9
	5L 652H 46 . 030	30043	1.38	6.2	7.59	8.77	9.8	10.74	12	13.86
	5L 652H 47 . 030	30045	1.4	6.49	7.95	9.18	10.26	11.24	12.57	14.51
	5L 652H 48 . 030	3005	1.55	7.21	8.83	10.2	11.4	12.49	13.96	16.12
	5L 652H 50 . 030	30055	1.6	7.93	9.71	11.22	12.54	13.74	15.36	17.73
	5L 652H 52 . 030	3006	1.72	8.65	10.6	12.24	13.68	14.99	16.75	19.35
	5L 652H 53 . 030	30065	1.75	9.37	11.48	13.26	14.82	16.23	18.15	20.96
	5L 652H 54 . 030	3007	1.8	10.09	12.36	14.28	15.96	17.48	19.55	22.57
	5L 652H 55 . 030	30075	1.9	10.81	13.25	15.29	17.1	18.73	20.94	24.18
	5L 652H 57 . 030	3008	2.05	11.54	14.13	16.31	18.24	19.98	22.34	25.8
	5L 652H 58 . 030	30087	2.06	12.54	15.36	17.74	19.83	21.72	24.29	28.04
	5L 652H 59 . 030	3009	2.1	12.98	15.89	18.35	20.52	22.48	25.13	29.02
5L 652H 60 . 030	3010	2.3	14.41	17.65	20.38	22.79	24.97	27.91	32.23	
5L 652H 62 . 030	3011	2.4	15.86	19.42	22.42	25.07	27.46	30.7	35.45	
5L 652H 64 . 030	30125	2.5	18.02	22.07	25.48	28.49	31.21	34.89	40.29	
5L 652H 65 . 030	30131	2.55	18.89	23.13	26.71	29.86	32.71	36.57	42.23	
5L 652H 66 . 030	30139	2.65	20.04	24.54	28.34	31.68	34.7	38.8	44.8	
5L 652H 67 . 030	3015	2.7	21.62	26.48	30.58	34.19	37.45	41.87	48.35	
5L 652H 70 . 030	30175	3	25.23	30.9	35.68	39.89	43.7	48.86	56.41	
40°	5L 652H 36 . 040	4002	1	2.88	3.53	4.08	4.56	5	5.58	6.45
	5L 652H 37 . 040	40021	1.02	3.03	3.71	4.28	4.79	5.25	5.87	6.77
	5L 652H 38 . 040	40025	1.1	3.6	4.42	5.1	5.7	6.24	6.98	8.06
	5L 652H 39 . 040	40028	1.16	4.04	4.94	5.71	6.38	6.99	7.81	9.02
	5L 652H 40 . 040	4003	1.18	4.32	5.29	6.11	6.83	7.48	8.37	9.66
	5L 652H 41 . 040	40034	1.3	4.9	6	6.93	7.75	8.49	9.49	10.96
	5L 652H 44 . 040	40038	1.33	5.48	6.72	7.75	8.67	9.5	10.62	12.26
	5L 652H 45 . 040	4004	1.35	5.77	7.06	8.16	9.12	9.99	11.17	12.9
	5L 652H 47 . 040	40040	1.4	6.49	7.95	9.18	10.26	11.24	12.57	14.51
	5L 652H 48 . 040	4005	1.55	7.21	8.83	10.2	11.4	12.49	13.96	16.12
	5L 652H 50 . 040	40055	1.6	7.93	9.71	11.22	12.54	13.74	15.36	17.73
	5L 652H 52 . 040	4006	1.72	8.65	10.6	12.24	13.68	14.99	16.75	19.35
	5L 652H 53 . 040	40065	1.75	9.37	11.48	13.26	14.82	16.23	18.15	20.96
	5L 652H 54 . 040	4007	1.8	10.09	12.36	14.28	15.96	17.48	19.55	22.57
	5L 652H 55 . 040	40075	1.9	10.81	13.25	15.29	17.1	18.73	20.94	24.18
	5L 652H 57 . 040	4008	2.05	11.54	14.13	16.31	18.24	19.98	22.34	25.8
	5L 652H 58 . 040	40087	2.06	12.54	15.36	17.74	19.83	21.72	24.29	28.04
	5L 652H 59 . 040	4009	2.1	12.98	15.89	18.35	20.52	22.48	25.13	29.02
	5L 652H 60 . 040	4010	2.3	14.41	17.65	20.38	22.79	24.97	27.91	32.23
5L 652H 62 . 040	4011	2.4	15.86	19.42	22.42	25.07	27.46	30.7	35.45	
5L 652H 64 . 040	40125	2.5	18.02	22.07	25.48	28.49	31.21	34.89	40.29	



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Spray angle (α)	Code	General Code	A Ø [mm]	Flow rate [l/min]						
				P [bar]						
				40	60	80	100	120	150	200
40°	5L 652H 65 . 040	40131	2.55	18.89	23.13	26.71	29.86	32.71	36.57	42.23
	5L 652H 66 . 040	40139	2.65	20.04	24.54	28.34	31.68	34.7	38.8	44.8
	5L 652H 67 . 040	4015	2.7	21.62	26.48	30.58	34.19	37.45	41.87	48.35
	5L 652H 70 . 040	40175	3	25.23	30.9	35.68	39.89	43.7	48.86	56.41
	5L 652H 72 . 040	4020	3.05	28.83	35.31	40.78	45.59	49.94	55.84	64.47
	5L 652H 76 . 040	4025	3.5	36.04	44.14	50.97	56.99	62.43	69.8	80.6
45°	5L 652H 79 . 040	4030	3.9	43.25	52.97	61.16	68.38	74.91	83.75	96.7
	5L 652H 36 . 045	4502	1	2.88	3.53	4.08	4.56	5	5.58	6.45
	5L 652H 37 . 045	45021	1.02	3.03	3.71	4.28	4.79	5.25	5.87	6.77
	5L 652H 38 . 045	45025	1.1	3.6	4.42	5.1	5.7	6.24	6.98	8.06
	5L 652H 39 . 045	45028	1.16	4.04	4.94	5.71	6.38	6.99	7.81	9.02
	5L 652H 40 . 045	4503	1.18	4.32	5.29	6.11	6.83	7.48	8.37	9.66
	5L 652H 41 . 045	45034	1.3	4.9	6	6.93	7.75	8.49	9.49	10.96
	5L 652H 44 . 045	45038	1.33	5.48	6.72	7.75	8.67	9.5	10.62	12.26
	5L 652H 45 . 045	4504	1.35	5.77	7.06	8.16	9.12	9.99	11.17	12.9
	5L 652H 47 . 045	45045	1.4	6.49	7.95	9.18	10.26	11.24	12.57	14.51
	5L 652H 48 . 045	4505	1.55	7.21	8.83	10.2	11.4	12.49	13.96	16.12
	5L 652H 50 . 045	45055	1.6	7.93	9.71	11.22	12.54	13.74	15.36	17.73
	5L 652H 52 . 045	4506	1.72	8.65	10.6	12.24	13.68	14.99	16.75	19.35
	5L 652H 53 . 045	45065	1.75	9.37	11.48	13.26	14.82	16.23	18.15	20.96
	5L 652H 54 . 045	4507	1.8	10.09	12.36	14.28	15.96	17.48	19.55	22.57
	5L 652H 55 . 045	45075	1.9	10.81	13.25	15.29	17.1	18.73	20.94	24.18
	5L 652H 57 . 045	4508	2.05	11.54	14.13	16.31	18.24	19.98	22.34	25.8
	5L 652H 58 . 045	45087	2.06	12.54	15.36	17.74	19.83	21.72	24.29	28.04
	5L 652H 59 . 045	4509	2.1	12.98	15.89	18.35	20.52	22.48	25.13	29.02
	5L 652H 60 . 045	4510	2.3	14.41	17.65	20.38	22.79	24.97	27.91	32.23
	5L 652H 62 . 045	4511	2.4	15.86	19.42	22.42	25.07	27.46	30.7	35.45
5L 652H 64 . 045	45125	2.5	18.02	22.07	25.48	28.49	31.21	34.89	40.29	
5L 652H 65 . 045	45131	2.55	18.89	23.13	26.71	29.86	32.71	36.57	42.23	
5L 652H 66 . 045	45139	2.65	20.04	24.54	28.34	31.68	34.7	38.8	44.8	
5L 652H 67 . 045	4515	2.7	21.62	26.48	30.58	34.19	37.45	41.87	48.35	
5L 652H 70 . 045	45175	3	25.23	30.9	35.68	39.89	43.7	48.86	56.41	
5L 652H 72 . 045	4520	3.05	28.83	35.31	40.78	45.59	49.94	55.84	64.47	
5L 652H 76 . 045	4525	3.5	36.04	44.14	50.97	56.99	62.43	69.8	80.6	
5L 652H 79 . 045	4530	3.9	43.25	52.97	61.16	68.38	74.91	83.75	96.7	
60°	5L 652H 36 . 060	6002	1	2.88	3.53	4.08	4.56	5	5.58	6.45
	5L 652H 37 . 060	60021	1.02	3.03	3.71	4.28	4.79	5.25	5.87	6.77
	5L 652H 38 . 060	60025	1.1	3.6	4.42	5.1	5.7	6.24	6.98	8.06
	5L 652H 39 . 060	60028	1.16	4.04	4.94	5.71	6.38	6.99	7.81	9.02
	5L 652H 40 . 060	6003	1.18	4.32	5.29	6.11	6.83	7.48	8.37	9.66
	5L 652H 41 . 060	60034	1.3	4.9	6	6.93	7.75	8.49	9.49	10.96
	5L 652H 45 . 060	6004	1.35	5.77	7.06	8.16	9.12	9.99	11.17	12.9
	5L 652H 47 . 060	60045	1.4	6.49	7.95	9.18	10.26	11.24	12.57	14.51
	5L 652H 48 . 060	6005	1.55	7.21	8.83	10.2	11.4	12.49	13.96	16.12
	5L 652H 50 . 060	60055	1.6	7.93	9.71	11.22	12.54	13.74	15.36	17.73
	5L 652H 52 . 060	6006	1.72	8.65	10.6	12.24	13.68	14.99	16.75	19.35
	5L 652H 53 . 060	60065	1.75	9.37	11.48	13.26	14.82	16.23	18.15	20.96
	5L 652H 54 . 060	6007	1.8	10.09	12.36	14.28	15.96	17.48	19.55	22.57
	5L 652H 55 . 060	60075	1.9	10.81	13.25	15.29	17.1	18.73	20.94	24.18
	5L 652H 57 . 060	6008	2.05	11.54	14.13	16.31	18.24	19.98	22.34	25.8
	5L 652H 58 . 060	60087	2.06	12.54	15.36	17.74	19.83	21.72	24.29	28.04
	5L 652H 59 . 060	6009	2.1	12.98	15.89	18.35	20.52	22.48	25.13	29.02
	5L 652H 60 . 060	6010	2.3	14.41	17.65	20.38	22.79	24.97	27.91	32.23
	5L 652H 62 . 060	6011	2.4	15.86	19.42	22.42	25.07	27.46	30.7	35.45
	5L 652H 64 . 060	60125	2.5	18.02	22.07	25.48	28.49	31.21	34.89	40.29
	5L 652H 65 . 060	60131	2.55	18.89	23.13	26.71	29.86	32.71	36.57	42.23
5L 652H 66 . 060	60139	2.65	20.04	24.54	28.34	31.68	34.7	38.8	44.8	
5L 652H 67 . 060	6015	2.7	21.62	26.48	30.58	34.19	37.45	41.87	48.35	
5L 652H 70 . 060	60175	3	25.23	30.9	35.68	39.89	43.7	48.86	56.41	
5L 652H 72 . 060	6020	3.05	28.83	35.31	40.78	45.59	49.94	55.84	64.47	
5L 652H 76 . 060	6025	3.5	36.04	44.14	50.97	56.99	62.43	69.8	80.6	



SPADFLOW 5L 652(HP)

High Pressure Cleaning Flat-Fan Nozzle

Webpage
+ STP



Spray angle (α)	Code	General Code	A Ø [mm]	Flow rate [l/min]						
				P [bar]						
				40	60	80	100	120	150	200
80°	5L 652H 36 . 080	8002	1	2.88	3.53	4.08	4.56	5	5.58	6.45
	5L 652H 37 . 080	80021	1.02	3.03	3.71	4.28	4.79	5.25	5.87	6.77
	5L 652H 38 . 080	80025	1.1	3.6	4.42	5.1	5.7	6.24	6.98	8.06
	5L 652H 39 . 080	80028	1.16	4.04	4.94	5.71	6.38	6.99	7.81	9.02
	5L 652H 40 . 080	8003	1.18	4.32	5.29	6.11	6.83	7.48	8.37	9.66
	5L 652H 41 . 080	80034	1.3	4.9	6	6.93	7.75	8.49	9.49	10.96
	5L 652H 45 . 080	8004	1.35	5.77	7.06	8.16	9.12	9.99	11.17	12.9
	5L 652H 47 . 080	80045	1.4	6.49	7.95	9.18	10.26	11.24	12.57	14.51
	5L 652H 48 . 080	8005	1.55	7.21	8.83	10.2	11.4	12.49	13.96	16.12
	5L 652H 50 . 080	80055	1.6	7.93	9.71	11.22	12.54	13.74	15.36	17.73
	5L 652H 52 . 080	8006	1.72	8.65	10.6	12.24	13.68	14.99	16.75	19.35
	5L 652H 53 . 080	80065	1.75	9.37	11.48	13.26	14.82	16.23	18.15	20.96
	5L 652H 54 . 080	8007	1.8	10.09	12.36	14.28	15.96	17.48	19.55	22.57
	5L 652H 55 . 080	80075	1.9	10.81	13.25	15.29	17.1	18.73	20.94	24.18
	5L 652H 57 . 080	8008	2.05	11.54	14.13	16.31	18.24	19.98	22.34	25.8
	5L 652H 58 . 080	80087	2.06	12.54	15.36	17.74	19.83	21.72	24.29	28.04
	5L 652H 59 . 080	8009	2.1	12.98	15.89	18.35	20.52	22.48	25.13	29.02
	5L 652H 60 . 080	8010	2.3	14.41	17.65	20.38	22.79	24.97	27.91	32.23
	5L 652H 62 . 080	8011	2.4	15.86	19.42	22.42	25.07	27.46	30.7	35.45
	5L 652H 64 . 080	80125	2.5	18.02	22.07	25.48	28.49	31.21	34.89	40.29
5L 652H 65 . 080	80131	2.55	18.89	23.13	26.71	29.86	32.71	36.57	42.23	
5L 652H 66 . 080	80139	2.65	20.04	24.54	28.34	31.68	34.7	38.8	44.8	
5L 652H 67 . 080	8015	2.7	21.62	26.48	30.58	34.19	37.45	41.87	48.35	
5L 652H 70 . 080	80175	3	25.23	30.9	35.68	39.89	43.7	48.86	56.41	
5L 652H 72 . 080	8020	3.05	28.83	35.31	40.78	45.59	49.94	55.84	64.47	
5L 652H 76 . 080	8025	3.5	36.04	44.14	50.97	56.99	62.43	69.8	80.6	