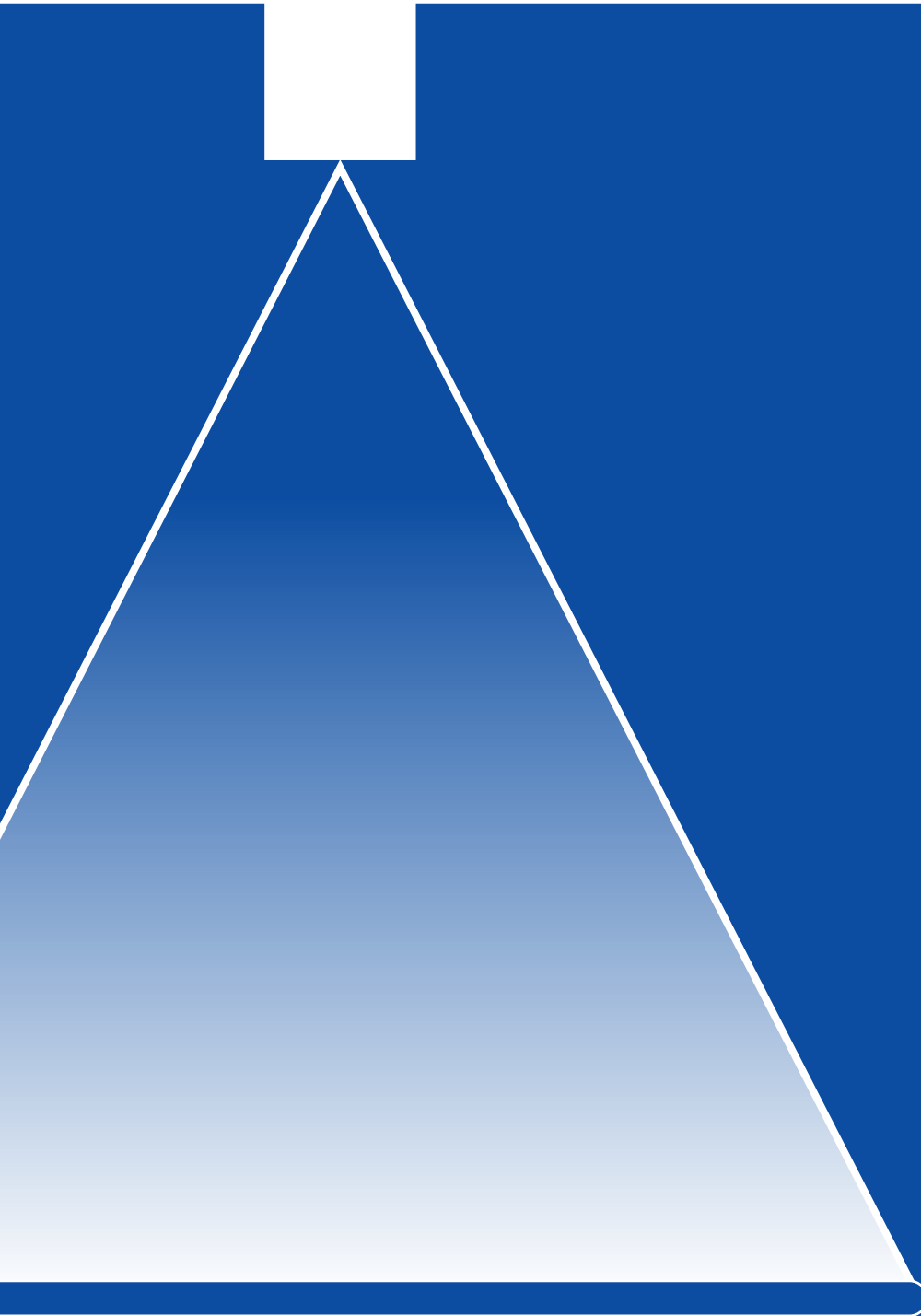


## CHAPTER 5

# ◆◆ Flat Fan Nozzles



# ◆ ABOUT US

We Are Here to Help

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## • 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

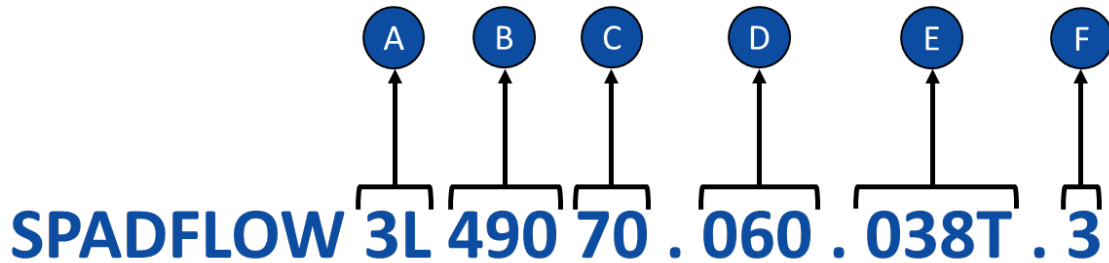
as an **Expert** on spray technology, SPADFLOW is at the forefront of production and innovation.





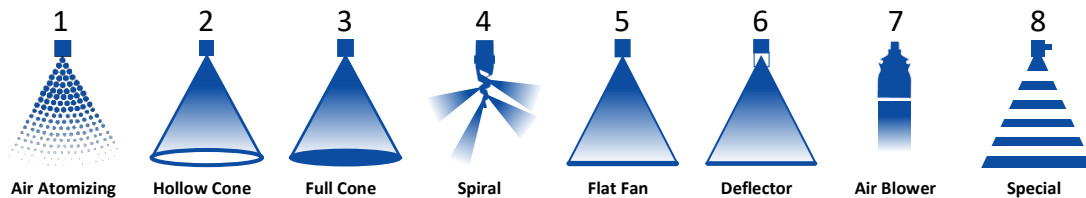
# PRODUCT NUMBERS

## Everything You Need to Know



### A

#### Nozzle Type (Spray Pattern)



### B

#### Nozzle Series

### C

#### Flow Rate Rank

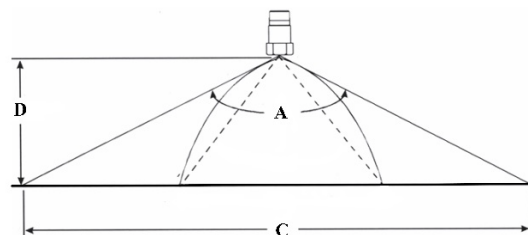
The flow rate rank is relative and depends on the respective nozzle type. The exact value is mentioned in tables on the product pages.

### 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

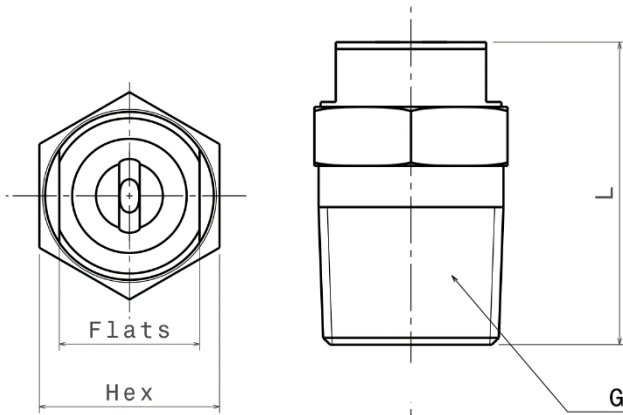
SPADFLOW spray nozzles are manufactured with the highest precision and undergo permanent quality checks. However, production-related tolerances can affect the spray angle, flow rate, droplet size and droplet distribution.



# SPADFLOW 5L 608

## High Pressure Flat-Fan Nozzle

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G1	Thread Type			Dimensions [mm]					Weight
	BSPT	BSPP	NPT	L1	L2	D	Hex	Flats	
1/8"	018T	018P	018N	22.0	10.0	13.0	14	10	18 gr

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

\* Different materials are available upon request

### Properties:

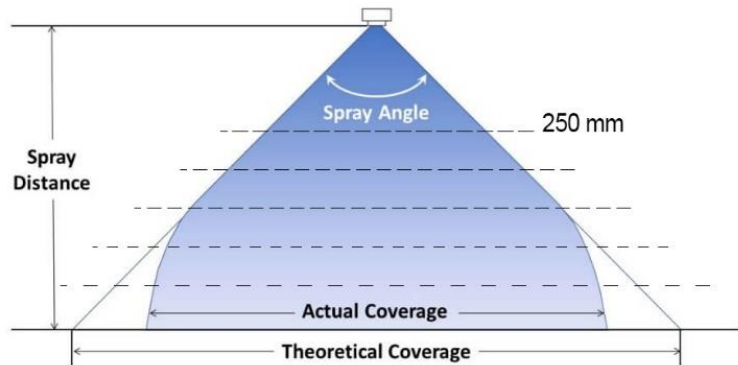
Two – Piece Construction

Internal Part

Sharp, Uniform Flat Fan Spray

Extremely Narrow Spray Depth

$\alpha$	Spray coverage @ 250 mm
20°	85 mm
30°	125 mm
40°	150 mm
45°	170 mm
60°	290 mm
80°	400 mm



Spray angle ( $\alpha$ )	Code	General code	Connection** [inch]	A $\varnothing$ [mm]	Flow rate [l/min]						
					P [bar]						
					40	60	80	100	120	150	200
20°	5L 608 36 . 020	2002	1/8"	1	2.88	3.53	4.08	4.56	5	5.58	6.45
	5L 608 37 . 020	20021	1/8"	1.02	3.03	3.71	4.28	4.79	5.25	5.87	6.77
	5L 608 38 . 020	20025	1/8"	1.1	3.6	4.42	5.1	5.7	6.24	6.98	8.06
	5L 608 39 . 020	20028	1/8"	1.16	4.04	4.94	5.71	6.38	6.99	7.81	9.02
	5L 608 40 . 020	2003	1/8"	1.18	4.32	5.29	6.11	6.83	7.48	8.37	9.66
	5L 608 41 . 020	20034	1/8"	1.3	4.9	6	6.93	7.75	8.49	9.49	10.96
	5L 608 44 . 020	20038	1/8"	1.33	5.48	6.72	7.75	8.67	9.5	10.62	12.26
	5L 608 45 . 020	2004	1/8"	1.35	5.77	7.06	8.16	9.12	9.99	11.17	12.9
	5L 608 46 . 020	20043	1/8"	1.38	6.2	7.59	8.77	9.8	10.74	12	13.86
	5L 608 47 . 020	20045	1/8"	1.4	6.49	7.95	9.18	10.26	11.24	12.57	14.51
	5L 608 48 . 020	2005	1/8"	1.55	7.21	8.83	10.2	11.4	12.49	13.96	16.12
	5L 608 50 . 020	20055	1/8"	1.6	7.93	9.71	11.22	12.54	13.74	15.36	17.73
	5L 608 52 . 020	2006	1/8"	1.72	8.65	10.6	12.24	13.68	14.99	16.75	19.35



# SPADFLOW 5L 608

## High Pressure Flat-Fan Nozzle

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Spray angle (α)	Code	General code	Connection** [inch]	A Ø [mm]	Flow rate [l/min]						
					P [bar]						
					40	60	80	100	120	150	200
20°	5L 608 53 . 020	20065	1/8"	1.75	9.37	11.48	13.26	14.82	16.23	18.15	20.96
	5L 608 54 . 020	2007	1/8"	1.8	10.09	12.36	14.28	15.96	17.48	19.55	22.57
	5L 608 55 . 020	20075	1/8"	1.9	10.81	13.25	15.29	17.1	18.73	20.94	24.18
	5L 608 57 . 020	2008	1/8"	2.05	11.54	14.13	16.31	18.24	19.98	22.34	25.8
	5L 608 58 . 020	20087	1/8"	2.06	12.54	15.36	17.74	19.83	21.72	24.29	28.04
	5L 608 59 . 020	2009	1/8"	2.1	12.98	15.89	18.35	20.52	22.48	25.13	29.02
	5L 608 60 . 020	2010	1/8"	2.3	14.41	17.65	20.38	22.79	24.97	27.91	32.23
30°	5L 608 36 . 030	3002	1/8"	1	2.88	3.53	4.08	4.56	5	5.58	6.45
	5L 608 37 . 030	30021	1/8"	1.02	3.03	3.71	4.28	4.79	5.25	5.87	6.77
	5L 608 38 . 030	30025	1/8"	1.1	3.6	4.42	5.1	5.7	6.24	6.98	8.06
	5L 608 39 . 030	30028	1/8"	1.16	4.04	4.94	5.71	6.38	6.99	7.81	9.02
	5L 608 40 . 030	3003	1/8"	1.18	4.32	5.29	6.11	6.83	7.48	8.37	9.66
	5L 608 41 . 030	30034	1/8"	1.3	4.9	6	6.93	7.75	8.49	9.49	10.96
	5L 608 44 . 030	30038	1/8"	1.33	5.48	6.72	7.75	8.67	9.5	10.62	12.26
	5L 608 45 . 030	3004	1/8"	1.35	5.77	7.06	8.16	9.12	9.99	11.17	12.9
	5L 608 46 . 030	30043	1/8"	1.38	6.2	7.59	8.77	9.8	10.74	12	13.86
	5L 608 47 . 030	30045	1/8"	1.4	6.49	7.95	9.18	10.26	11.24	12.57	14.51
	5L 608 48 . 030	3005	1/8"	1.55	7.21	8.83	10.2	11.4	12.49	13.96	16.12
	5L 608 50 . 030	30055	1/8"	1.6	7.93	9.71	11.22	12.54	13.74	15.36	17.73
	5L 608 52 . 030	3006	1/8"	1.72	8.65	10.6	12.24	13.68	14.99	16.75	19.35
	5L 608 53 . 030	30065	1/8"	1.75	9.37	11.48	13.26	14.82	16.23	18.15	20.96
	5L 608 54 . 030	3007	1/8"	1.8	10.09	12.36	14.28	15.96	17.48	19.55	22.57
	5L 608 55 . 030	30075	1/8"	1.9	10.81	13.25	15.29	17.1	18.73	20.94	24.18
	5L 608 57 . 030	3008	1/8"	2.05	11.54	14.13	16.31	18.24	19.98	22.34	25.8
	5L 608 58 . 030	30087	1/8"	2.06	12.54	15.36	17.74	19.83	21.72	24.29	28.04
5L 608 59 . 030	3009	1/8"	2.1	12.98	15.89	18.35	20.52	22.48	25.13	29.02	
5L 608 60 . 030	3010	1/8"	2.3	14.41	17.65	20.38	22.79	24.97	27.91	32.23	
40°	5L 608 36 . 040	40021	1/8"	1	2.88	3.53	4.08	4.56	5	5.58	6.45
	5L 608 37 . 040	40025	1/8"	1.02	3.03	3.71	4.28	4.79	5.25	5.87	6.77
	5L 608 38 . 040	40028	1/8"	1.1	3.6	4.42	5.1	5.7	6.24	6.98	8.06
	5L 608 39 . 040	4003	1/8"	1.16	4.04	4.94	5.71	6.38	6.99	7.81	9.02
	5L 608 40 . 040	40034	1/8"	1.18	4.32	5.29	6.11	6.83	7.48	8.37	9.66
	5L 608 41 . 040	40038	1/8"	1.3	4.9	6	6.93	7.75	8.49	9.49	10.96
	5L 608 44 . 040	4004	1/8"	1.33	5.48	6.72	7.75	8.67	9.5	10.62	12.26
	5L 608 45 . 040	40040	1/8"	1.35	5.77	7.06	8.16	9.12	9.99	11.17	12.9
	5L 608 47 . 040	4005	1/8"	1.4	6.49	7.95	9.18	10.26	11.24	12.57	14.51
	5L 608 48 . 040	40055	1/8"	1.55	7.21	8.83	10.2	11.4	12.49	13.96	16.12
	5L 608 50 . 040	4006	1/8"	1.6	7.93	9.71	11.22	12.54	13.74	15.36	17.73
	5L 608 52 . 040	40065	1/8"	1.72	8.65	10.6	12.24	13.68	14.99	16.75	19.35
	5L 608 53 . 040	4007	1/8"	1.75	9.37	11.48	13.26	14.82	16.23	18.15	20.96
	5L 608 54 . 040	40075	1/8"	1.8	10.09	12.36	14.28	15.96	17.48	19.55	22.57
	5L 608 55 . 040	4008	1/8"	1.9	10.81	13.25	15.29	17.1	18.73	20.94	24.18
	5L 608 57 . 040	40087	1/8"	2.05	11.54	14.13	16.31	18.24	19.98	22.34	25.8
	5L 608 58 . 040	4009	1/8"	2.06	12.54	15.36	17.74	19.83	21.72	24.29	28.04
	5L 608 59 . 040	4010	1/8"	2.1	12.98	15.89	18.35	20.52	22.48	25.13	29.02
5L 608 60 . 040	40021	1/8"	2.3	14.41	17.65	20.38	22.79	24.97	27.91	32.23	
45°	5L 608 36 . 045	4502	1/8"	1	2.88	3.53	4.08	4.56	5	5.58	6.45
	5L 608 37 . 045	45021	1/8"	1.02	3.03	3.71	4.28	4.79	5.25	5.87	6.77
	5L 608 38 . 045	45025	1/8"	1.1	3.6	4.42	5.1	5.7	6.24	6.98	8.06
	5L 608 39 . 045	45028	1/8"	1.16	4.04	4.94	5.71	6.38	6.99	7.81	9.02
	5L 608 40 . 045	4503	1/8"	1.18	4.32	5.29	6.11	6.83	7.48	8.37	9.66
	5L 608 41 . 045	45034	1/8"	1.3	4.9	6	6.93	7.75	8.49	9.49	10.96
	5L 608 44 . 045	45038	1/8"	1.33	5.48	6.72	7.75	8.67	9.5	10.62	12.26
	5L 608 45 . 045	4504	1/8"	1.35	5.77	7.06	8.16	9.12	9.99	11.17	12.9
	5L 608 47 . 045	45045	1/8"	1.4	6.49	7.95	9.18	10.26	11.24	12.57	14.51
	5L 608 48 . 045	4505	1/8"	1.55	7.21	8.83	10.2	11.4	12.49	13.96	16.12
	5L 608 50 . 045	45055	1/8"	1.6	7.93	9.71	11.22	12.54	13.74	15.36	17.73
	5L 608 52 . 045	4506	1/8"	1.72	8.65	10.6	12.24	13.68	14.99	16.75	19.35
	5L 608 53 . 045	45065	1/8"	1.75	9.37	11.48	13.26	14.82	16.23	18.15	20.96
	5L 608 54 . 045	4507	1/8"	1.8	10.09	12.36	14.28	15.96	17.48	19.55	22.57



# SPADFLOW 5L 608

## High Pressure Flat-Fan Nozzle

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Spray angle (α)	Code	General code	Connection** [inch]	A Ø [mm]	Flow rate [l/min]						
					P [bar]						
					40	60	80	100	120	150	200
	5L 608 55 . 045	45075	1/8"	1.9	10.81	13.25	15.29	17.1	18.73	20.94	24.18
	5L 608 57 . 045	4508	1/8"	2.05	11.54	14.13	16.31	18.24	19.98	22.34	25.8
	5L 608 58 . 045	45087	1/8"	2.06	12.54	15.36	17.74	19.83	21.72	24.29	28.04
	5L 608 59 . 045	4509	1/8"	2.1	12.98	15.89	18.35	20.52	22.48	25.13	29.02
	5L 608 60 . 045	4510	1/8"	2.3	14.41	17.65	20.38	22.79	24.97	27.91	32.23
60°	5L 608 36 . 060	6002	1/8"	1	2.88	3.53	4.08	4.56	5	5.58	6.45
	5L 608 37 . 060	60021	1/8"	1.02	3.03	3.71	4.28	4.79	5.25	5.87	6.77
	5L 608 38 . 060	60025	1/8"	1.1	3.6	4.42	5.1	5.7	6.24	6.98	8.06
	5L 608 39 . 060	60028	1/8"	1.16	4.04	4.94	5.71	6.38	6.99	7.81	9.02
	5L 608 40 . 060	6003	1/8"	1.18	4.32	5.29	6.11	6.83	7.48	8.37	9.66
	5L 608 41 . 060	60034	1/8"	1.3	4.9	6	6.93	7.75	8.49	9.49	10.96
	5L 608 45 . 060	6004	1/8"	1.35	5.77	7.06	8.16	9.12	9.99	11.17	12.9
	5L 608 47 . 060	60045	1/8"	1.4	6.49	7.95	9.18	10.26	11.24	12.57	14.51
	5L 608 48 . 060	6005	1/8"	1.55	7.21	8.83	10.2	11.4	12.49	13.96	16.12
	5L 608 50 . 060	60055	1/8"	1.6	7.93	9.71	11.22	12.54	13.74	15.36	17.73
	5L 608 52 . 060	6006	1/8"	1.72	8.65	10.6	12.24	13.68	14.99	16.75	19.35
	5L 608 53 . 060	60065	1/8"	1.75	9.37	11.48	13.26	14.82	16.23	18.15	20.96
	5L 608 54 . 060	6007	1/8"	1.8	10.09	12.36	14.28	15.96	17.48	19.55	22.57
	5L 608 55 . 060	60075	1/8"	1.9	10.81	13.25	15.29	17.1	18.73	20.94	24.18
	5L 608 57 . 060	6008	1/8"	2.05	11.54	14.13	16.31	18.24	19.98	22.34	25.8
5L 608 58 . 060	60087	1/8"	2.06	12.54	15.36	17.74	19.83	21.72	24.29	28.04	
5L 608 59 . 060	6009	1/8"	2.1	12.98	15.89	18.35	20.52	22.48	25.13	29.02	
5L 608 60 . 060	6010	1/8"	2.3	14.41	17.65	20.38	22.79	24.97	27.91	32.23	
80°	5L 608 36 . 080	8002	1/8"	1	2.88	3.53	4.08	4.56	5	5.58	6.45
	5L 608 37 . 080	80021	1/8"	1.02	3.03	3.71	4.28	4.79	5.25	5.87	6.77
	5L 608 38 . 080	80025	1/8"	1.1	3.6	4.42	5.1	5.7	6.24	6.98	8.06
	5L 608 39 . 080	80028	1/8"	1.16	4.04	4.94	5.71	6.38	6.99	7.81	9.02
	5L 608 40 . 080	8003	1/8"	1.18	4.32	5.29	6.11	6.83	7.48	8.37	9.66
	5L 608 41 . 080	80034	1/8"	1.3	4.9	6	6.93	7.75	8.49	9.49	10.96
	5L 608 45 . 080	8004	1/8"	1.35	5.77	7.06	8.16	9.12	9.99	11.17	12.9
	5L 608 47 . 080	80045	1/8"	1.4	6.49	7.95	9.18	10.26	11.24	12.57	14.51
	5L 608 48 . 080	8005	1/8"	1.55	7.21	8.83	10.2	11.4	12.49	13.96	16.12
	5L 608 50 . 080	80055	1/8"	1.6	7.93	9.71	11.22	12.54	13.74	15.36	17.73
	5L 608 52 . 080	8006	1/8"	1.72	8.65	10.6	12.24	13.68	14.99	16.75	19.35
	5L 608 53 . 080	80065	1/8"	1.75	9.37	11.48	13.26	14.82	16.23	18.15	20.96
	5L 608 54 . 080	8007	1/8"	1.8	10.09	12.36	14.28	15.96	17.48	19.55	22.57
	5L 608 55 . 080	80075	1/8"	1.9	10.81	13.25	15.29	17.1	18.73	20.94	24.18
	5L 608 57 . 080	8008	1/8"	2.05	11.54	14.13	16.31	18.24	19.98	22.34	25.8
5L 608 58 . 080	80087	1/8"	2.06	12.54	15.36	17.74	19.83	21.72	24.29	28.04	
5L 608 59 . 080	8009	1/8"	2.1	12.98	15.89	18.35	20.52	22.48	25.13	29.02	
5L 608 60 . 080	8010	1/8"	2.3	14.41	17.65	20.38	22.79	24.97	27.91	32.23	