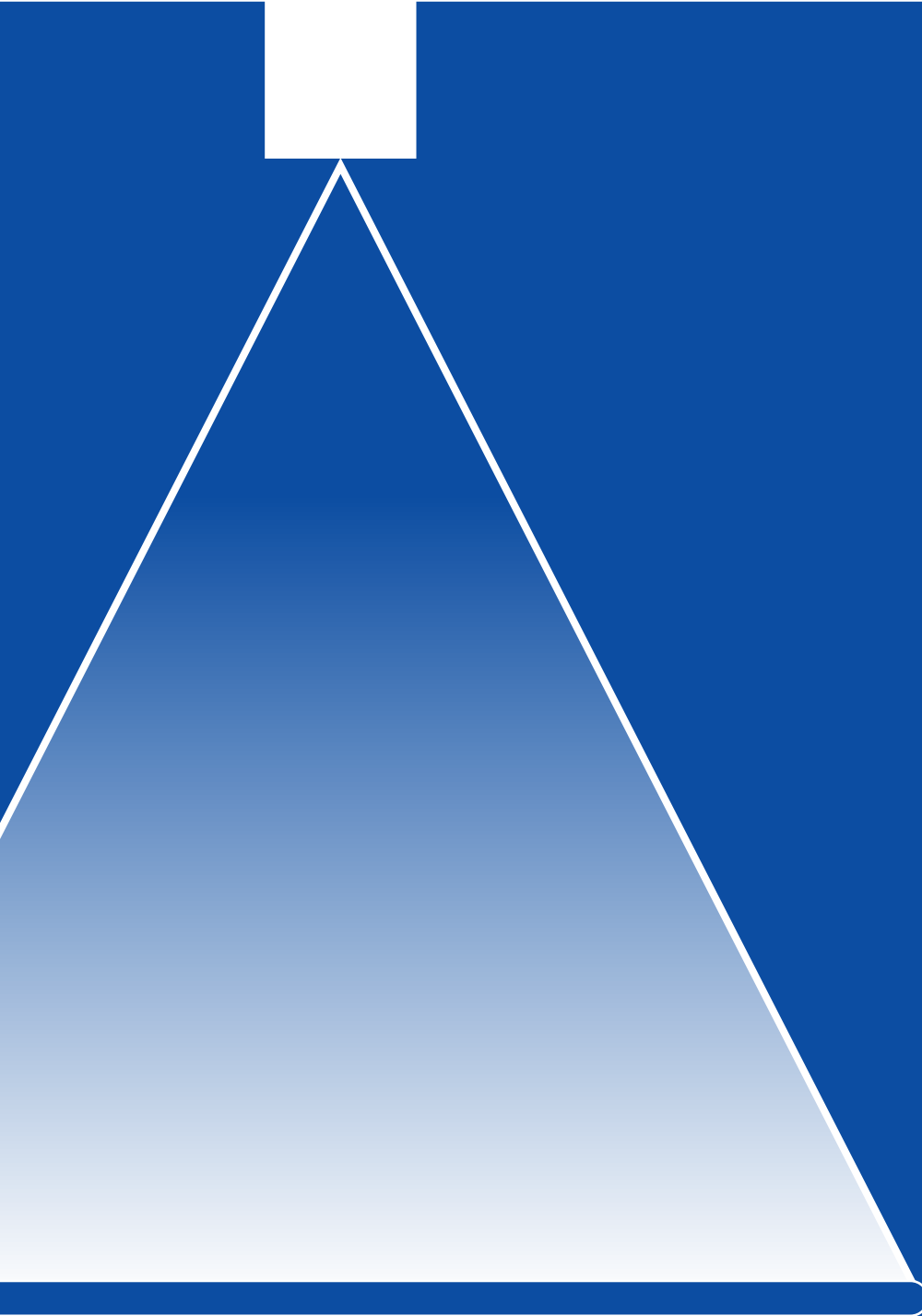


CHAPTER 5

◆◆ 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

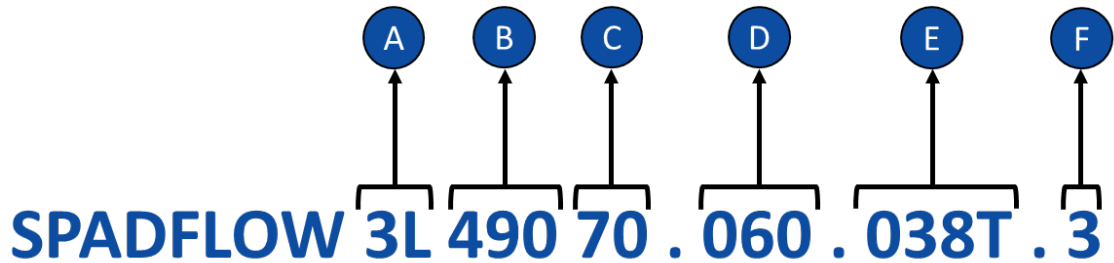
as an **Expert** on spray technology, SPADFLOW is at the forefront of production and innovation.





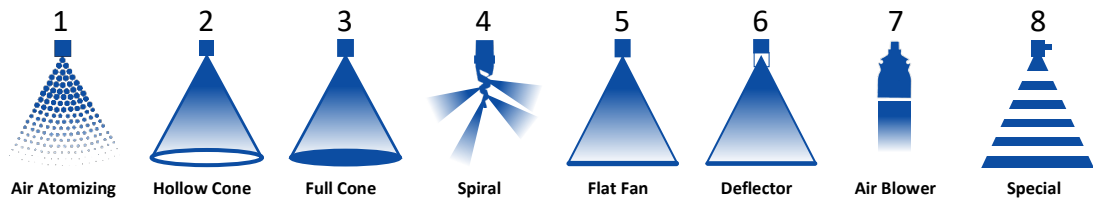
PRODUCT NUMBERS

Everything You Need to Know



A

Nozzle Type (Spray Pattern)



B

Nozzle Series

C

Flow Rate Rank

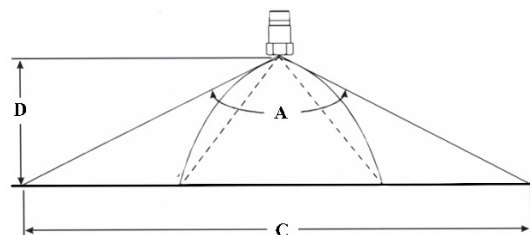
The flow rate rank is relative and depends on the respective nozzle type. The exact value is mentioned in tables on the product pages.

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,

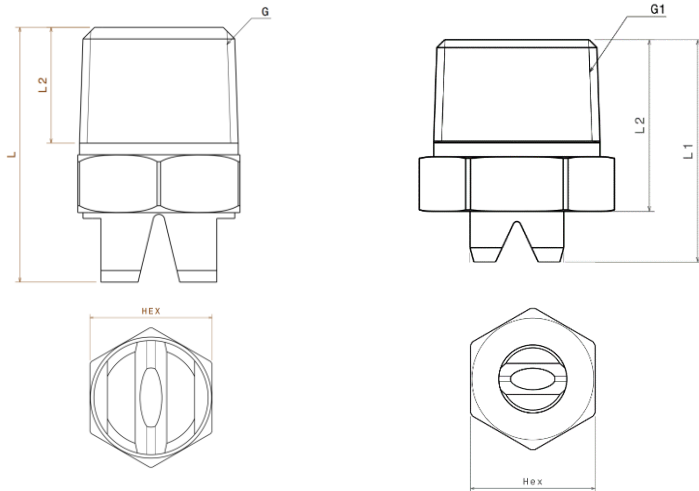
Spray angle (α)	Code	Connection Size [inch]	Ø B [mm]	Ø E [mm]	Flow rate (Q) [l/min]						
					Pressure (P) [bar]						
					0.5	1.0	2.0	3.0	5.0	7.0	10.0
45°	3L 490 40 . 045	1/8"	1.25	1.25	0.57	0.76	1.00	1.18	1.44	1.65	1.90
	3L 490 60 . 045	1/4"	2.00	2.00	1.81	2.39	3.15	3.70	4.54	5.20	6.00
	3L 490 70 . 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 632/633

Widespread Flat-Fan Nozzle



5L 632 Series

5L 633 Series

G1	Thread Type			Dimensions [mm]				Weight
	BSPT	BSPP	NPT	L ₁	L ₂	Flat	Hex	
1/8"	018T	018P	018T	22.0	6.5	10	14	17 gr
1/4"	014T	014P	014T	22.0	9.7	10	14	20 gr
3/8"	038T	038P	038T	22.0	10.1	-	17	30 gr
1/2"	012T	012P	012T	27.0	13.2	-	22	40 gr

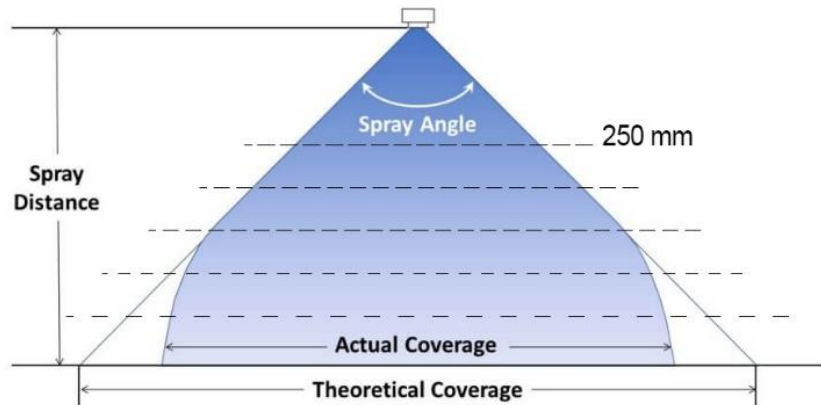
Material*	Code
Brass	1
S.S.304	2
S.S.316	3

* Different materials are available upon request

Properties:

- One - Piece Construction
- Uniform, Parabolic Liquid Distribution
- Stable Spray Angle
- Tapered, Self-Sealing Thread

α	Spray coverage @ 250 mm
20°	85 mm
30°	120 mm
45°	170 mm
60°	290 mm
75°	380 mm
90°	500 mm
120°	910 mm



Spray angle (α)	Code	Connection [inch]	A \varnothing [mm]	E \varnothing [mm]	Flow rate [l/min]						
					P [bar]						
					0.5	1.0	2.0	3.0	5.0	7.0	10.0
20°	5L 632 30 . 020	1/8"-1/4"	0.70	0.60	0.16	0.23	0.32	0.39	0.51	0.60	0.72
	5L 632 36 . 020	1/8"-1/4"	1.00	0.80	0.31	0.44	0.63	0.77	1.00	1.18	1.40
	5L 632 44 . 020	1/8"-1/4"	1.35	1.10	0.62	0.88	1.25	1.53	1.98	2.34	2.80
	5L 632 48 . 020	1/8"-1/4"	1.50	1.20	0.80	1.13	1.60	1.96	2.53	2.99	3.58
30°	5L 632 30 . 030	1/8"-1/4"	0.60	0.50	0.16	0.23	0.32	0.39	0.51	0.60	0.72
	5L 632 36 . 030	1/8"-1/4"	1.00	0.70	0.31	0.44	0.63	0.77	1.00	1.18	1.40
	5L 632 40 . 030	1/8"-1/4"	1.20	0.90	0.50	0.71	1.00	1.23	1.58	1.87	2.24



SPADFLOW 5L 632/633

Widespread Flat-Fan Nozzle

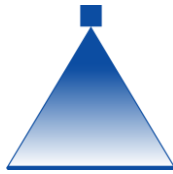


Spray angle (α)	Code	Connection [inch]	A Ø [mm]	E Ø [mm]	Flow rate [l/min]						
					P [bar]						
					0.5	1.0 <i>K factor</i>	2.0	3.0	5.0	7.0	10.0
30°	5L 632 48 . 030	1/8"-1/4"	1.50	1.10	0.80	1.13	1.60	1.96	2.53	2.99	3.58
	5L 632 56 . 030	1/8"-1/4"	2.00	1.50	1.25	1.77	2.50	3.06	3.95	4.68	5.59
	5L 632 64 . 030	1/4"	2.50	1.80	2.00	2.83	4.00	4.90	6.33	7.48	8.94
	5L 632 72 . 030	1/4"	3.00	2.40	3.15	4.46	6.30	7.72	9.96	11.79	14.09
	5L 632 76 . 030	1/4"	3.50	2.70	4.00	5.66	8.00	9.80	12.65	14.97	17.89
	5L 632 80 . 030	1/4"	4.00	3.10	5.00	7.07	10.00	12.25	15.81	18.71	22.36
45°	5L 632 30 . 045	1/8"-1/4"	0.70	0.50	0.16	0.23	0.32	0.39	0.51	0.60	0.72
	5L 632 36 . 045	1/8"-1/4"	1.00	0.60	0.31	0.44	0.63	0.77	1.00	1.18	1.40
	5L 632 40 . 045	1/8"-1/4"	1.20	0.90	0.50	0.71	1.00	1.23	1.58	1.87	2.24
	5L 632 48 . 045	1/8"-1/4"	1.50	1.10	0.80	1.13	1.60	1.96	2.53	2.99	3.58
	5L 632 56 . 045	1/8"-1/4"	2.00	1.40	1.25	1.77	2.50	3.06	3.95	4.68	5.59
	5L 632 64 . 045	1/8"-1/4"	2.50	1.80	2.00	2.83	4.00	4.90	6.33	7.48	8.94
	5L 632 67 . 045	1/4"- 3/8"	2.70	2.00	2.83	3.36	4.75	5.82	7.51	8.89	10.62
	5L 632 72 . 045	1/4"- 3/8"	3.00	2.40	3.15	4.46	6.30	7.72	9.96	11.79	14.09
	5L 632 76 . 045	1/4"- 3/8"	3.50	2.60	4.00	5.66	8.00	9.80	12.65	14.97	17.89
	5L 632 80 . 045	1/4"- 3/8"- 1/2"	4.00	3.00	5.00	7.07	10.00	12.25	15.81	18.71	22.36
	5L 632 84 . 045	1/4"- 1/2"	4.50	3.40	6.25	8.84	12.50	15.31	19.76	23.39	27.95
	5L 632 88 . 045	3/8"	5.00	3.80	8.00	11.31	16.00	19.60	25.30	29.93	35.78
	5L 632 92 . 045	3/8"	5.50	4.20	10.00	14.14	20.00	24.50	31.62	37.42	44.72
5L 632 96 . 045	3/8"	6.00	4.40	12.50	17.68	25.00	30.62	39.53	46.77	55.90	
60°	5L 632 30 . 060	1/8"-1/4"	0.70	0.40	0.16	0.23	0.32	0.39	0.51	0.60	0.72
	5L 632 33 . 060	1/8"-1/4"	0.90	0.50	0.22	0.32	0.45	0.55	0.71	0.84	1.01
	5L 632 36 . 060	1/8"-1/4"	1.00	0.60	0.31	0.44	0.63	0.77	1.00	1.18	1.40
	5L 632 40 . 060	1/8"-1/4"	1.20	0.80	0.50	0.71	1.00	1.23	1.58	1.87	2.24
	5L 632 44 . 060	1/8"-1/4"	1.35	0.90	0.62	0.88	1.25	1.53	1.98	2.34	2.80
	5L 632 48 . 060	1/8"-1/4"	1.50	1.00	0.80	1.13	1.60	1.96	2.53	2.99	3.58
	5L 632 51 . 060	1/8"-1/4"	1.65	1.10	0.95	1.34	1.90	2.33	3.00	3.56	4.25
	5L 632 56 . 060	1/8"-1/4"	2.00	1.30	1.25	1.77	2.50	3.06	3.95	4.68	5.59
	5L 632 60 . 060	1/8"-1/4"	2.20	1.50	1.58	2.23	3.15	3.86	4.98	5.89	7.04
	5L 632 64 . 060	1/4"- 3/8"	2.50	1.60	2.00	2.83	4.00	4.90	6.33	7.48	8.94
	5L 632 67 . 060	1/4"- 3/8"	2.70	1.80	2.38	3.36	4.75	5.82	7.51	8.89	10.62
	5L 632 72 . 060	1/4"- 3/8"	3.00	2.10	3.15	4.46	6.30	7.72	9.96	11.79	14.09
	5L 632 76 . 060	1/4"- 3/8"	3.50	2.30	4.00	5.66	8.00	9.80	12.65	14.97	17.89
	5L 632 80 . 060	1/4"- 1/2"	4.00	2.60	5.00	7.07	10.00	12.25	15.81	18.71	22.36
	5L 632 84 . 060	1/4"- 1/2"	4.50	3.00	6.25	8.84	12.50	15.31	19.76	23.39	27.95
	5L 632 88 . 060	1/4"- 1/2"	5.00	3.40	8.00	11.31	16.00	19.60	25.30	29.93	35.78
	5L 632 92 . 060	1/2"	5.50	4.10	10.00	14.14	20.00	24.50	31.62	37.42	44.72
	5L 632 96 . 060	1/2"	6.00	4.20	12.50	17.68	25.00	30.62	39.53	46.77	55.90
	5L 633 00 . 060	1/2"	7.00	4.80	15.75	22.27	31.50	38.57	49.80	58.92	70.43
5L 633 04 . 060	1/2"	8.00	5.50	20.00	28.28	40.00	48.99	63.25	74.83	89.44	
5L 633 08 . 060	1/2"	9.00	6.80	25.00	35.36	50.00	61.24	79.06	93.54	111.80	
75°	5L 632 14 . 075	1/8"-1/4"	0.20	0.12	-	0.04	0.05	0.06	0.08	0.09	0.11
	5L 632 16 . 075	1/8"-1/4"	0.20	0.14	-	0.05	0.07	0.08	0.10	0.12	0.15
	5L 632 18 . 075	1/8"-1/4"	0.20	0.16	-	0.06	0.08	0.10	0.13	0.15	0.18
	5L 632 21 . 075	1/8"-1/4"	0.40	0.20	-	0.08	0.11	0.14	0.18	0.21	0.25
	5L 632 24 . 075	1/8"-1/4"	0.50	0.30	-	0.12	0.16	0.20	0.26	0.30	0.36
	5L 632 27 . 090	1/8"-1/4"	0.60	0.30	0.11	0.16	0.22	0.27	0.35	0.41	0.49
90°	5L 632 21 . 090	1/8"-1/4"	0.40	0.20	-	0.08	0.11	0.14	0.18	0.21	0.25
	5L 632 27 . 090	1/8"-1/4"	0.60	0.30	0.11	0.16	0.22	0.27	0.35	0.41	0.49
	5L 632 30 . 090	1/8"-1/4"	0.70	0.40	0.16	0.23	0.32	0.39	0.51	0.60	0.72
	5L 632 33 . 090	1/8"-1/4"	0.90	0.50	0.22	0.32	0.45	0.55	0.71	0.84	1.01
	5L 632 36 . 090	1/8"-1/4"	1.00	0.50	0.31	0.44	0.63	0.77	1.00	1.18	1.41
	5L 632 40 . 090	1/8"-1/4"	1.20	0.70	0.50	0.71	1.00	1.23	1.58	1.87	2.24
	5L 632 44 . 090	1/8"-1/4"	1.35	0.80	0.62	0.88	1.25	1.53	1.98	2.34	2.80
	5L 632 48 . 090	1/8"-1/4"	1.50	0.80	0.80	1.13	1.60	1.96	2.53	2.99	3.58
	5L 632 51 . 090	1/8"-1/4"	1.65	0.90	0.95	1.34	1.90	2.33	3.00	3.56	4.25
	5L 632 56 . 090	1/8"-1/4"	2.00	1.10	1.25	1.77	2.50	3.06	3.95	4.68	5.59
	5L 632 60 . 090	1/8"-1/4"	2.20	1.20	1.58	2.23	3.15	3.86	4.98	5.89	7.04
	5L 632 64 . 090	1/4"- 3/8"	2.50	1.30	2.00	2.83	4.00	4.90	6.33	7.48	8.94
	5L 632 67 . 090	1/4"- 3/8"	2.70	1.40	2.38	3.36	4.75	5.82	7.51	8.89	10.62
	5L 632 72 . 090	1/4"- 3/8"	3.00	1.70	3.15	4.46	6.30	7.72	9.96	11.79	14.09



SPADFLOW 5L 632/633

Widespread Flat-Fan Nozzle



Spray angle (α)	Code	Connection [inch]	A Ø [mm]	E Ø [mm]	Flow rate [l/min]						
					P [bar]						
					0.5	1.0 <i>K factor</i>	2.0	3.0	5.0	7.0	10.0
90°	5L 632 76 . 090	1/4"- 3/8"	3.50	1.90	4.00	5.66	8.00	9.80	12.65	14.97	17.89
	5L 632 80 . 090	1/4"- 1/2"	4.00	2.40	5.00	7.07	10.00	12.25	15.81	18.71	22.36
	5L 632 84 . 090	1/4"- 1/2"	4.50	2.40	6.25	8.84	12.50	15.31	19.76	23.39	27.95
	5L 632 88 . 090	1/4"- 1/2"	5.00	3.10	8.00	11.31	16.00	19.60	25.30	29.93	35.78
	5L 632 92 . 090	1/2"	5.50	3.60	10.00	14.14	20.00	24.50	31.62	37.42	44.72
	5L 632 96 . 090	1/2"	6.00	3.90	12.50	17.68	25.00	30.62	39.53	46.77	55.90
120°	5L 632 18 . 120	1/8"-1/4"	0.35	0.20	-	0.06	0.08	0.10	0.13	0.15	0.18
	5L 632 21 . 120	1/8"-1/4"	0.40	0.20	-	0.08	0.11	0.14	0.18	0.21	0.25
	5L 632 24 . 120	1/8"-1/4"	0.50	0.20	-	0.12	0.16	0.20	0.26	0.30	0.36
	5L 632 27 . 120	1/8"-1/4"	0.60	0.30	-	0.16	0.22	0.27	0.35	0.41	0.49
	5L 632 30 . 120	1/8"-1/4"	0.70	0.30	0.16	0.23	0.32	0.39	0.51	0.60	0.72
	5L 632 33 . 120	1/8"-1/4"	0.90	0.40	0.22	0.32	0.45	0.55	0.71	0.84	1.01
	5L 632 36 . 120	1/8"-1/4"	1.00	0.50	0.31	0.44	0.63	0.77	1.00	1.18	1.41
	5L 632 40 . 120	1/8"-1/4"	1.20	0.60	0.50	0.71	1.00	1.23	1.58	1.87	2.24
	5L 632 44 . 120	1/8"-1/4"	1.35	0.60	0.62	0.88	1.25	1.53	1.98	2.34	2.80
	5L 632 48 . 120	1/8"-1/4"	1.50	0.60	0.80	1.13	1.60	1.96	2.53	2.99	3.58
	5L 632 51 . 120	1/8"-1/4"	1.65	0.90	0.95	1.34	1.90	2.33	3.00	3.56	4.25
	5L 632 56 . 120	1/8"-1/4"	2.00	0.90	1.25	1.77	2.50	3.06	3.95	4.68	5.59
	5L 632 60 . 120	1/8"-1/4"	2.20	1.10	1.58	2.23	3.15	3.86	4.98	5.89	7.04
	5L 632 64 . 120	1/4"- 3/8"	2.50	1.30	2.00	2.83	4.00	4.90	6.33	7.48	8.94
	5L 632 67 . 120	1/4"- 3/8"	2.70	1.40	2.38	3.36	4.75	5.82	7.51	8.89	10.62
	5L 632 72 . 120	1/4"- 3/8"	3.00	1.60	3.15	4.46	6.30	7.72	9.96	11.79	14.09
	5L 632 76 . 120	1/4"- 3/8"	3.50	1.70	4.00	5.66	8.00	9.80	12.65	14.97	17.89
	5L 632 80 . 120	1/4"- 1/2"	4.00	2.00	5.00	7.07	10.00	12.25	15.81	18.71	22.36
	5L 632 84 . 120	1/4"- 1/2"	4.50	2.30	6.25	8.84	12.50	15.31	19.76	23.39	27.95
	5L 632 88 . 120	1/2"	5.00	2.60	8.00	11.31	16.00	19.60	25.30	29.93	35.78
5L 632 92 . 120	1/2"	5.50	2.90	10.00	14.14	20.00	24.50	31.62	37.42	44.72	