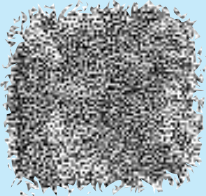
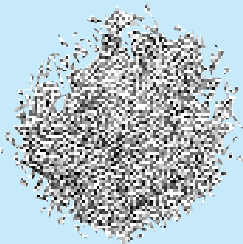


FULL CONE NOZZLES

* Spray generated in a similar manner to the hollow cone but is balanced by an axial liquid component mixing within the swirl chamber to fill in the cone.

* Medium impact can be obtained.



Spray Footprints



FullCone FCX and TN Series



TYPICAL APPLICATIONS

- * Spray rinsing
- * Foam control
- * Strand cooling
- * Industrial washing machines
- * Vegetable washing
- * Dust suppression
- * Gas scrubbing
- * Fire protection
- * Odour control
- * Chemical processing

SPRAY CHARACTERISTICS

- * Available in 70°, 80° and 110° angles at 3 bar (angle may vary with pressure).
- * Medium impact spray, impact greater with narrow spray angles.
- * Full cone spray pattern with uniform distribution.

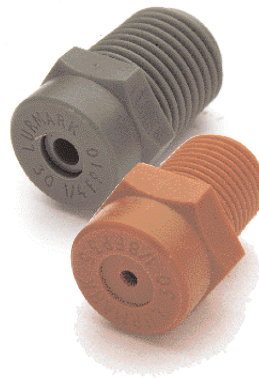
CONSTRUCTION

- * All tips are fully interchangeable.
- * Tips have an internal swirl core to generate a full cone pattern.
- * Tips can be assembled in a 4-piece unit design comprising of nozzle body, filter, tip and cap nut - refer to page 38 for more details.

MATERIALS

- * Standard materials are brass, acetal and 316 stainless steel.

Full Cone FP Series



TYPICAL APPLICATIONS

- * Extrusion cooling
- * Industrial washing machines
- * Gravel washing
- * Vegetable cleaning
- * Surface spraying
- * Dust suppression
- * Food processing
- * Foam control
- * Gas Scrubbing

SPRAY CHARACTERISTICS

- * Available in 45° to 120° angles at 3 bar (angle may vary with pressure).
- * Low impact spray.
- * Full cone spray pattern with uniform distribution.
- * No overlapping required.

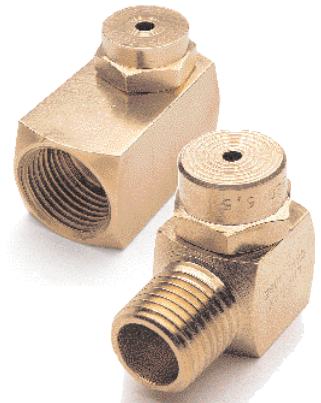
CONSTRUCTION

- * All tips are fully interchangeable.
- * Fixed internal impeller creates a liquid swirl, which generates a full cone pattern.
- * Hex body prevents distortion of the orifice for quick and easy installation.

MATERIALS

- * Standard material is PVDF.

Full Cone GN Series



TYPICAL APPLICATIONS

- * Fire protection
- * Industrial washing machines
- * Gas scrubbing
- * Gas conditioners
- * Vegetable cleaning
- * Gravel washing
- * Spray cooling
- * Foam control
- * Dust suppression

SPRAY CHARACTERISTICS

- * Available in 50° and 120° angles at 3 bar (angle varies with pressure).
- * Medium impact spray of fine/medium droplets. (greater impact as spray angle decreases).
- * Full cone pattern of uniformly distributed droplets.
- * Square pattern available on request.

CONSTRUCTION

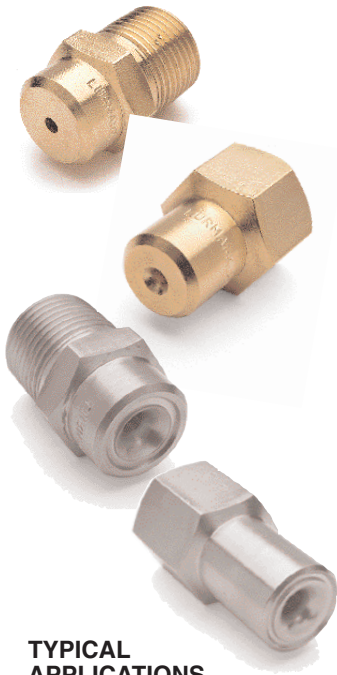
- * Two piece nozzle body with removable internal swirl core to produce full cone pattern.
- * Right angled design
- * Square body for quick and easy installation.

MATERIALS

- * Standard material is brass.

Refer to page 20 for flow rate chart

Full Cone FN Series



TYPICAL APPLICATIONS

- * Agitation
- * Gas scrubbing
- * Fire protection
- * Industrial washing machines
- * Vegetable washing
- * Surface spraying
- * Gravel washing

SPRAY CHARACTERISTICS

- * Available in 30°, 70°, 90° and 110° angles at 3 bar
- * Medium impact spray (greater impact as spray angle decreases)
- * Available as a full cone pattern.
- * FN series available with a square foot print.

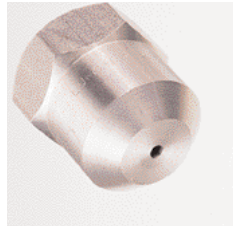
CONSTRUCTION

- * Nozzle body with internal swirl core that produces the full cone pattern.
- * Available with male or female threads.
- * Hex body prevents distortion of the orifice for quick and easy installation.

MATERIALS

- * Standard materials are brass, 303 and 316 stainless steel, polypropylene and PVC.

Full Cone L Series



TYPICAL APPLICATIONS

- * Cooling in the steel industry
- * Continuous casting applications

SPRAY CHARACTERISTICS

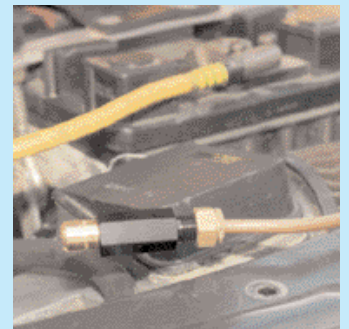
- * Available in 35°, 50°, 65°, 80°, 85°, 90° and 120° spray angles at 3 bar (angle varies with pressure)
- * High impact spray
- * Full cone pattern of uniformly distributed droplets.

CONSTRUCTION

- * One piece 3/8" female threaded body (LF) as standard, male pipe design available on request.
- * Four start internal core to produce the full cone pattern.

MATERIALS

- * Standard materials are brass, 303 and 316 stainless steel.



Refer to pages 20 and 21
for flow rate chart

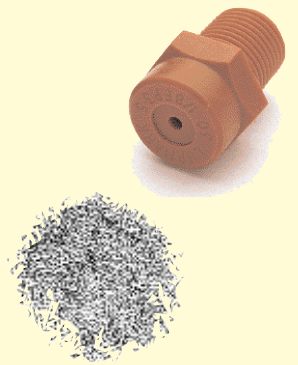
FCX AND TN SERIES (FULL CONE) - FLOW CHART

TIP REFERENCES		Flow (L/min) @ Pressure (bar)							Spray Angle @ 3 bar	
METAL	ACETAL	1	2	3	4	5	7	10	Standard Tip	Wide Tip
TN1		0.46	0.64	0.79	0.91	1.02	1.21	1.44	70	-
	FCX02	0.74	1.05	1.29	1.49	1.66	1.97	2.35	80	-
TN2		0.91	1.29	1.58	1.82	2.04	2.41	2.88	70	110
	FCX03	1.12	1.58	1.93	2.23	2.50	2.95	3.53	80	-
TN3		1.37	1.93	2.37	2.74	3.06	3.62	4.32	70	110
	FCX04	1.49	2.11	2.58	2.98	3.33	3.94	4.71	80	-
TN3.5		1.60	2.26	2.76	3.19	3.57	4.22	5.94	70	110
	FCX05	1.85	2.53	3.22	3.72	4.15	4.92	5.89	80	-
TN5		2.28	3.22	3.95	4.56	5.10	6.03	7.21	70	110
	FCX06	2.23	3.15	3.87	4.47	4.99	5.91	7.05	80	-
TN6.5		2.96	4.19	5.13	5.93	6.63	7.84	9.37	70	110
	FCX08	2.98	4.21	5.15	5.95	6.66	7.88	9.42	80	-
TN10		4.56	6.45	7.90	9.12	10.19	12.06	14.42	70	110
TN12		5.47	7.74	9.48	10.94	12.23	14.47	17.30	70	110



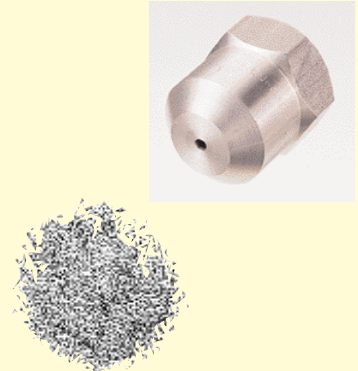
FP SERIES (FULL CONE) - FLOW CHART

NOZZLE REF	Colour	Thread Connections (BSP)		Flow (L/min) @ Pressure (bar)								Spray Angle @ 1 bar
		1/8"	1/4"	0.5	1	2	3	4	5	7	10	
FP1	Orange	x		0.32	0.46	0.64	0.79	0.91	1.02	1.21	1.44	45
FP1.3W	Natural	x		0.42	0.59	0.84	1.03	1.19	1.33	1.57	1.87	90
FP1.5	Red	x		0.48	0.68	0.97	1.18	1.37	1.53	1.81	2.16	55
FP2	Camb Blue	x		0.64	0.91	1.29	1.58	1.82	2.04	2.41	2.88	60
FP2W	Camb Blue	x		0.64	0.91	1.29	1.58	1.82	2.04	2.41	2.88	90
FP3	Lime Green	x		0.97	1.37	1.93	2.37	2.74	3.06	3.62	4.32	50
FP3.5	Terracota	x		1.13	1.60	2.26	2.76	3.19	3.57	4.22	5.05	60
FP3.7W	Grey	x		1.19	1.69	2.39	2.92	3.37	3.77	4.46	5.33	120
FP5	Royal Blue	x		1.61	2.28	3.22	3.95	4.56	5.10	6.03	7.21	80
FP6.5	Purple		x	2.10	2.96	4.19	5.13	5.93	6.63	7.84	9.37	50
FP10	Olive Green		x	3.22	4.56	6.45	7.90	9.12	10.19	12.06	14.42	70



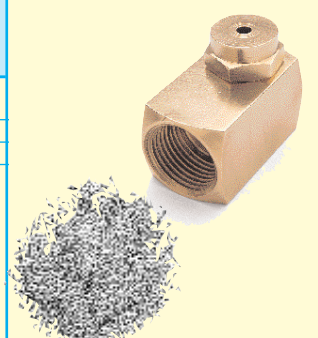
L SERIES (FULL CONE) - FLOW CHART

NOZZLE REFERENCE	Flow (L/min) @ bar					
	1.0	2.8	3.0	4.0	5.0	7.0
L15	0.90	1.50	1.56	1.81	2.02	2.39
L20	1.20	2.00	2.09	2.41	2.69	3.19
L25	1.51	2.50	2.61	3.01	3.37	3.98
L30	1.81	3.00	3.13	3.61	4.04	4.78
L35	2.11	3.50	3.65	4.22	4.71	5.58
L38	2.29	3.80	3.96	4.58	5.12	6.05
L40	2.41	4.00	4.17	4.82	5.39	6.37
L45	2.71	4.50	4.69	5.42	6.06	7.17
L50	3.01	5.00	5.21	6.02	6.73	7.97
L55	3.31	5.50	5.74	6.62	7.41	8.76
L60	3.61	6.00	6.26	7.23	8.08	9.56
L70	4.22	7.00	7.30	8.43	9.43	11.15
L75	4.52	7.50	7.82	9.03	10.10	11.95
L80	4.82	8.00	8.34	9.63	10.77	12.75
L85	5.12	8.50	8.87	10.24	11.44	13.54
L90	5.42	9.00	9.39	10.84	12.12	14.34
L120	7.23	12.00	12.52	14.45	16.16	19.12
L137	8.25	13.71	14.29	16.50	18.45	21.83



GN SERIES (FULL CONE) - FLOW CHART

NOZZLE REFERENCE	Thread connections (BSP)			Flow (L/min) @ Pressure (bar)						Spray Angle @ 3 bar	
	1/8"	1/4"	3/8"	1	2	3	4	5	7		10
GN2	X			0.91	1.29	1.58	1.82	2.04	2.41	2.88	50
GN3	X			1.37	1.93	2.37	2.74	3.06	3.62	4.32	65
GN3.9	X			1.78	2.51	3.08	3.56	3.98	4.70	5.62	84
GN4.3	X			1.96	2.77	3.40	3.92	4.38	5.19	6.20	120
GN5	X			2.28	3.22	3.95	4.56	5.10	6.03	7.21	65
GN6.5		X		2.96	4.19	5.13	5.93	6.63	7.84	9.37	50
GN8	X			3.65	5.16	6.32	7.29	8.16	9.65	11.53	120
GN10		X		4.56	6.45	7.90	9.12	10.19	12.06	14.42	67
GN12.5		X		5.70	8.06	9.87	11.40	12.74	15.08	18.02	74
GN14		X		6.38	9.03	11.05	12.76	14.27	16.89	20.18	120
GN15			X	6.84	9.67	11.84	13.68	15.29	18.09	21.62	67



FN SERIES (FULL CONE) - FLOW CHART

NOZZLE REFERENCE	Thread Connection (BSP)						Flow (L/min) @ Operating Pressure (bar)								Spray Angle (Degrees) @ 3 bar			
	1/8"	1/4"	3/8"	1/2"	3/4"	1"	0.5	1	2	3	4	5	7	10	30	70	90	110
FN0.8	x						0.33	0.46	0.65	0.80	0.92	1.03	1.22	1.46	x	x		
FN1.0	x	x					0.41	0.58	0.82	1.00	1.15	1.29	1.53	1.83			x	
FN1.2	x	x					0.49	0.69	0.98	1.20	1.39	1.55	1.83	2.19	x	x		
FN1.6	x	x					0.65	0.92	1.31	1.60	1.85	2.07	2.44	2.92	x	x		
FN2.0	x	x					0.82	1.15	1.63	2.00	2.31	2.58	3.06	3.65			x	
FN2.4	x	x					0.98	1.39	1.96	2.40	2.77	3.10	3.67	4.38	x	x		
FN3.2	x	x					1.31	1.85	2.61	3.20	3.70	4.13	4.89	5.84	x	x		
FN4.0	x	x					1.63	2.31	3.27	4.00	4.62	5.16	6.11	7.30	x	x	x	
FN5.0		x					2.04	2.89	4.08	5.00	5.77	6.45	7.64	9.13				x
FN5.1		x	x				2.08	2.94	4.16	5.10	5.89	6.58	7.79	9.31	x	x		
FN6.3		x	x				2.57	3.64	5.14	6.30	7.27	8.13	9.62	11.50	x	x		
FN7.3			x				2.98	4.21	5.96	7.30	8.43	9.42	11.15	13.33	x			
FN9.5			x				3.88	5.48	7.76	9.50	10.97	12.26	14.51	17.34	x	x		
FN10.0			x				4.08	5.77	8.16	10.00	11.55	12.91	15.28	18.26				x
FN11.0			x				4.49	6.35	8.98	11.00	12.70	14.20	16.80	20.08				x
FN12.0			x	x			4.90	6.93	9.80	12.00	13.86	15.49	18.33	21.91	x	x		
FN17.0			x	x			6.94	9.81	13.88	17.00	19.63	21.95	25.97	31.04	x	x		
FN19.0			x	x			7.76	10.97	15.51	19.00	21.94	24.53	29.02	34.69	x	x		
FN20.0				x			8.16	11.55	16.33	20.00	23.09	25.82	30.55	36.51				x
FN22.0				x			8.98	12.70	17.96	22.00	25.40	28.40	33.61	40.17				x
FN24.0				x	x		9.80	13.86	19.60	24.00	27.71	30.98	36.66	43.82	x	x		
FN30.0				x	x		12.25	17.32	24.49	30.00	34.64	38.73	45.83	54.77	x	x		
FN37.0				x	x	x	15.11	21.36	30.21	37.00	42.72	47.77	56.52	67.55	x	x		x
FN43.0				x	x	x	17.55	24.83	35.11	43.00	49.65	55.51	65.68	78.51				x
FN45.0				x	x	x	18.37	25.98	36.74	45.00	51.96	58.09	68.74	82.16				x
FN47.0				x	x	x	19.19	27.14	38.38	47.00	54.27	60.68	71.79	85.81	x	x		
FN60.0				x	x	x	24.49	34.64	48.99	60.00	69.28	77.46	91.65	109.54				x
FN71.0				x	x	x	28.99	40.99	57.97	71.00	81.98	91.66	108.45	129.63	x	x		
FN90.0				x	x	x	36.74	51.96	73.48	90.00	103.92	116.19	137.48	164.32				
FN118.0				x	x	x	48.17	68.13	96.35	118.00	136.25	152.34	180.25	215.44			x	x
FN150.0				x	x	x	61.24	86.60	122.47	150.00	173.21	193.65	229.13	273.86			x	x

