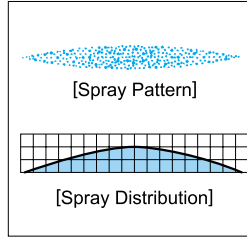


3-piece Structure Standard Flat Spray Nozzles

VV / V



[Features]

- Flat spray pattern with uniform distribution throughout pattern area having gradually tapered edges.
- Tapered edges overlap to provide uniformity of spray distribution in multiple-nozzle arrangements.

[Standard Pressure]

0,3MPa

[Applications]

- Cleaning : Cars, vehicles, containers, films, felts, filters, screens, bottles, gravel, stones, sand, metal parts, machines, steel plates, steel pieces, etc.
- Spraying : Etchants, oils, lubricants, glues, solutions, insecticides, herbicides, etc.
- Cooling : Gases, smokes, heat exchangers, tanks, steels, roofs, etc.
- Water screen : Fire protection, heat protection, dust suppression, deodorization, etc.

Flat Spray

VV-series

VV-series	
Structure	<ul style="list-style-type: none"> • All metal, 3-piece structure. • Comprises three parts : Spray tip, cap and adaptor. • Worn-out spray tip can be replaced separately. • Removable strainer is fitted and supplied as standard part with small capacity nozzle.
Material	<ul style="list-style-type: none"> • B (brass) or S303 (stainless steel 303) • Optional material : S316 or others

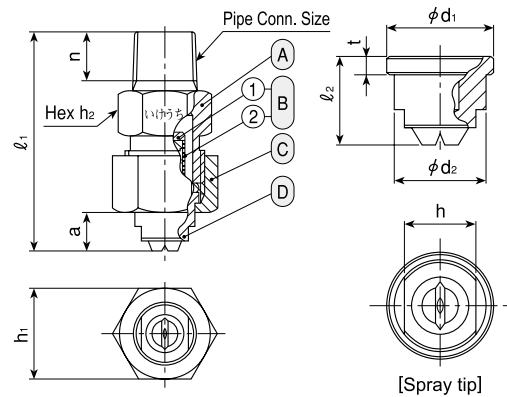
[Complete nozzle]

Series	Pipe Conn. Size	Dimensions(mm)					Mass(g)	
		ℓ_1	h_1	h_2	a	n	B	S303
VV	1/4M	44.5	19	17	8	10.5	60	56

*For VV with strainer, add 2-5g to the above mass and 2mm to the above ℓ_1 length.

[Spray tip]

Series	Pipe Conn. Size of Complete Nozzle	Dimensions(mm)					Mass(g)	
		ℓ_2	ϕd_1	ϕd_2	h	t	B	S303
VV	1/4M	12.5	14.5	12.5	10	2.5	14	13



- Ⓐ Adaptor
- Ⓑ Strainer (① Strainer holder ② Strainer screen)
- Ⓒ Cap
- Ⓓ Spray tip

[Note] Appearance and dimensions may differ slightly depending on materials and nozzle codes.

V-series

V-series (with ceramic orifice inserted)	
Structure	<ul style="list-style-type: none"> • 3-piece structure with ceramic orifice inserted. • Comprises three parts : Spray tip, cap and adaptor. • Worn-out spray tip can be replaced separately. • Removable strainer is fitted and supplied as standard part with small capacity nozzle. • CERTIIM® is one-shot injection molded spray tip created by molding the precision-made ceramic orifice into a plastic retainer.
Material	<ul style="list-style-type: none"> • Spray orifice : ceramic • Metal parts : B (brass) or S303 (stainless steel 303) • CERTIIM®'s plastic retainer : PVDF (polyvinylidene fluoride) • Optional material : S316 or others

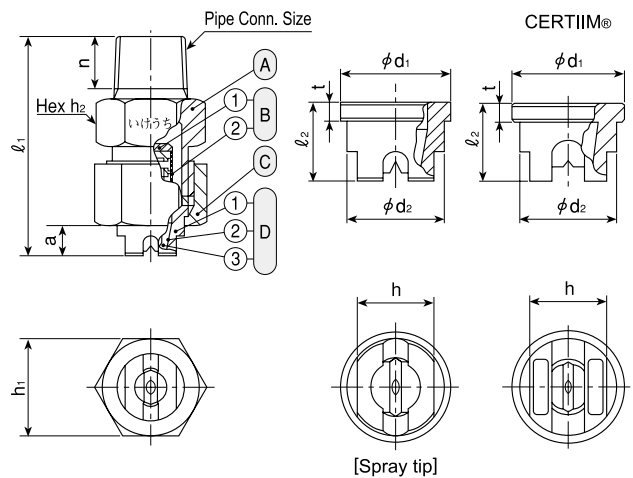
[Complete Nozzle]

Series	Pipe Conn. Size	Dimensions(mm)					Mass(g)		
		ℓ_1	h_1	h_2	a	n	B	S303	CERTIIM®
V	1/4M	42.5	19	17	6	10.5	53	49	—

*For V with strainer, add 2-5g to the above mass and 2mm to the above ℓ_1 length.

[Spray Tip]

Series	Pipe Conn. Size of Complete Nozzle	Dimensions(mm)					Mass(g)		
		ℓ_2	ϕd_1	ϕd_2	h	t	B	S303	CERTIIM®
V	1/4M	10.5	14.5	12.5	10	2.5	7	6.5	—
	CERTIIM® 1/4M	10.5	14.5	12.5	10	2.5	—	—	2



- Ⓐ Adaptor
- Ⓑ Strainer (① Strainer holder ② Strainer screen)
- Ⓒ Cap
- Ⓓ Spray tip (① Retainer ② Adhesive : Araldite® ③ Ceramic orifice)

[Note] Appearance and dimensions may differ slightly depending on materials and nozzle codes.

3-piece Structure Standard Flat Spray Nozzles

VV / V-series

Flat Spray

Spray Angle Code	Spray Capacity Code	VV (All metal)		V (Ceramic orifice inserted)		Spray Angle			Spray Capacity (ℓ/min)								Mean Drop. Dia. (μm)	Free Pass. Dia. (mm)	Strainer Mesh Size
		¼M	¼M	CER-TIIM®	0.15 MPa	0.3 MPa	0.7 MPa	0.05 MPa	0.1 MPa	0.15 MPa	0.2 MPa	0.3 MPa	0.5 MPa	0.7 MPa	1 MPa	2 MPa			
115°	03	●	●	○	101°	115°	124°	—	0.17	0.21	0.24	0.30	0.39	0.46	0.55	0.77	140	0.2	200
	04	●	●	○	102°	115°	124°	—	0.23	0.28	0.33	0.40	0.52	0.61	0.73	1.03	150	0.2	200
	05	●	●	○	102°	115°	124°	—	0.29	0.35	0.41	0.50	0.65	0.76	0.91	1.29	160	0.3	150
	07	●	●	○	103°	115°	124°	—	0.40	0.49	0.57	0.70	0.90	1.07	1.28	1.81	170	0.3	150
	10	●	●	○	103°	115°	124°	0.41	0.58	0.71	0.82	1.00	1.29	1.53	1.83	2.58	180	0.4	150
	15	●	●	○	104°	115°	123°	0.61	0.87	1.06	1.23	1.50	1.94	2.29	2.74	3.87	190	0.5	100
	20	●	●	○	104°	115°	123°	0.82	1.15	1.41	1.63	2.00	2.58	3.06	3.65	5.16	210	0.6	100
	30	●	●	○	105°	115°	122°	1.23	1.73	2.12	2.45	3.00	3.88	4.58	5.48	7.75	230	0.8	50
	40	●	●	○	106°	115°	122°	1.63	2.31	2.83	3.27	4.00	5.16	6.11	7.30	10.3	250	0.8	50
	60	○	○	○	107°	115°	121°	2.45	3.46	4.24	4.90	6.00	7.75	9.17	11.0	15.5	270	1.0	—
	80	○	○	○	107°	115°	121°	3.27	4.62	5.66	6.53	8.00	10.3	12.2	14.6	20.6	310	1.2	—
	100	○	○	○	107°	115°	120°	4.08	5.77	7.07	8.17	10.0	12.9	15.3	18.3	25.8	340	1.4	—
200	○	○	○	109°	115°	120°	8.16	11.5	14.1	16.3	20.0	25.8	30.6	36.5	51.6	510	2.4	—	
90°	02	●	●	○	76°	90°	100°	—	0.12	0.14	0.16	0.20	0.26	0.31	0.37	0.52	145	0.2	200
	03	●	●	○	76°	90°	100°	—	0.17	0.21	0.24	0.30	0.39	0.46	0.55	0.77	150	0.2	200
	04	●	●	○	77°	90°	100°	—	0.23	0.28	0.33	0.40	0.52	0.61	0.73	1.03	160	0.3	150
	05	●	●	○	77°	90°	100°	—	0.29	0.35	0.41	0.50	0.65	0.76	0.91	1.29	170	0.3	150
	07	●	●	○	78°	90°	100°	—	0.40	0.49	0.57	0.70	0.90	1.07	1.28	1.81	180	0.4	150
	10	●	●	○	78°	90°	99°	0.41	0.58	0.71	0.82	1.00	1.29	1.53	1.83	2.58	190	0.5	100
	15	●	●	○	79°	90°	99°	0.61	0.87	1.06	1.23	1.50	1.94	2.29	2.74	3.87	200	0.6	100
	20	●	●	○	79°	90°	98°	0.82	1.15	1.41	1.63	2.00	2.58	3.06	3.65	5.16	210	0.7	50
	30	●	●	○	80°	90°	97°	1.23	1.73	2.12	2.45	3.00	3.88	4.58	5.48	7.75	230	0.9	50
	40	○	○	○	81°	90°	97°	1.63	2.31	2.83	3.27	4.00	5.16	6.11	7.30	10.3	250	1.1	—
	50	○	○	○	81°	90°	97°	2.04	2.89	3.54	4.08	5.00	6.46	7.64	9.13	12.9	170	1.2	—
	60	○	○	○	82°	90°	96°	2.45	3.46	4.24	4.90	6.00	7.75	9.17	11.0	15.5	210	1.3	—
	80	○	○	○	82°	90°	96°	3.27	4.62	5.66	6.53	8.00	10.3	12.2	14.6	20.6	270	1.5	—
	100	○	○	○	82°	90°	96°	4.08	5.77	7.07	8.17	10.0	12.9	15.3	18.3	25.8	310	1.8	—
120	○	○	○	83°	90°	95°	4.90	6.93	8.49	9.80	12.0	15.5	18.3	21.9	31.0	340	1.9	—	
140	○	○	○	83°	90°	95°	5.72	8.08	9.90	11.4	14.0	18.1	21.4	25.6	36.1	370	2.1	—	
170	○	○	○	83°	90°	95°	6.94	9.82	12.0	13.9	17.0	22.0	26.0	31.1	43.9	430	2.3	—	
200	○	○	○	84°	90°	95°	8.16	11.5	14.1	16.3	20.0	25.8	30.6	36.5	51.6	540	2.4	—	
80°	02	●	●	○	67°	80°	90°	—	0.12	0.14	0.16	0.20	0.26	0.31	0.37	0.52	150	0.2	200
	03	●	●	○	67°	80°	90°	—	0.17	0.21	0.24	0.30	0.39	0.46	0.55	0.77	160	0.3	150
	04	●	●	○	67°	80°	90°	—	0.23	0.28	0.33	0.40	0.52	0.61	0.73	1.03	170	0.3	150
	05	●	●	○	67°	80°	90°	—	0.29	0.35	0.41	0.50	0.65	0.76	0.91	1.29	180	0.3	150
	07	●	●	○	68°	80°	89°	—	0.40	0.49	0.57	0.70	0.90	1.07	1.28	1.81	190	0.4	150
	10	●	●	○	68°	80°	89°	0.41	0.58	0.71	0.82	1.00	1.29	1.53	1.83	2.58	200	0.5	100
	15	●	●	○	69°	80°	88°	0.61	0.87	1.06	1.23	1.50	1.94	2.29	2.74	3.87	210	0.7	50
	20	●	●	○	69°	80°	88°	0.82	1.15	1.41	1.63	2.00	2.58	3.06	3.65	5.16	220	0.8	50
	30	○	○	○	70°	80°	87°	1.23	1.73	2.12	2.45	3.00	3.88	4.58	5.48	7.75	240	1.0	—
	40	○	○	○	71°	80°	87°	1.63	2.31	2.83	3.27	4.00	5.16	6.11	7.30	10.3	260	1.2	—
	50	○	○	○	71°	80°	86°	2.04	2.89	3.54	4.08	5.00	6.46	7.64	9.13	12.9	280	1.4	—
	60	○	○	○	72°	80°	86°	2.45	3.46	4.24	4.90	6.00	7.75	9.17	11.0	15.5	210	1.5	—
	80	○	○	○	72°	80°	86°	3.27	4.62	5.66	6.53	8.00	10.3	12.2	14.6	20.6	270	1.7	—
	100	○	○	○	72°	80°	85°	4.08	5.77	7.07	8.17	10.0	12.9	15.3	18.3	25.8	310	2.0	—
120	○	○	○	73°	80°	85°	4.90	6.93	8.49	9.80	12.0	15.5	18.3	21.9	31.0	340	2.3	—	
200	○	○	○	74°	80°	85°	8.16	11.5	14.1	16.3	20.0	25.8	30.6	36.5	51.6	550	2.8	—	
65°	02	●	●	○	52°	65°	75°	—	0.12	0.14	0.16	0.20	0.26	0.31	0.37	0.52	155	0.2	200
	03	●	●	○	52°	65°	75°	—	0.17	0.21	0.24	0.30	0.39	0.46	0.55	0.77	160	0.3	150
	04	●	●	○	52°	65°	75°	—	0.23	0.28	0.33	0.40	0.52	0.61	0.73	1.03	170	0.3	150
	05	●	●	○	52°	65°	74°	—	0.29	0.35	0.41	0.50	0.65	0.76	0.91	1.29	180	0.4	150
	07	●	●	○	53°	65°	74°	—	0.40	0.49	0.57	0.70	0.90	1.07	1.28	1.81	190	0.5	100
	10	●	●	○	54°	65°	73°	0.41	0.58	0.71	0.82	1.00	1.29	1.53	1.83	2.58	200	0.6	100
	15	●	●	○	54°	65°	73°	0.61	0.87	1.06	1.23	1.50	1.94	2.29	2.74	3.87	210	0.8	50
	20	●	●	○	55°	65°	72°	0.82	1.15	1.41	1.63	2.00	2.58	3.06	3.65	5.16	220	0.9	50
	30	○	○	○	56°	65°	72°	1.23	1.73	2.12	2.45	3.00	3.88	4.58	5.48	7.75	240	1.1	—
	40	○	○	○	56°	65°	71°	1.63	2.31	2.83	3.27	4.00	5.16	6.11	7.30	10.3	260	1.3	—
	50	○	○	○	57°	65°	71°	2.04	2.89	3.54	4.08	5.00	6.46	7.64	9.13	12.9	280	1.5	—
	60	○	○	○	57°	65°	71°	2.45	3.46	4.24	4.90	6.00	7.75	9.17	11.0	15.5	210	1.6	—
	80	○	○	○	58°	65°	71°	3.27	4.62	5.66	6.53	8.00	10.3	12.2	14.6	20.6	270	1.9	—
	100	○	○	○	58°	65°	70°	4.08	5.77	7.07	8.17	10.0	12.9	15.3	18.3	25.8	310	2.1	—
120	○	○	○	58°	65°	70°	4.90	6.93	8.49	9.80	12.0	15.5	18.3	21.9	31.0	340	2.3	—	
140	○	○	○	59°	65°	69°	5.72	8.08	9.90	11.4	14.0	18.1	21.4	25.6	36.1	370	2.5	—	
170	○	○	○	59°	65°	69°	6.94	9.82	12.0	13.9	17.0	22.0	26.0	31.1	43.9	430	2.8	—	
200	○	○	○	59°	65°	69°	8.16	11.5	14.1	16.3	20.0	25.8	30.6	36.5	51.6	580	3.0	—	

Spray Angle Code	Spray Capacity Code	V (Ceramic orifice inserted)			Spray Angle			Spray Capacity (ℓ/min)								Mean Drop. Dia. (μm)	Free Pass. Dia. (mm)	Strainer Mesh Size	
		VV (All metal)	1/4M	CER-TIIM®	0.15 MPa	0.3 MPa	0.7 MPa	0.05 MPa	0.1 MPa	0.15 MPa	0.2 MPa	0.3 MPa	0.5 MPa	0.7 MPa	1 MPa				2 MPa
40°	05	●			30°	40°	48°	—	0.29	0.35	0.41	0.50	0.65	0.76	0.91	1.29	230	0.4	150
	07	●			30°	40°	48°	—	0.40	0.49	0.57	0.70	0.90	1.07	1.28	1.81	∫	0.5	100
	10	●			31°	40°	47°	0.41	0.58	0.71	0.82	1.00	1.29	1.53	1.83	2.58	∫	0.7	50
	20	○			32°	40°	46°	0.82	1.15	1.41	1.63	2.00	2.58	3.06	3.65	5.16	380	1.0	—
	30	○			33°	40°	46°	1.23	1.73	2.12	2.45	3.00	3.88	4.58	5.48	7.75	∫	1.3	—
	40	○			33°	40°	45°	1.63	2.31	2.83	3.27	4.00	5.16	6.11	7.30	10.3	∫	1.5	—
	80	○			34°	40°	44°	3.27	4.62	5.66	6.53	8.00	10.3	12.2	14.6	20.6	∫	2.1	—
	200	○			35°	40°	44°	4.90	6.93	8.49	9.80	12.0	15.5	18.3	21.9	31.0	∫	2.8	—
25°	05	●			18°	25°	32°	—	0.29	0.35	0.41	0.50	0.65	0.76	0.91	1.29	270	0.5	100
	07	●			18°	25°	32°	—	0.40	0.49	0.57	0.70	0.90	1.07	1.28	1.81	∫	0.6	100
	10	●			18°	25°	32°	0.41	0.58	0.71	0.82	1.00	1.29	1.53	1.83	2.58	∫	0.8	50
	15	○			19°	25°	31°	0.61	0.87	1.06	1.23	1.50	1.94	2.29	2.74	3.87	440	1.0	—
	30	○			19°	25°	30°	1.23	1.73	2.12	2.45	3.00	3.88	4.58	5.48	7.75	∫	1.4	—
	40	○			19°	25°	30°	1.63	2.31	2.83	3.27	4.00	5.16	6.11	7.30	10.3	∫	1.7	—
	80	○			20°	25°	29°	3.27	4.62	5.66	6.53	8.00	10.3	12.2	14.6	20.6	∫	2.3	—
	200	○			21°	25°	27°	8.16	11.5	14.1	16.3	20.0	25.8	30.6	36.5	51.6	850	3.9	—
15°	05	●			9°	15°	22°	—	0.29	0.35	0.41	0.50	0.65	0.76	0.91	1.29	310	0.5	100
	07	●			9°	15°	21°	—	0.40	0.49	0.57	0.70	0.90	1.07	1.28	1.81	∫	0.7	50
	10	●			9°	15°	21°	0.41	0.58	0.71	0.82	1.00	1.29	1.53	1.83	2.58	∫	0.8	50
	15	○			10°	15°	20°	0.61	0.87	1.06	1.23	1.50	1.94	2.29	2.74	3.87	∫	1.0	—
	30	○			10°	15°	19°	1.23	1.73	2.12	2.45	3.00	3.88	4.58	5.48	7.75	510	1.5	—
	40	○			10°	15°	19°	1.63	2.31	2.83	3.27	4.00	5.16	6.11	7.30	10.3	∫	1.7	—
	80	○			11°	15°	18°	3.27	4.62	5.66	6.53	8.00	10.3	12.2	14.6	20.6	∫	2.4	—
	200	○			11°	15°	17°	8.16	11.5	14.1	16.3	20.0	25.8	30.6	36.5	51.6	1,000	4.0	—

●.....With strainer ○.....Without strainer

How to order

Please inquire or order for a specific nozzle using this coding system.

① Complete nozzle

〈Example〉... 1/4MVV11505BW

1/4M	VV	115	05	B	W
Series	Spray Angle Code	Spray Capacity Code	Material	Strainer	
■ VV	■ 115°	■ 03	■ B	■ W (with Strainer)	
■ V	∫	∫	■ S303	■ — (without Strainer)	
	■ 15°	■ 200			

② Spray tip only

〈Example〉... 1/4VV11505B

1/4	VV	115	05	B
Series	Spray Angle Code	Spray Capacity Code	Material	
■ VV	■ 115°	■ 03	■ B	
■ V	∫	∫	■ S303	
	■ 15°	■ 200	■ TPVDF (CERTIIM®)	