HYPRO®

AGRICULTURAL SPRAY TIP GUIDE

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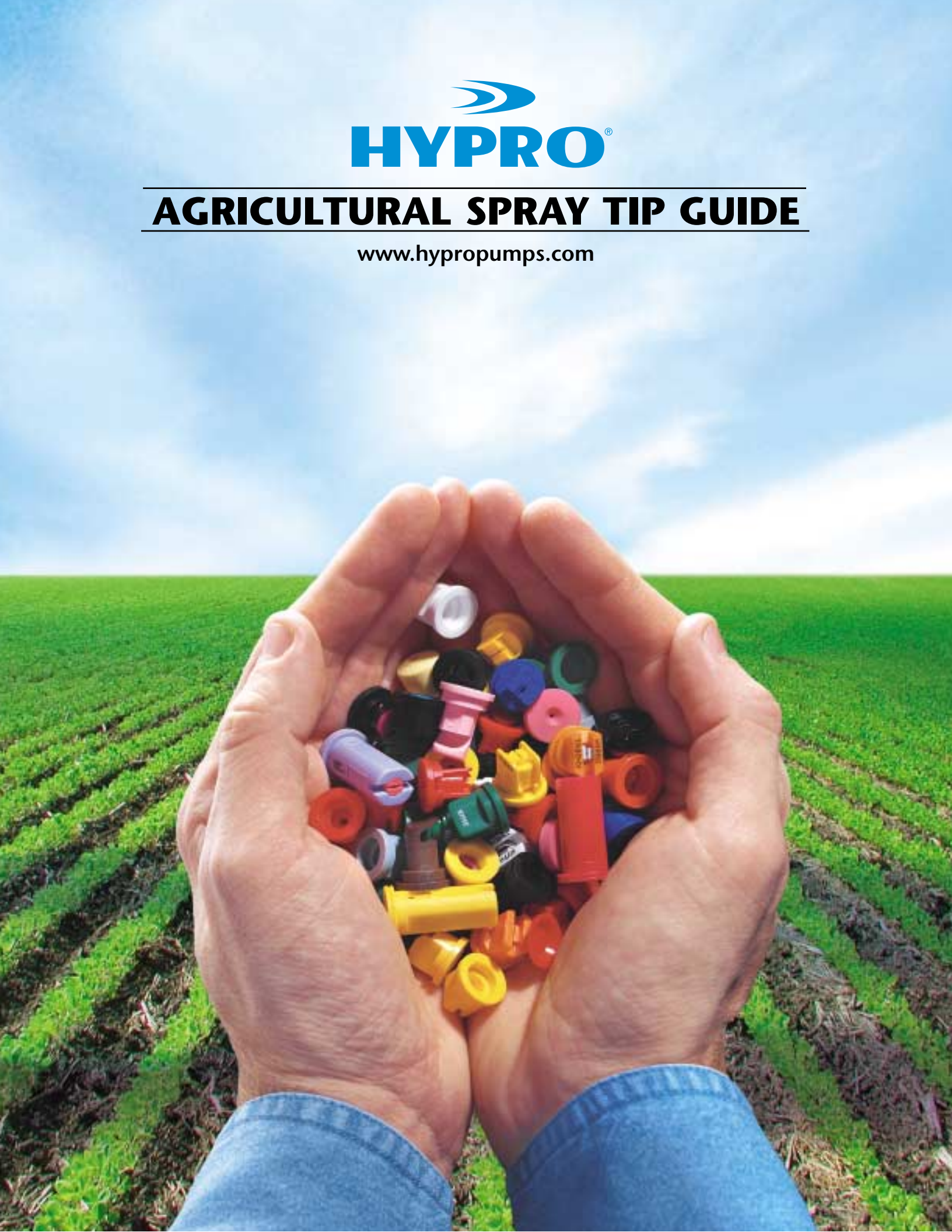

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Hypro® Spray Tips

Our new Hypro® Agricultural Spray Tip Guide was arranged with your convenience in mind. Now making the right spray tip selection or finding the correct accessory is simple and easy. You'll notice that you can choose from a wide range of excellent spray tips that are manufactured under rigorous quality-controlled procedures, using some of the most sophisticated nozzle testing equipment available.

Hypro offers spray tips designed for agricultural crop spraying. The use of Hostaform®, an engineered polyacetal, helps create a product that provides accurate delivery of crop spray under various weather conditions. These high-quality spray tips are an essential component to the success of all agricultural growers who spray herbicides, insecticides, fungicides and/or miticides.

In addition, Hypro distributes the complete line of Albuz® spray tips. These ceramic orifice spray tips are one of the most wear-resistant tips on the market, a great alternative to stainless steel or poly.

So when you need a dependable spray tip, go with the industry's leader in fluid handling technology for over 50 years. Hypro, it's where innovative solutions come to life.

ASAE S-572 Droplet Size Classification

Determining the correct spray tip to use for your spraying requirement has become easier. The American Society of Agricultural Engineers (ASAE) has developed the ASAE S-572 standard. Manufacturers of crop protection chemistry will be recommending application of their products based on the ASAE S-572 standard. The standard defines droplet size categories for spray tips.
The ASAE S-572 standard uses six droplet classification categories: Very Fine , Fine , Medium , Coarse , Very Coarse and Extremely Coarse.

Most agrochemical applications recommend a fine, medium, or coarse spray. In the future, all agrochemicals will have the recommended spray droplet classification on the label.

Fine sprays provide enhanced retention on the target including:
- Foliar-acting weed control
- Contact-acting fungicides and insecticides

Medium sprays are the most widely used spray type.
- Used by default by most applicators when spray quality is not defined by the label.
- Systemic-acting fungicides, insecticides and herbicides

Coarse sprays are used with residual and soil applied herbicides.

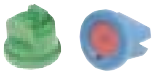
Hypro® Spray Tip Information Guide

Spray Tip	Code	Pressure Range	Nominal Spray Angle	Sizes	Material
Ultra Lo-Drift	ULD	15 to 115	120	015, 02, 025, 03, 04, 05, 06	Polyacetal
Air Injected Anti-Drift Ceramic	AVI	30 to 100	110	015, 02, 025, 03, 04, 05, 06	Ceramic
Air Injected Off-Center Ceramic	AVI-OC	40 to 100	80	02, 025, 03, 04	Ceramic
Total Range	TR	15 to 60	80, 110	01, 015, 02, 03, 04, 05, 06, 08, 10, 15	Stainless Steel Insert
Variable Pressure Fan	VP	15 to 70	80, 110	015, 02, 03, 04, 05, 06	Polyacetal
Wide Range Fan Ceramic	AXI/APX	20 to 60	80, 110	015, 02, 03, 04, 05, 06	Ceramic
Lo-Drift	LD	15 to 100	80, 110	015, 02, 03, 04, 05, 06, 08	Polyacetal *
Drift Reduction Ceramic	ADI	30 to 60	110	01, 015, 02, 03, 04	Ceramic
Fan Tip Standard Flat	F	30 to 60	80, 110	01, 015, 02, 03, 04, 05, 06, 08, 10, 15, 20	Polyacetal *
Standard Flat Ceramic	API	30 to 60	80, 110	015, 02, 03, 04, 05, 06	Ceramic
Off-Center Flat	OC	30 to 60	80	02, 03, 04, 06, 08, 12, 16	Brass
Off-Center Ceramic	OCI	30 to 60	80	02, 03, 04	Ceramic
Fan Tip Even Flat	E	30 to 60	80	01, 015, 02, 03, 04, 05, 06, 08	Polyacetal *
DeflecTip Wide Angle Flat	DT	15 to 40	---	0.5, 0.75, 1, 1.5, 2, 2.5, 3, 4, 5, 7.5, 10, 15, 20	Polyacetal *
Wide Angle Flat Ceramic	APM	10 to 60	---	1, 2, 3, 4, 5, 7.5, 10	Ceramic
Cam Coupler DeflecTip Wide Angle Flat	DTC	10 to 60	---	10, 15, 20, 30, 40, 50, 60, 80, 100, 120, 150, 180	Polyacetal *
Hollow Tip Hollow Cone	HCX	40 to 90	80	2, 3, 4, 6, 8, 9, 10, 12, 18	Polyacetal
Hollow Cone Ceramic	HCA	40 to 300	80	---	Ceramic
Hollow Cone Ceramic	ATR	10 to 220	80	---	Ceramic
SwirlTip Disc and Core Hollow Cone	DC/CR	40 to 150	---	---	Polyacetal
Ceramic Disc and Core	AMTP	40 to 300	---	---	Ceramic
Full Cone	FCX	40 to 150	80	02, 03, 04, 05, 06	Polyacetal *

* Available in PVDF upon request (Solef®)

Hypro® Nozzle Selection Guide

The following chart has been designed to simplify selection of the correct spray tip type for the agrochemical to be applied. It is based on having good conditions for spraying and should be used in conjunction with the agrochemical manufacturer's label.

		Herbicides				Fungicides		Insecticides		Liquid Fertilizer
		Soil Incorporated	Pre-Emerge	Post-Emerge		Contact	Systemic	Contact	Systemic	
				Contact	Systemic					
	Manufacturer's recommended droplet size	XC VC C	C M F	M F VF	C M F	M F VF	C M F	M F VF	C M F	XC VC C
Broadcast Spray Tips	ULD, AVI  pg. 7-8	Excellent	Excellent	Good	Excellent	Good	Excellent	Good	Excellent	Excellent
	VP, TR, AXI  pg. 9-11	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
	LD, ADI  pg. 12	Excellent	Excellent	Good	Excellent	Good	Excellent	Good	Excellent	Good
	F, API  pg. 13	Good	Good	Good	Good	Good	Good	Good	Good	Good
Broadcast Wide Angle Flat Fan Spray Tips	DT, APM  pg. 18-19	Excellent	Excellent		Excellent		Excellent		Excellent	Excellent
	DTC  pg. 18	Excellent	Excellent		Excellent		Excellent		Excellent	Excellent
Banding and Directed Spray Tips	AVI-OC  pg. 21	Excellent	Excellent	Good	Excellent	Good	Excellent	Good	Excellent	Excellent
	OC  pg. 21	Good	Good	Good	Good	Good	Good	Good	Good	Good
	OCI  pg. 22	Good	Good	Good	Good	Good	Good	Good	Good	Good
	EVEN  pg. 22	Good	Good	Good	Good	Good	Good	Good	Good	Good
	HCX, ATR, HCA  pg. 28		Good	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	
	DISC CORE, AMTP  pg. 32		Good	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	
	FCX  pg. 33				Good		Good		Good	Excellent

How to Read Spray Tip Charts

Spray tip charts are made to allow an operator to decide on what size and type of a spray tip will give the performance required at various application speeds, nozzle spacing and pressure. The spray tip performance charts bring the data together to give the operator the gallons per acre to be applied.

Recommended Application

Spray Tips Represented in Chart

Broadcast and Turf Applications Chart

Pressure range at which each tip is recommended

SPRAY TIPS		Droplet Size *
PSI Range	Tip and Strainer	
20-60	ADI-11001	M
30-60	30-01F80	F
30-60	30-01F110	F
15-60	TR80-01	VF
15-60	TR110-01	VF
	(100 M Strainer)	
30-100	AVI-110015	VC
15-115	ULD120-015	C
15-60	LD015F80	M
15-60	LD015F110	M
30-60	ADI-110015	M
15-60	TR80-015	F
15-60	TR110-015	F
15-70	VP80-015	F
15-70	VP110-015	F
20-60	AXI-80015	F
20-60	AXI-110015	F
30-60	30-015F80	F
30-60	30-015F110	F
30-60	API-80015	F
30-60	API-110015	F
	(100 M Strainer)	

Gallons per acre 20 inch nozzle spacing													GAL/1000 Ft.² 20 inch nozzle spacing			
		MPH											MPH			
PSI	GPM	4	5	6	7	8	10	12	14	16	18	20	2	3	4	5
15	0.06	4.5	3.6	3.0	2.6	2.3	1.8	1.5	1.3	1.1	1.0	0.91	0.21	0.14	0.10	0.08
20	0.07	5.3	4.2	3.5	3.0	2.6	2.1	1.8	1.5	1.3	1.2	1.1	0.24	0.16	0.12	0.10
30	0.09	6.5	5.2	4.3	3.7	3.2	2.6	2.2	1.8	1.6	1.4	1.3	0.30	0.20	0.15	0.12
40	0.10	7.4	5.9	5.0	4.2	3.7	3.0	2.5	2.1	1.9	1.7	1.5	0.34	0.23	0.17	0.14
50	0.11	8.2	6.5	5.4	4.7	4.1	3.3	2.7	2.3	2.0	1.8	1.6	0.37	0.25	0.19	0.15
60	0.12	8.9	7.1	5.9	5.1	4.5	3.6	3.0	2.5	2.2	2.0	1.8	0.41	0.27	0.20	0.16
15	0.09	6.7	5.3	4.5	3.8	3.3	2.7	2.2	1.9	1.7	1.5	1.3	0.31	0.20	0.15	0.12
20	0.11	8.2	6.5	5.4	4.7	4.1	3.3	2.7	2.3	2.0	1.8	1.6	0.37	0.25	0.19	0.15
30	0.13	9.7	7.7	6.4	5.5	4.8	3.9	3.2	2.8	2.4	2.1	1.9	0.44	0.29	0.22	0.18
40	0.15	11.1	8.9	7.4	6.4	5.6	4.5	3.7	3.2	2.8	2.5	2.2	0.51	0.34	0.26	0.20
50	0.17	12.6	10.1	8.4	7.2	6.3	5.0	4.2	3.6	3.2	2.8	2.5	0.58	0.39	0.29	0.23
60	0.18	13.4	10.7	8.9	7.6	6.7	5.3	4.5	3.8	3.3	3.0	2.7	0.61	0.41	0.31	0.24
70	0.20	14.9	11.9	9.9	8.5	7.4	5.9	5.0	4.2	3.7	3.3	3.0	0.68	0.45	0.34	0.27
80	0.21	15.6	12.5	10.4	8.9	7.8	6.2	5.2	4.5	3.9	3.5	3.1	0.71	0.48	0.36	0.29
90	0.23	17.1	13.7	11.4	9.8	8.5	6.8	5.7	4.9	4.3	3.8	3.4	0.78	0.52	0.39	0.31
100	0.24	17.8	14.3	11.9	10.2	8.9	7.1	5.9	5.1	4.5	4.0	3.6	0.82	0.54	0.41	0.33
115	0.25	18.9	15.1	12.6	10.8	9.4	7.5	6.3	5.4	4.7	4.2	3.8	0.86	0.58	0.43	0.35

Tip Filter Mesh Recommendation

Gallons per minute at 40 psi:
015 - 0.15 gallons per minute at 40 psi

ASAE S-572 Droplet Classification at 40 psi

Gallons per acre
Information applies to all tips listed on the left

Gallons per 1000 ft²

Spray tip part number tells you the type of spray tip (organized by droplet size):

ULD - Ultra Lo-Drift
AVI - Air Injected Anti-Drift
TR - Total Range
VP - Variable Pressure
AXI - Wide Range
LD - Lo Drift
ADI - Anti Drift
F - Fan
API - Flat Fan

Spray angle:
120 - 120° spray pattern
110 - 110° spray pattern
80 - 80° spray pattern

Broadcast and Turf Applications Chart

SPRAY TIPS		Droplet Size @40 PSI*
PSI Range	Tip and Strainer	
20-60	ADI-11001	M
30-60	30-01F80	F
30-60	30-01F110	F
15-60	TR80-01	VF
15-60	TR110-01	VF
	(100 M Strainer)	
30-100	AVI-110015	VC
15-115	ULD120-015	C
15-60	LD015F80	M
15-60	LD015F110	M
30-60	ADI-110015	M
15-60	TR80-015	F
15-60	TR110-015	F
15-70	VP80-015	F
15-70	VP110-015	F
20-60	AXI-80015	F
20-60	AXI-110015	F
30-60	30-015F80	F
30-60	30-015F110	F
30-60	API-80015	F
30-60	API-110015	F
	(100 M Strainer)	
30-100	AVI-11002	VC
15-115	ULD120-02	C
15-60	LD02F80	M
15-60	LD02F110	M
30-60	ADI-11002	M
30-60	30-02F80	M
15-60	TR80-02	F
15-60	TR110-02	F
15-70	VP80-02	F
15-70	VP110-02	F
20-60	AXI-8002	F
20-60	AXI-11002	F
30-60	30-02F110	F
30-60	API-8002	F
30-60	API-11002	F
	(100 M Strainer)	
30-100	AVI-110025	VC
15-115	ULD120-025	C
	(100 M Strainer)	
30-100	AVI-11003	XC
15-115	ULD120-03	C
15-60	LD03F80	C
20-60	AXI-11003	M
15-60	LD03F110	M
30-60	ADI-11003	M
30-60	30-03F80	M
30-60	API-8003	M
30-60	API-11003	M
15-60	TR80-03	F
15-60	TR110-03	F
15-70	VP80-03	F
15-70	VP110-03	F
20-60	AXI-8003	F
30-60	30-03F110	F
	(100 M Strainer)	

Gallons per acre 20 inch nozzle spacing													GAL/1000 Ft.^{2} 20 inch nozzle spacing			
		MPH											MPH			
PSI	GPM	4	5	6	7	8	10	12	14	16	18	20	2	3	4	5
15	0.06	4.5	3.6	3.0	2.6	2.3	1.8	1.5	1.3	1.1	1.0	0.91	0.21	0.14	0.10	0.08
20	0.07	5.3	4.2	3.5	3.0	2.6	2.1	1.8	1.5	1.3	1.2	1.1	0.24	0.16	0.12	0.10
30	0.09	6.5	5.2	4.3	3.7	3.2	2.6	2.2	1.8	1.6	1.4	1.3	0.30	0.20	0.15	0.12
40	0.10	7.4	5.9	5.0	4.2	3.7	3.0	2.5	2.1	1.9	1.7	1.5	0.34	0.23	0.17	0.14
50	0.11	8.2	6.5	5.4	4.7	4.1	3.3	2.7	2.3	2.0	1.8	1.6	0.37	0.25	0.19	0.15
60	0.12	8.9	7.1	5.9	5.1	4.5	3.6	3.0	2.5	2.2	2.0	1.8	0.41	0.27	0.20	0.16
15	0.09	6.7	5.3	4.5	3.8	3.3	2.7	2.2	1.9	1.7	1.5	1.3	0.31	0.20	0.15	0.12
20	0.11	8.2	6.5	5.4	4.7	4.1	3.3	2.7	2.3	2.0	1.8	1.6	0.37	0.25	0.19	0.15
30	0.13	9.7	7.7	6.4	5.5	4.8	3.9	3.2	2.8	2.4	2.1	1.9	0.44	0.29	0.22	0.18
40	0.15	11.1	8.9	7.4	6.4	5.6	4.5	3.7	3.2	2.8	2.5	2.2	0.51	0.34	0.26	0.20
50	0.17	12.6	10.1	8.4	7.2	6.3	5.0	4.2	3.6	3.2	2.8	2.5	0.58	0.39	0.29	0.23
60	0.18	13.4	10.7	8.9	7.6	6.7	5.3	4.5	3.8	3.3	3.0	2.7	0.61	0.41	0.31	0.24
70	0.20	14.9	11.9	9.9	8.5	7.4	5.9	5.0	4.2	3.7	3.3	3.0	0.68	0.45	0.34	0.27
80	0.21	15.6	12.5	10.4	8.9	7.8	6.2	5.2	4.5	3.9	3.5	3.1	0.71	0.48	0.36	0.29
90	0.23	17.1	13.7	11.4	9.8	8.5	6.8	5.7	4.9	4.3	3.8	3.4	0.78	0.52	0.39	0.31
100	0.24	17.8	14.3	11.9	10.2	8.9	7.1	5.9	5.1	4.5	4.0	3.6	0.82	0.54	0.41	0.33
115	0.25	18.9	15.1	12.6	10.8	9.4	7.5	6.3	5.4	4.7	4.2	3.8	0.86	0.58	0.43	0.35
15	0.12	8.9	7.1	5.9	5.1	4.5	3.6	3.0	2.5	2.2	2.0	1.8	0.41	0.27	0.20	0.16
20	0.14	10.4	8.3	6.9	5.9	5.2	4.2	3.5	3.0	2.6	2.3	2.1	0.48	0.32	0.24	0.19
30	0.17	12.6	10.1	8.4	7.2	6.3	5.0	4.2	3.6	3.2	2.8	2.5	0.58	0.39	0.29	0.23
40	0.20	14.9	11.9	9.9	8.5	7.4	5.9	5.0	4.2	3.7	3.3	3.0	0.68	0.45	0.34	0.27
50	0.22	16.3	13.1	10.9	9.3	8.2	6.5	5.4	4.7	4.1	3.6	3.3	0.75	0.50	0.37	0.30
60	0.24	17.8	14.3	11.9	10.2	8.9	7.1	5.9	5.1	4.5	4.0	3.6	0.82	0.54	0.41	0.33
70	0.26	19.3	15.4	12.9	11.0	9.7	7.7	6.4	5.5	4.8	4.3	3.9	0.88	0.59	0.44	0.35
80	0.28	21	16.6	13.9	11.9	10.4	8.3	6.9	5.9	5.2	4.6	4.2	0.95	0.63	0.48	0.38
90	0.30	22	17.8	14.9	12.7	11.1	8.9	7.4	6.4	5.6	5.0	4.5	1.0	0.68	0.51	0.41
100	0.32	24	19.0	15.8	13.6	11.9	9.5	7.9	6.8	5.9	5.3	4.8	1.1	0.73	0.54	0.44
115	0.34	25	20	16.8	14.4	12.6	10.1	8.4	7.2	6.3	5.6	5.0	1.2	0.77	0.58	0.46
15	0.16	11.5	9.2	7.7	6.6	5.8	4.6	3.8	3.3	2.9	2.6	2.3	0.53	0.35	0.26	0.21
20	0.18	13.0	10.4	8.7	7.4	6.5	5.2	4.3	3.7	3.2	2.9	2.6	0.60	0.40	0.30	0.24
30	0.22	16.3	13.1	10.9	9.3	8.2	6.5	5.4	4.7	4.1	3.6	3.3	0.75	0.50	0.37	0.30
40	0.25	18.6	14.9	12.4	10.6	9.3	7.4	6.2	5.3	4.6	4.1	3.7	0.85	0.57	0.43	0.34
50	0.28	21	16.6	13.9	11.9	10.4	8.3	6.9	5.9	5.2	4.6	4.2	0.95	0.63	0.48	0.38
60	0.31	23	18.4	15.3	13.2	11.5	9.2	7.7	6.6	5.8	5.1	4.6	1.1	0.70	0.53	0.42
70	0.33	25	19.6	16.4	14.0	12.3	9.8	8.2	7.0	6.1	5.5	4.9	1.1	0.75	0.56	0.45
80	0.35	26	21	17.5	15.0	13.1	10.5	8.8	7.5	6.6	5.8	5.3	1.2	0.80	0.60	0.48
90	0.38	28	23	18.8	16.1	14.1	11.3	9.4	8.1	7.1	6.3	5.6	1.3	0.86	0.65	0.52
100	0.40	29	23	19.6	16.8	14.7	11.7	9.8	8.4	7.3	6.5	5.9	1.3	0.90	0.67	0.54
115	0.42	31	25	21	17.9	15.7	12.6	10.5	9.0	7.9	7.0	6.3	1.4	0.96	0.72	0.58
15	0.18	13.4	10.7	8.9	7.6	6.7	5.3	4.5	3.8	3.3	3.0	2.7	0.61	0.41	0.31	0.24
20	0.21	15.6	12.5	10.4	8.9	7.8	6.2	5.2	4.5	3.9	3.5	3.1	0.71	0.48	0.36	0.29
30	0.26	19.3	15.4	12.9	11.0	9.7	7.7	6.4	5.5	4.8	4.3	3.9	0.88	0.59	0.44	0.35
40	0.30	22	17.8	14.9	12.7	11.1	8.9	7.4	6.4	5.6	5.0	4.5	1.0	0.68	0.51	0.41
50	0.34	25	20	16.8	14.4	12.6	10.1	8.4	7.2	6.3	5.6	5.0	1.2	0.77	0.58	0.46
60	0.37	27	22	18.3	15.7	13.7	11.0	9.2	7.8	6.9	6.1	5.5	1.3	0.84	0.63	0.50
70	0.40	30	24	19.8	17.0	14.9	11.9	9.9	8.5	7.4	6.6	5.9	1.4	0.91	0.68	0.54
80	0.42	31	25	21	17.8	15.6	12.5	10.4	8.9	7.8	6.9	6.2	1.4	0.95	0.71	0.57
90	0.45	33	27	22	19.1	16.7	13.4	11.1	9.5	8.4	7.4	6.7	1.5	1.0	0.77	0.61
100	0.47	35	28	23	19.9	17.4	14.0	11.6	10.0	8.7	7.8	7.0	1.6	1.1	0.80	0.64
115	0.51	38	30	25	22	18.9	15.1	12.6	10.8	9.4	8.4	7.6	1.7	1.2	0.86	0.69

* Droplet size refers to ASAE S-572 @40 PSI

- Broadcast spray tips are classified as GPM @ 40 PSI

chart continued on next page

Broadcast and Turf Applications Chart - continued

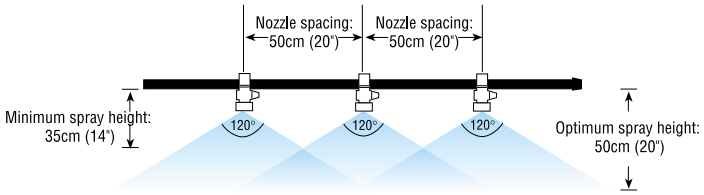
SPRAY TIPS		Droplet Size @40 PSI*
PSI Range	Tip and Strainer	
30-100	AVI-11004	XC
15-115	ULD120-04	C
15-60	LD04F80	C
30-60	ADI-11004	C
15-60	TR80-04	M
15-70	VP80-04	M
15-70	VP110-04	M
20-60	AXI-8004	M
20-60	AXI-11004	M
15-60	LD04F110	M
30-60	30-04F80	M
30-60	30-04F110	M
30-60	API-8004	M
30-60	API-11004	M
15-60	TR110-04 (50 M Strainer)	F
30-100	AVI-11005	XC
15-60	LD05F80	VC
15-60	LD05F110	C
15-115	ULD120-05	C
15-60	TR80-05	M
15-70	VP80-05	M
15-70	VP110-05	M
20-60	AXI-8005	M
20-60	AXI-11005	M
30-60	30-05F80	M
30-60	30-05F110	M
30-60	API-8005	M
30-60	API-11005	M
15-60	TR110-05 (50 M Strainer)	F
30-100	AVI-11006	XC
15-115	ULD120-06	VC
15-70	VP110-06	C
15-60	LD06F80	C
15-60	LD06F110	C
30-60	30-06F80	C
30-60	API-8006	C
15-60	TR80-06	M
15-60	TR110-06	M
15-70	VP80-06	M
30-60	30-06F110	M
30-60	API-11006 (50 M Strainer)	M
15-60	LD08F80	VC
15-60	TR80-08	C
15-70	VP80-08	C
15-70	VP110-08	C
15-60	LD08F110	C
30-60	30-08F80	C
30-60	30-08F110	C
15-60	TR110-08 (50 M Strainer)	M
15-60	TR80-10	C
30-60	30-10F80	C
30-60	30-10F110	C
15-60	TR110-10 (50 M Strainer)	M
30-60	30-15F80	VC
15-60	TR80-15	C
15-60	TR110-15	C
30-60	30-15F110 (50 M Strainer)	C
30-60	30-20F80	VC
30-60	30-20F110 (50 M Strainer)	C

Gallons per acre 20 inch nozzle spacing													GAL/1000 Ft.² 20 inch nozzle spacing			
		MPH											MPH			
PSI	GPM	4	5	6	7	8	10	12	14	16	18	20	2	3	4	5
15	0.24	17.8	14.3	11.9	10.2	8.9	7.1	5.9	5.1	4.5	4.0	3.6	0.82	0.54	0.41	0.33
20	0.28	21	16.6	13.9	11.9	10.4	8.3	6.9	5.9	5.2	4.6	4.2	0.95	0.63	0.48	0.38
30	0.35	26	21	17.3	14.9	13.0	10.4	8.7	7.4	6.5	5.8	5.2	1.2	0.79	0.60	0.48
40	0.40	30	24	19.8	17.0	14.9	11.9	9.9	8.5	7.4	6.6	5.9	1.4	0.91	0.68	0.54
50	0.45	33	27	22	19.1	16.7	13.4	11.1	9.5	8.4	7.4	6.7	1.5	1.0	0.77	0.61
60	0.49	36	29	24	21	18.2	14.6	12.1	10.4	9.1	8.1	7.3	1.7	1.1	0.83	0.67
70	0.53	39	31	26	22	19.7	15.7	13.1	11.2	9.8	8.7	7.9	1.8	1.2	0.90	0.72
80	0.57	42	34	28	24	21	16.9	14.1	12.1	10.6	9.4	8.5	1.9	1.3	0.97	0.78
90	0.60	45	36	30	25	22	17.8	14.9	12.7	11.1	9.9	8.9	2.0	1.4	1.0	0.28
100	0.63	47	37	31	27	23	18.7	15.6	13.4	11.7	10.4	9.4	2.1	1.4	1.1	0.86
115	0.68	50	40	34	29	25	20	16.8	14.4	12.6	11.2	10.1	2.3	1.5	1.2	0.92
15	0.31	23	18.4	15.3	13.2	11.5	9.2	7.7	6.6	5.8	5.1	4.6	1.1	0.70	0.53	0.42
20	0.35	26	21	17.3	14.9	13.0	10.4	8.7	7.4	6.5	5.8	5.2	1.2	0.79	0.60	0.48
30	0.43	32	26	21	18.2	16.0	12.8	10.6	9.1	8.0	7.1	6.4	1.5	0.97	0.73	0.58
40	0.50	37	30	25	21	18.6	14.9	12.4	10.6	9.3	8.3	7.4	1.7	1.1	0.85	0.68
50	0.56	42	33	28	24	21	16.6	13.9	11.9	10.4	9.2	8.3	1.9	1.3	0.95	0.76
60	0.61	45	36	30	26	23	18.1	15.1	12.9	11.3	10.1	9.1	2.1	1.4	1.0	0.83
70	0.66	49	39	33	28	25	19.6	16.3	14.0	12.3	10.9	9.8	2.2	1.5	1.1	0.90
80	0.71	53	42	35	30	26	21	17.6	15.1	13.2	11.7	10.5	2.4	1.6	1.2	0.97
90	0.75	56	45	37	32	28	22	18.6	15.9	13.9	12.4	11.1	2.6	1.7	1.3	1.0
100	0.79	59	47	39	34	29	23	19.6	16.8	14.7	13.0	11.7	2.7	1.8	1.3	1.1
115	0.85	63	50	42	36	31	25	21	18.0	15.7	14.0	12.6	2.9	1.9	1.4	1.2
15	0.37	27	22	18.3	15.7	13.7	11.0	9.2	7.8	6.9	6.1	5.5	1.3	0.84	0.63	0.50
20	0.42	31	25	21	17.8	15.6	12.5	10.4	8.9	7.8	6.9	6.2	1.4	0.95	0.71	0.57
30	0.52	39	31	26	22	19.3	15.4	12.9	11.0	9.7	8.6	7.7	1.8	1.2	0.88	0.71
40	0.60	45	36	30	25	22	17.8	14.9	12.7	11.1	9.9	8.9	2.0	1.4	1.0	0.82
50	0.67	50	40	33	28	25	19.9	16.6	14.2	12.4	11.1	9.9	2.3	1.5	1.1	0.91
60	0.73	54	43	36	31	27	22	18.1	15.5	13.6	12.0	10.8	2.5	1.7	1.2	0.99
70	0.79	59	47	39	34	29	23	19.6	16.8	14.7	13.0	11.7	2.7	1.8	1.3	1.1
80	0.85	63	50	42	36	32	25	21	18.0	15.8	14.0	12.6	2.9	1.9	1.4	1.2
90	0.90	67	53	45	38	33	27	22	19.1	16.7	14.9	13.4	3.1	2.0	1.5	1.2
100	0.95	71	56	47	40	35	28	24	20	17.6	15.7	14.1	3.2	2.2	1.6	1.3
115	1.02	76	60	50	43	38	30	25	22	18.9	16.8	15.1	3.5	2.3	1.7	1.4
15	0.49	36	29	24	21	18.2	14.6	12.1	10.4	9.1	8.1	7.3	1.7	1.1	0.83	0.67
20	0.57	42	34	28	24	21	16.9	14.1	12.1	10.6	9.4	8.5	1.9	1.3	0.97	0.78
30	0.69	51	41	34	29	26	20	17.1	14.6	12.8	11.4	10.2	2.3	1.6	1.2	0.94
40	0.80	59	48	40	34	30	24	19.8	17.0	14.9	13.2	11.9	2.7	1.8	1.4	1.1
50	0.89	66	53	44	38	33	26	22	18.9	16.5	14.7	13.2	3.0	2.0	1.5	1.2
60	0.98	73	58	49	42	36	29	24	21	18.2	16.2	14.6	3.3	2.2	1.7	1.3
70	1.05	78	62	52	45	39	31	26	22	19.5	17.3	15.6	3.6	2.4	1.8	1.4
15	0.61	45	36	30	26	23	18.1	15.1	12.9	11.3	10.1	9.1	2.1	1.4	1.0	0.83
20	0.71	53	42	35	30	26	21	17.6	15.1	13.2	11.7	10.5	2.4	1.6	1.2	0.97
30	0.87	65	52	43	37	32	26	22	18.5	16.1	14.4	12.9	3.0	2.0	1.5	1.2
40	1.00	74	59	50	42	37	30	25	21	18.6	16.5	14.9	3.4	2.3	1.7	1.4
50	1.12	83	67	55	48	42	33	28	24	21	18.5	16.6	3.8	2.5	1.9	1.5
60	1.22	91	72	60	52	45	36	30	26	23	20	18.1	4.1	2.8	2.1	1.7
15	0.92	68	55	46	39	34	27	23	19.5	17.1	15.2	13.7	3.1	2.1	1.6	1.3
20	1.06	79	63	52	45	39	31	26	22	19.7	17.5	15.7	3.6	2.4	1.8	1.4
30	1.30	97	77	64	55	48	39	32	28	24	21	19.3	4.4	2.9	2.2	1.8
40	1.50	111	89	74	64	56	45	37	32	28	25	22	5.1	3.4	2.6	2.0
50	1.68	125	100	83	71	62	50	42	36	31	28	25	5.7	3.8	2.9	2.3
60	1.84	137	109	91	78	68	55	46	39	34	30	27	6.3	4.2	3.1	2.5
30	1.73	128	103	86	73	64	51	43	37	32	29	26	5.9	3.9	2.9	2.4
40	2.00	149	119	99	85	74	59	50	42	37	33	30	6.8	4.5	3.4	2.7
50	2.24	166	133	111	95	83	67	55	48	42	37	33	7.6	5.1	3.8	3.0
60	2.45	182	146	121	104	91	73	61	52	45	40	36	8.3	5.6	4.2	3.3

* Droplet size refers to ASAE S-572 @40 PSI

- Broadcast spray tips are classified as GPM @ 40 PSI

BROADCAST SPRAY TIPS



FastCap ULD – Ultra Lo-Drift - Dual Air Eduction

FastCap Ultra Lo-Drift (FC-ULD) - FC-ULD with Dual Air Eduction technology creates significant opportunity to increase spraying days without changing tips or spraying practices. The spray tip number is printed on the cap for easy identification. Spray tip, cap and gasket are assembled and ready to safely install or change.

FC-ULD 120° - Ultra Lo-Drift - Dual Air Eduction

	15 PSI	20 PSI	30 PSI	40 PSI	50 PSI	60 PSI	70 PSI	80 PSI	90 PSI	100 PSI	115 PSI
FC-ULD120-015	VC	C	C	C	C	M	M	M	M	F	F
FC-ULD120-02	VC	VC	C	C	C	C	M	M	M	M	F
FC-ULD120-025	VC	VC	C	C	C	C	M	M	M	M	M
FC-ULD120-03	VC	VC	VC	C	C	C	C	M	M	M	M
FC-ULD120-04	VC	VC	VC	C	C	C	C	M	M	M	M
FC-ULD120-05	XC	XC	VC	VC	VC	C	C	C	C	M	M
FC-ULD120-06	XC	XC	XC	VC	VC	VC	C	C	C	C	M

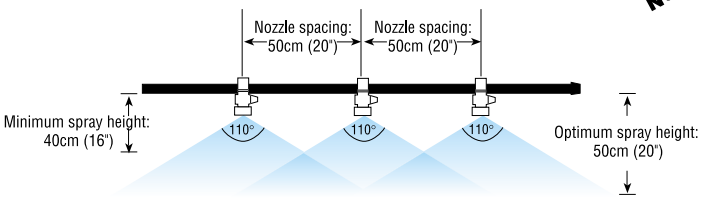
ULD – Ultra Lo-Drift - Dual Air Eduction

Ultra Lo-Drift (ULD) - Provides uniform air-filled droplets that provide excellent coverage, retention and penetration. Excellent drift management spray tip without compromising spray quality.

ULD 120° - Ultra Lo-Drift - Dual Air Eduction

	15 PSI	20 PSI	30 PSI	40 PSI	50 PSI	60 PSI	70 PSI	80 PSI	90 PSI	100 PSI	115 PSI
ULD120-015	VC	C	C	C	C	M	M	M	M	F	F
ULD120-02	VC	VC	C	C	C	C	M	M	M	M	F
ULD120-025	VC	VC	C	C	C	C	M	M	M	M	M
ULD120-03	VC	VC	VC	C	C	C	C	M	M	M	M
ULD120-04	VC	VC	VC	C	C	C	C	M	M	M	M
ULD120-05	XC	XC	VC	VC	VC	C	C	C	C	M	M
ULD120-06	XC	XC	XC	VC	VC	VC	C	C	C	C	M

BROADCAST SPRAY TIPS



AVI – Air-Inducing Venturi Flat Fan Ceramic Tip

AVI - The Albuz AVI low-drift air induction spray tip. Air inducing (Venturi system) provides large, air-filled droplets that burst on impact with target.

AVI 110° - Air Inducing Venturi Flat Fan Ceramic Tip

	30 PSI	40 PSI	50 PSI	60 PSI	70 PSI	80 PSI	90 PSI	100 PSI
AVI-110015	VC	VC	VC	VC	VC	VC	C	C
AVI-11002	VC	VC	VC	VC	VC	VC	VC	C
AVI-110025	XC	VC	VC	VC	VC	VC	VC	VC
AVI-11003	XC	XC	XC	VC	VC	VC	VC	VC
AVI-11004	XC	XC	XC	VC	VC	VC	VC	VC
AVI-11005	XC	XC	XC	XC	VC	VC	VC	VC
AVI-11006	XC	XC	XC	XC	VC	VC	VC	VC

BROADCAST SPRAY TIPS

FastCap TR – Total Range - Stainless Steel Insert

FastCap Total Range (FC-TR) – The Hypro FASTCAP TR delivers a consistent spray pattern throughout the pressure range. Spray tip, cap and gasket are assembled and ready to safely install or change.

FC-TR 80° - Total Range - Stainless Steel Insert

	15 PSI	20 PSI	30 PSI	40 PSI	50 PSI	60 PSI
FC-TR80-01	M	F	F	VF	VF	VF
FC-TR80-015	M	F	F	F	F	VF
FC-TR80-02	M	M	F	F	F	F
FC-TR80-03	C	M	M	F	F	F
FC-TR80-04	C	C	M	M	M	F
FC-TR80-05	C	C	C	M	M	M
FC-TR80-06	C	C	C	M	M	M
FC-TR80-08	VC	C	C	C	C	M
FC-TR80-10	VC	VC	VC	C	C	C
FC-TR80-15	XC	VC	VC	C	C	C

FC-TR 110° - Total Range - Stainless Steel Insert

	15 PSI	20 PSI	30 PSI	40 PSI	50 PSI	60 PSI
FC-TR110-01	F	F	F	VF	VF	VF
FC-TR110-015	M	F	F	F	F	F
FC-TR110-02	M	M	F	F	F	F
FC-TR110-03	M	M	M	F	F	F
FC-TR110-04	C	M	M	F	F	F
FC-TR110-05	C	C	M	F	F	F
FC-TR110-06	C	C	C	M	M	M
FC-TR110-08	C	C	C	M	M	M
FC-TR110-10	VC	VC	C	M	M	M
FC-TR110-15	VC	VC	VC	C	C	M

TR – Total Range - Stainless Steel Insert

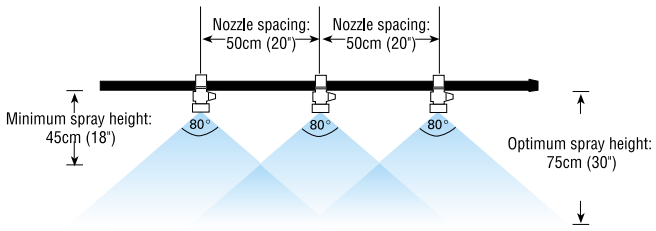
Total Range (TR) -The Hypro TR delivers a versatile spray pattern for applications of herbicides, fungicides, insecticides, and growth regulations.

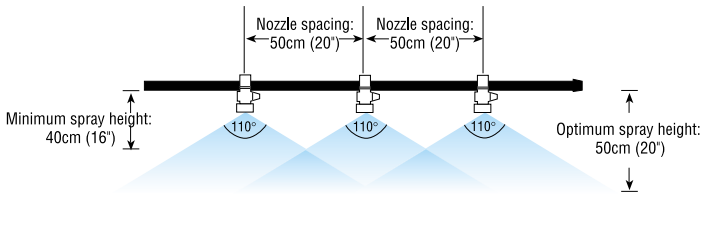
TR 80° - Total Range - Stainless Steel Insert

	15 PSI	20 PSI	30 PSI	40 PSI	50 PSI	60 PSI
TR80-01	M	F	F	VF	VF	VF
TR80-015	M	F	F	F	F	VF
TR80-02	M	M	F	F	F	F
TR80-03	C	M	M	F	F	F
TR80-04	C	C	M	M	M	F
TR80-05	C	C	C	M	M	M
TR80-06	C	C	C	M	M	M
TR80-08	VC	C	C	C	C	M
TR80-10	VC	VC	VC	C	C	C
TR80-15	XC	VC	VC	C	C	C

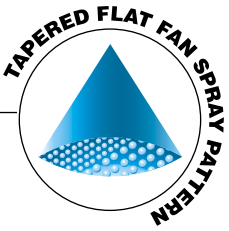
TR 110° - Total Range - Stainless Steel Insert

	15 PSI	20 PSI	30 PSI	40 PSI	50 PSI	60 PSI
TR110-01	F	F	F	VF	VF	VF
TR110-015	M	F	F	F	F	F
TR110-02	M	M	F	F	F	F
TR110-03	M	M	M	F	F	F
TR110-04	C	M	M	F	F	F
TR110-05	C	C	M	F	F	F
TR110-06	C	C	C	M	M	M
TR110-08	C	C	C	M	M	M
TR110-10	VC	VC	C	M	M	M
TR110-15	VC	VC	VC	C	C	M





BROADCAST SPRAY TIPS



FastCap AXI – Wide Pressure Range Flat Fan Ceramic Tip with Color Matching Cap

FC-AXI - The Albuz FASTCAP AXI wide pressure range flat fan ceramic spray tip. Spray tip, cap and gasket are assembled and ready to safely install or change.

AXI 80° - Wide Pressure Range Flat Fan Ceramic

	20 PSI	30 PSI	40 PSI	50 PSI	60 PSI
FC-AXI-80015	F	F	F	F	F
FC-AXI-8002	M	F	F	F	F
FC-AXI-8003	M	M	M	F	F
FC-AXI-8004	M	M	M	M	M
FC-AXI-8005	M	M	M	M	M
FC-AXI-8006	M	M	M	M	M

AXI 110° - Wide Pressure Range Flat Fan Ceramic

	20 PSI	30 PSI	40 PSI	50 PSI	60 PSI
FC-AXI-110015	F	F	F	F	F
FC-AXI-11002	F	F	F	F	F
FC-AXI-11003	M	M	M	F	F
FC-AXI-11004	M	M	M	M	F
FC-AXI-11005	M	M	M	M	M
FC-AXI-11006	M	M	M	M	M

AXI – Wide Pressure Range Flat Fan Ceramic

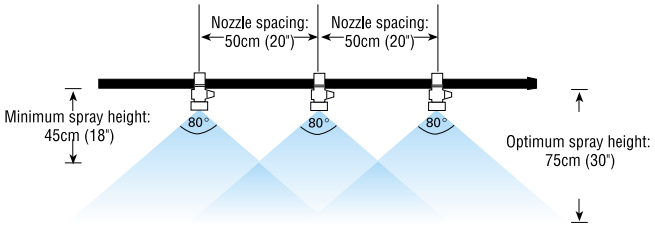
AXI - The Albuz AXI wide pressure range flat fan ceramic spray tip.

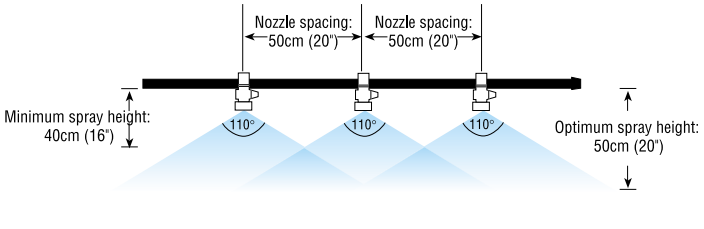
AXI 80° - Wide Pressure Range Flat Fan Ceramic

	20 PSI	30 PSI	40 PSI	50 PSI	60 PSI
AXI-80015	F	F	F	F	F
AXI-8002	M	F	F	F	F
AXI-8003	M	M	M	F	F
AXI-8004	M	M	M	M	M
AXI-8005	M	M	M	M	M
AXI-8006	M	M	M	M	M

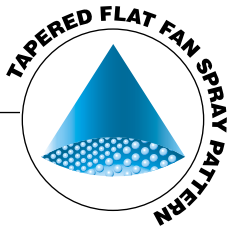
AXI 110° - Wide Pressure Range Flat Fan Ceramic

	20 PSI	30 PSI	40 PSI	50 PSI	60 PSI
AXI-110015	F	F	F	F	F
AXI-11002	F	F	F	F	F
AXI-11003	M	M	M	F	F
AXI-11004	M	M	M	M	F
AXI-11005	M	M	M	M	M
AXI-11006	M	M	M	M	M





BROADCAST SPRAY TIPS



FastCap VP– Variable Pressure Range Flat Fan Tip

Variable Pressure (FC-VP) – The Hypro FASTCAP VP delivers a consistent spray pattern throughout the pressure range. Spray tip, cap and gasket are assembled and ready to safely install or change.

FC-VP 80° - Variable Pressure Range Flat Fan Tip

	15 PSI	20 PSI	30 PSI	40 PSI	50 PSI	60 PSI	70 PSI
FC-VP80-015	M	M	F	F	F	F	F
FC-VP80-02	M	M	F	F	F	F	F
FC-VP80-03	M	M	M	F	F	F	F
FC-VP80-04	C	M	M	M	M	F	F
FC-VP80-05	C	C	M	M	M	M	F
FC-VP80-06	C	C	C	C	M	M	M

FC-VP 110° - Variable Pressure Range Flat Fan Tip

	15 PSI	20 PSI	30 PSI	40 PSI	50 PSI	60 PSI	70 PSI
FC-VP110-015	M	F	F	F	F	F	F
FC-VP110-02	M	M	F	F	F	F	F
FC-VP110-03	M	M	M	F	F	F	F
FC-VP110-04	C	M	M	M	M	F	F
FC-VP110-05	C	C	M	M	M	M	F
FC-VP110-06	C	C	C	M	M	M	M

VP – Variable Pressure Range Flat Fan Tip

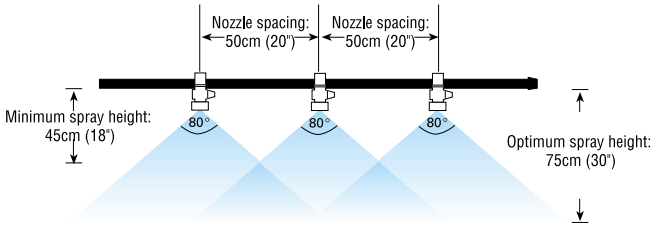
Variable Pressure (VP) - The Hypro VP is a versatile nozzle for all types of crop spraying.

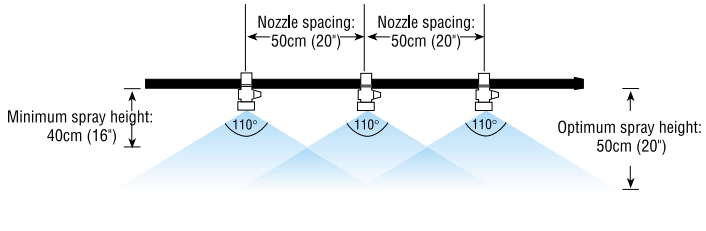
VP 80° - Variable Pressure Range Flat Fan Tip

	15 PSI	20 PSI	30 PSI	40 PSI	50 PSI	60 PSI	70 PSI
VP80-015	M	M	F	F	F	F	F
VP80-02	M	M	F	F	F	F	F
VP80-03	M	M	M	F	F	F	F
VP80-04	C	M	M	M	M	F	F
VP80-05	C	C	M	M	M	M	F
VP80-06	C	C	C	C	M	M	M

VP 110° - Variable Pressure Range Flat Fan Tip

	15 PSI	20 PSI	30 PSI	40 PSI	50 PSI	60 PSI	70 PSI
VP110-015	M	F	F	F	F	F	F
VP110-02	M	M	F	F	F	F	F
VP110-03	M	M	M	F	F	F	F
VP110-04	C	M	M	M	M	F	F
VP110-05	C	C	M	M	M	M	F
VP110-06	C	C	C	M	M	M	M





BROADCAST SPRAY TIPS

LD – Low-Drift Flat Fan Tip

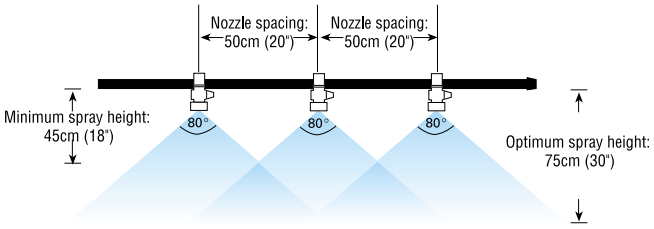
Low-Drift (LD) - The Hypro LD combines the drift-reducing flat spray pattern with optimum spray pattern. It allows operations in a wider weather window.

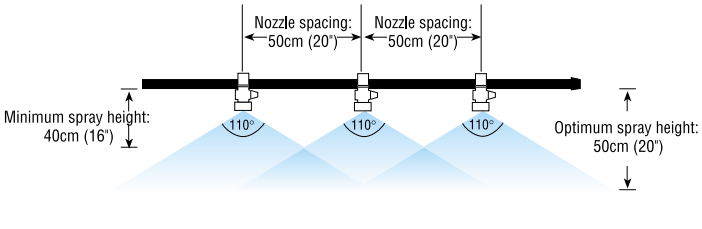
LD 80° - Lo-Drift Flat Fan Tip

	15 PSI	20 PSI	30 PSI	40 PSI	50 PSI	60 PSI
LD015F80	C	C	M	M	M	M
LD02F80	C	C	C	M	M	M
LD03F80	C	C	C	C	M	M
LD04F80	C	C	C	C	M	M
LD05F80	VC	C	C	C	C	C
LD06F80	VC	VC	VC	C	C	C
LD08F80	XC	VC	VC	VC	C	C

LD 110° - Lo-Drift Flat Fan Tip

	15 PSI	20 PSI	30 PSI	40 PSI	50 PSI	60 PSI
LD015F110	M	M	M	M	M	M
LD02F110	C	C	M	M	M	M
LD03F110	C	C	C	M	M	M
LD04F110	C	C	C	M	M	M
LD05F110	VC	C	C	C	C	M
LD06F110	VC	C	C	C	C	C
LD08F110	VC	VC	C	C	C	C



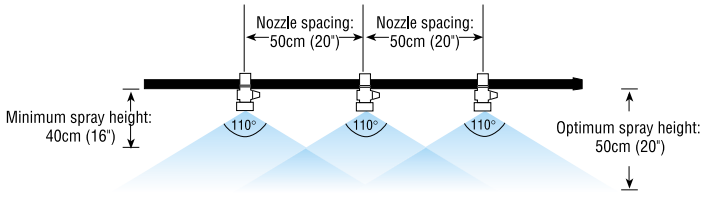


ADI – Anti-Drift Flat Fan Ceramic Tip

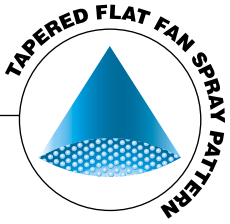
Anti-Drift (ADI) - The Albuz ADI anti-drift flat fan ceramic spray tip significantly reduces spray drift.

ADI 110° - Anti-Drift Flat Fan Ceramic Tip

	30 PSI	40 PSI	50 PSI	60 PSI
ADI-11001	M	M	F	F
ADI-110015	M	M	M	M
ADI-11002	M	M	M	M
ADI-11003	C	M	M	M
ADI-11004	VC	C	C	C



BROADCAST SPRAY TIPS



Fan Tip – Standard Flat Fan Spray Tip

Fan Tip (F) - The Hypro F flat fan spray tip is the flow and pattern which the industry uses to set the standard for droplet size and pattern.

Fan Tip 80° - Standard Flat Fan Spray Tip

	30 PSI	40 PSI	50 PSI	60 PSI
30-0067F80	VF	VF	VF	VF
30-01F80	F	F	F	F
30-015F80	M	F	F	F
30-02F80	M	M	F	F
30-03F80	C	M	M	F
30-04F80	C	M	M	M
30-05F80	C	M	M	M
30-06F80	C	C	M	M
30-08F80	C	C	C	C
30-10F80	VC	C	C	C
30-15F80	VC	VC	C	C
30-20F80	VC	VC	VC	VC

Fan Tip 110° - Standard Flat Fan Spray Tip

	30 PSI	40 PSI	50 PSI	60 PSI
30-01F110	F	F	F	F
30-015F110	F	F	F	F
30-02F110	F	F	F	F
30-03F110	M	F	F	F
30-04F110	M	M	M	F
30-05F110	M	M	M	M
30-06F110	M	M	M	M
30-08F110	C	C	C	C
30-10F110	C	C	C	C
30-15F110	C	C	C	C
30-20F110	C	C	C	C

API – Standard Flat Fan Ceramic Tip

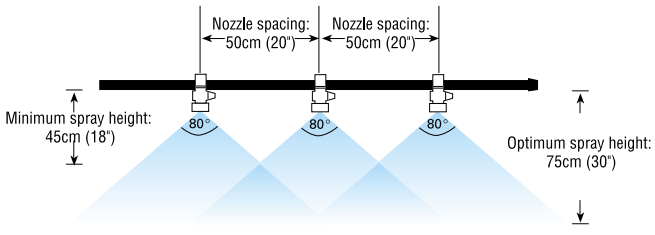
Standard Flat Fan (API) - The Albuz API standard flat fan ceramic spray tip is the best ceramic, general purpose spray tip in the industry.

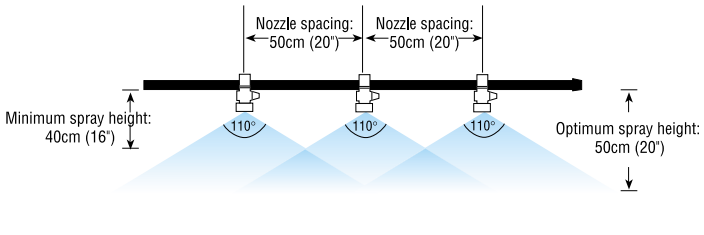
API 80° - Standard Flat Fan Ceramic Tip

	30 PSI	40 PSI	50 PSI	60 PSI
API-80015	F	F	F	F
API-8002	M	F	F	F
API-8003	M	M	M	M
API-8004	M	M	M	M
API-8005	C	M	M	M
API-8006	C	C	M	M

API 110° - Standard Flat Fan Ceramic Tip

	30 PSI	40 PSI	50 PSI	60 PSI
API-110015	F	F	F	F
API-11002	F	F	F	F
API-11003	M	M	F	F
API-11004	M	M	M	M
API-11005	M	M	M	M
API-11006	M	M	M	M





Wide-Angle Flat Spray Tips Chart

DEFLECTIP, CAM COUPLE DEFLECTIP and APM

WIDE ANGLE FLOOD SPRAY TIP		Droplet Size @40 PSI*
PSI Range	Tip and Strainer	
10-60	30DT0.5 Orange 100Mesh	F
10-60	30DT0.75 Green 100Mesh	F
10-60	30DT1.0 Yellow 50Mesh	M
10-60	APM-Yellow 50Mesh	M
10-60	30DT1.5 Blue 50Mesh	M
10-60	30DT2.0 Red	M
10-60	APM-Orange 50Mesh	M
10-60	30DT2.5 Brown 50Mesh	M
10-60	30DT3.0 Gray	M
10-60	APM-Red 50Mesh	M
10-60	30DT4.0 White	M
10-60	APM-Green 50Mesh	M

Spray Angle	Gallons per acre 40 inch nozzle spacing									
			MPH							
	PSI	GPM	4	6	8	10	12	14	16	20
80	10	0.05	1.9	1.2	0.9	0.7	0.6	0.5	0.5	0.4
	15	0.06	2.3	1.5	1.2	0.9	0.8	0.7	0.6	0.5
	20	0.07	2.6	1.8	1.3	1.1	0.9	0.8	0.7	0.5
	30	0.09	3.2	2.2	1.6	1.3	1.1	0.9	0.8	0.6
	40	0.10	3.7	2.5	1.9	1.5	1.2	1.1	0.9	0.7
	50	0.11	4.1	2.7	2.0	1.6	1.4	1.2	1.0	0.8
	60	0.12	4.5	3.0	2.3	1.8	1.5	1.3	1.1	0.9
95	10	0.075	2.8	1.9	1.4	1.1	0.9	0.8	0.7	0.6
	15	0.09	3.3	2.2	1.7	1.3	1.1	1.0	0.8	0.7
	20	0.11	3.9	2.6	2.0	1.6	1.3	1.1	1.0	0.8
	30	0.13	4.8	3.2	2.4	1.9	1.6	1.4	1.2	1.0
	40	0.15	5.6	3.7	2.8	2.2	1.9	1.6	1.4	1.1
	50	0.17	6.2	4.2	3.1	2.5	2.1	1.8	1.6	1.2
	60	0.18	6.8	4.5	3.4	2.7	2.3	1.9	1.7	1.4
105	10	0.10	3.7	2.5	1.9	1.5	1.2	1.1	0.9	0.7
	15	0.12	4.5	3.0	2.2	1.8	1.5	1.3	1.1	0.9
	20	0.14	5.3	3.5	2.6	2.1	1.8	1.5	1.3	1.1
	30	0.17	6.4	4.3	3.2	2.6	2.1	1.8	1.6	1.3
	40	0.20	7.4	5.0	3.7	3.0	2.5	2.1	1.9	1.5
	50	0.22	8.3	5.5	4.2	3.3	2.8	2.4	2.1	1.7
	60	0.24	9.1	6.1	4.5	3.6	3.0	2.6	2.3	1.8
80	10	0.12	4.4	2.9	2.2	1.8	1.5	1.3	1.1	0.9
	15	0.15	5.4	3.6	2.7	2.2	1.8	1.5	1.3	1.1
	20	0.17	6.2	4.2	3.1	2.5	2.1	1.8	1.6	1.2
	30	0.21	7.6	5.1	3.8	3.1	2.5	2.2	1.9	1.5
	40	0.24	8.8	5.9	4.4	3.5	2.9	2.5	2.2	1.8
	50	0.27	9.8	6.6	4.9	3.9	3.3	2.8	2.5	2.0
	60	0.29	10.8	7.2	5.4	4.3	3.6	3.1	2.7	2.2
105	10	0.15	5.6	3.7	2.8	2.2	1.9	1.6	1.4	1.1
	15	0.18	6.6	4.4	3.3	2.7	2.2	1.9	1.7	1.3
	20	0.21	7.9	5.3	3.9	3.2	2.6	2.3	2.0	1.6
	30	0.26	9.6	6.4	4.8	3.9	3.2	2.8	2.4	1.9
	40	0.30	11.1	7.4	5.6	4.5	3.7	3.2	2.8	2.2
	50	0.34	12.5	8.3	6.2	5.0	4.2	3.6	3.1	2.5
	60	0.37	13.6	9.1	6.8	5.5	4.5	3.9	3.4	2.7
105	10	0.20	7.4	5.0	3.7	3.0	2.5	2.1	1.9	1.5
	15	0.24	8.9	5.9	4.5	3.6	3.0	2.5	2.2	1.8
	20	0.28	10.5	7.0	5.3	4.2	3.5	3.0	2.6	2.1
	30	0.35	12.9	8.6	6.4	5.1	4.3	3.7	3.2	2.6
110	40	0.40	14.9	9.9	7.4	5.9	5.0	4.2	3.7	3.0
	50	0.45	16.6	11.1	8.3	6.6	5.5	4.7	4.2	3.3
	60	0.49	18.2	12.1	9.1	7.3	6.1	5.2	4.5	3.6
110	10	0.25	9.3	6.2	4.6	3.7	3.1	2.7	2.3	1.9
	15	0.31	11.4	7.6	5.7	4.5	3.8	3.2	2.8	2.3
	20	0.35	13.1	8.8	6.6	5.3	4.4	3.8	3.3	2.6
	30	0.43	16.1	10.7	8.0	6.4	5.4	4.6	4.0	3.2
	40	0.50	18.6	12.4	9.3	7.4	6.2	5.3	4.6	3.7
	50	0.56	21	13.8	10.4	8.3	6.9	5.9	5.2	4.2
	60	0.61	23	15.2	11.4	9.1	7.6	6.5	5.7	4.5
110	10	0.30	11.1	7.4	5.6	4.5	3.7	3.2	2.8	2.2
	15	0.37	13.6	9.1	6.8	5.5	4.5	3.9	3.4	2.7
	20	0.42	15.8	10.5	7.9	6.3	5.3	4.5	3.9	3.2
	30	0.52	19.3	12.9	9.6	7.7	6.4	5.5	4.8	3.9
125	40	0.60	22	14.9	11.1	8.9	7.4	6.4	5.6	4.5
	50	0.67	25	16.6	12.5	10.0	8.3	7.1	6.2	5.0
	60	0.73	27	18.2	13.6	10.9	9.1	7.8	6.8	5.5
120	10	0.40	14.9	9.9	7.4	5.9	5.0	4.2	3.7	3.0
	15	0.49	18.2	12.1	9.1	7.3	6.1	5.2	4.5	3.6
	20	0.57	21	14.0	10.5	8.4	7.0	6.0	5.3	4.2
	30	0.69	26	17.1	12.9	10.3	8.6	7.3	6.4	5.1
135	40	0.80	30	19.8	14.9	11.9	9.9	8.5	7.4	5.9
	50	0.89	33	22	16.6	13.3	11.1	9.5	8.3	6.6
	60	0.98	36	24	18.2	14.5	12.1	10.4	9.1	7.3

* Droplet size refers to ASAE S-572 @40 PSI

- Wide angle flat spray tips are classified as GPM @ 10 PSI

chart continued on next page

Wide-Angle Flat Spray Tips Chart - continued

DEFLECTIP, CAM COUPLE DEFLECTIP and APM

WIDE ANGLE FLOOD SPRAY TIP		Droplet Size @40 PSI*
PSI Range	Tip and Strainer	
10-60	30DT5.0 LightBlue	M
10-60	APM-LightBlue 50Mesh	M
10-60	APM-Gray 50Mesh	C
10-60	30DT7.5 Lime Green 50Mesh	C
10-60	APM-Black	C
10-60	30DT10 Black	C
10-60	30DT10C Lime Green	C
10-60	30DT15 Pink	C
10-60	30DT15C Pink	C
10-60	30DT20 Purple	VC
10-60	30DT20C White	C

Spray Angle	Gallons per acre 40 inch nozzle spacing									
			MPH							
	PSI	GPM	4	6	8	10	12	14	16	20
125	10	0.50	18.6	12.4	9.3	7.4	6.2	5.3	4.6	3.7
	15	0.61	23	15.2	11.4	9.1	7.6	6.5	5.7	4.5
	20	0.71	26	17.5	13.1	10.5	8.8	7.5	6.6	5.3
	30	0.87	32	21	16.1	12.9	10.7	9.2	8.0	6.4
140	40	1.00	37	25	18.6	14.9	12.4	10.6	9.3	7.4
	50	1.12	42	28	21	16.6	13.8	11.9	10.4	8.3
	60	1.22	45	30	23	18.2	15.2	13.0	11.4	9.1
	10	0.70	26	17.4	13.0	10.4	8.7	7.4	6.5	5.2
	15	0.86	32	21	15.9	12.7	10.6	9.1	8.0	6.4
	20	0.99	37	25	18.4	14.7	12.3	10.5	9.2	7.4
	30	1.21	45	30	23	18.0	15.0	12.9	11.3	9.0
160	40	1.40	52	35	26	21	17.4	14.9	13.0	10.4
	50	1.57	58	39	29	23	19.4	16.6	14.5	11.6
	60	1.72	64	42	32	25	21	18.2	15.9	12.7
	10	0.75	28	18.6	13.9	11.1	9.3	8.0	7.0	5.6
	15	0.92	34	23	17.1	13.6	11.4	9.7	8.5	6.8
	20	1.06	39	26	19.7	15.8	13.1	11.3	9.8	7.9
	30	1.30	48	32	24	19.3	16.1	13.8	12.1	9.6
145	40	1.50	56	37	28	22	18.6	15.9	13.9	11.1
	50	1.68	62	42	31	25	21	17.8	15.6	12.5
	60	1.84	68	45	34	27	23	19.5	17.1	13.6
	10	0.91	34	23	17.0	13.6	11.3	9.7	8.5	6.8
	15	1.12	42	28	21	16.6	13.9	11.9	10.4	8.3
	20	1.29	48	32	24	19.2	16.0	13.7	12.0	9.6
	30	1.58	59	39	29	24	19.6	16.8	14.7	11.8
160	40	1.83	68	45	34	27	23	19.4	17.0	13.6
	50	2.04	76	51	38	30	25	22	19.0	15.2
	60	2.24	83	55	42	33	28	24	21	16.6
	10	1.00	37	25	18.6	14.9	12.4	10.6	9.3	7.4
	15	1.22	45	30	23	18.2	15.2	13.0	11.4	9.1
145	20	1.41	53	35	26	21	17.5	15.0	13.1	10.5
	30	1.73	64	43	32	26	21	18.4	16.1	12.9
110	40	2.00	74	50	37	30	25	21	18.6	14.9
	50	2.24	83	55	42	33	28	24	21	16.6
	60	2.45	91	61	45	36	30	26	23	18.2
	10	1.50	56	37	28	22	18.6	15.9	13.9	11.1
	15	1.84	68	45	34	27	23	19.5	17.1	13.6
145	20	2.12	79	53	39	32	26	23	19.7	15.8
	30	2.60	96	64	48	39	32	28	24	19.3
115	40	3.00	111	74	56	45	37	32	28	22
	50	3.35	125	83	62	50	42	36	31	25
	60	3.67	136	91	68	55	45	39	34	27
	10	2.00	74	50	37	30	25	21	18.6	14.9
	15	2.45	91	61	45	36	30	26	23	18.2
140	20	2.83	105	70	53	42	35	30	26	21
	30	3.46	129	86	64	51	43	37	32	26
135	40	4.00	149	99	74	59	50	42	37	30
	50	4.47	166	111	83	66	55	47	42	33
	60	4.90	182	121	91	73	61	52	45	36

* Droplet size refers to ASAE S-572 @40 PSI

- Wide angle flat spray tips are classified as GPM @ 10 PSI

Wide-Angle Flat Spray Tips Chart – larger capacity

DEFLECTIP and CAM COUPLE DEFLECTIP

WIDE ANGLE FLOOD SPRAY TIP larger capacity		Droplet Size @40 PSI*
PSI Range	Tip and Strainer	
10-60	30DT10 Black	C
10-60	30DT10C Lime Green	C
10-60	30DT15 Pink	C
10-60	30DT15C Pink	C
10-60	30DT20 Purple	VC
10-60	30DT20C White	C
10-60	30DT30C Yellow	VC
10-60	30DT40C Red	VC
10-60	30DT50C Gray	XC
10-60	30DT60C Blue	XC
10-60	30DT80C Black	XC
10-60	30DT100C Light Blue	XC

Spray Angle	Gallons per acre 60 inch nozzle spacing									
			MPH							
	PSI	GPM	4	6	8	10	12	14	16	20
	10	1.00	25	16.5	12.4	9.9	8.3	7.1	6.2	5.0
145	15	1.22	30	20	15.2	12.1	10.1	8.7	7.6	6.1
	20	1.41	35	23	17.5	14.0	11.7	10.0	8.8	7.0
	30	1.73	43	29	21	17.1	14.3	12.2	10.7	8.6
110	40	2.00	50	33	25	19.8	16.5	14.1	12.4	9.9
	50	2.24	55	37	28	22	18.4	15.8	13.8	11.1
	60	2.45	61	40	30	24	20	17.3	15.2	12.1
	10	1.50	37	25	18.6	14.9	12.4	10.6	9.3	7.4
	15	1.84	45	30	23	18.2	15.2	13.0	11.4	9.1
145	20	2.12	53	35	26	21	17.5	15.0	13.1	10.5
	30	2.60	64	43	32	26	21	18.4	16.1	12.9
115	40	3.00	74	50	37	30	25	21	18.6	14.9
	50	3.35	83	55	42	33	28	24	21	16.6
	60	3.67	91	61	45	36	30	26	23	18.2
	10	2.00	50	33	25	19.8	16.5	14.1	12.4	9.9
	15	2.45	61	40	30	24	20	17.3	15.2	12.1
140	20	2.83	70	47	35	28	23	20	17.5	14.0
	30	3.46	86	57	43	34	29	24	21	17.1
135	40	4.00	99	66	50	40	33	28	25	19.8
	50	4.47	111	74	55	44	37	32	28	22
	60	4.90	121	81	61	48	40	35	30	24
	10	3.00	74	50	37	30	25	21	18.6	14.9
	15	3.67	91	61	45	36	30	26	23	18.2
	20	4.24	105	70	53	42	35	30	26	21
	30	5.20	129	86	64	51	43	37	32	26
125	40	6.00	149	99	74	59	50	42	37	30
	50	6.71	166	111	83	66	55	47	42	33
	60	7.35	182	121	91	73	61	52	45	36
	10	4.00	99	66	50	40	33	28	25	19.8
	15	4.90	121	81	61	48	40	35	30	24
	20	5.66	140	93	70	56	47	40	35	28
	30	6.93	171	114	86	69	57	49	43	34
145	40	8.00	198	132	99	79	66	57	50	40
	50	8.94	221	148	111	89	74	63	55	44
	60	9.80	242	162	121	97	81	69	61	48
	10	5.00	124	83	62	50	41	35	31	25
	15	6.12	152	101	76	61	51	43	38	30
	20	7.07	175	117	88	70	58	50	44	35
	30	8.66	214	143	107	86	71	61	54	43
130	40	10.00	248	165	124	99	83	71	62	50
	50	11.18	277	184	138	111	92	79	69	55
	60	12.25	303	202	152	121	101	87	76	61
	10	6.00	149	99	74	59	50	42	37	30
	15	7.35	182	121	91	73	61	52	45	36
	20	8.49	210	140	105	84	70	60	53	42
	30	10.39	257	171	129	103	86	73	64	51
140	40	12.00	297	198	149	119	99	85	74	59
	50	13.42	332	221	166	133	111	95	83	66
	60	14.70	364	242	182	145	121	104	91	73
	10	8.00	198	132	99	79	66	57	50	40
	15	9.80	242	162	121	97	81	69	61	48
	20	11.31	280	187	140	112	93	80	70	56
	30	13.86	343	229	171	137	114	98	86	69
145	40	16.00	396	264	198	158	132	113	99	79
	50	17.89	443	295	221	177	148	126	111	89
	60	19.60	485	323	242	194	162	139	121	97
	10	10.00	248	165	124	99	83	71	62	50
	15	12.25	303	202	152	121	101	87	76	61
	20	14.14	350	233	175	140	117	100	88	70
	30	17.32	429	286	214	171	143	122	107	86
150	40	20.00	495	330	248	198	165	141	124	99
	50	22.36	553	369	277	221	184	158	138	111
	60	24.49	606	404	303	242	202	173	152	121

* Droplet size refers to ASAE S-572 @40 PSI

- Wide angle flat spray tips are classified as GPM @ 10 PSI

chart continued on next page

Wide-Angle Flat Spray Tips Chart – larger capacity - continued

DEFLECTIP and CAM COUPLE DEFLECTIP

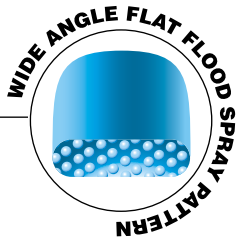
WIDE ANGLE FLOOD SPRAY TIP larger capacity		Droplet Size @40 PSI*
PSI Range	Tip and Strainer	
10-60	30DT120C Orange	XC

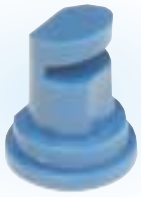
Spray Angle	Gallons per acre 60 inch nozzle spacing									
			MPH							
	PSI	GPM	4	6	8	10	12	14	16	20
140	10	12.00	297	198	149	119	99	85	74	59
	15	14.70	364	242	182	145	121	104	91	73
	20	16.97	420	280	210	168	140	120	105	84
	30	20.78	514	343	257	206	171	147	129	103
	40	24.00	594	396	297	238	198	170	149	119
	50	26.83	664	443	332	266	221	190	166	133
	60	29.39	727	485	364	291	242	208	182	145

* Droplet size refers to ASAE S-572 @40 PSI

- Wide angle flat spray tips are classified as GPM @ 10 PSI

WIDE ANGLE SPRAY TIPS



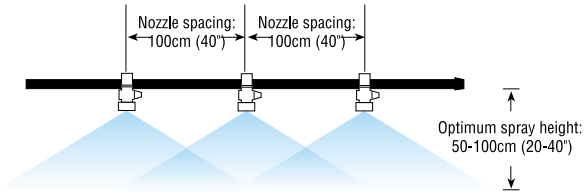


DT – DeflecTip Wide-Angle Flat Flood Spray Tip

DeflecTip (DT) – The Hypro DT wide-angle flat flood spray tips produce large droplets in a wide, flat pattern from 80-degree to 140-degree spray angles. Can be used from 20 to 60-inch nozzle spacing.

DT - DeflecTip Wide-Angle Flat Flood Tip

	10 PSI	15 PSI	20 PSI	30 PSI	40 PSI	50 PSI	60 PSI
30DT0.5	C	M	M	F	F	F	F
30DT0.75	C	C	M	M	F	F	F
30DT1.0	C	C	M	M	M	M	F
30DT1.5	C	M	M	M	M	M	M
30DT2.0	C	C	C	M	M	M	M
30DT2.5	C	C	C	M	M	M	M
30DT3.0	C	C	C	M	M	M	M
30DT4.0	C	C	C	M	M	M	M
30DT5.0	C	C	C	C	M	M	M
30DT7.5	C	C	C	C	C	C	C
30DT10	VC	VC	VC	C	C	C	C
30DT15	XC	VC	VC	VC	C	C	C
30DT20	XC	XC	VC	VC	VC	C	C



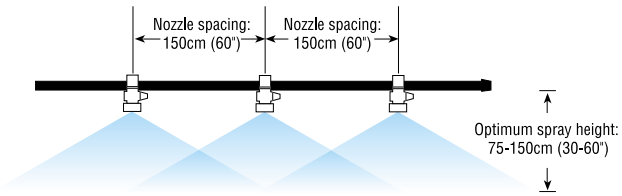
* Nozzle can be mounted between 0° and ±90°. Rotate nozzle bodies or raise or lower boom to attain 100% overlap of spray pattern. Ideal is +45° from level.

DTC – DeflecTip Wide-Angle Flat Flood Spray Tip

Cam Coupler DeflecTip (DTC) – The Hypro DTC wide-angle flat flood spray tips produce large droplets in a wide, flat pattern from 110-degree to 150-degree spray angles. Can be used from 40 to 60-inch nozzle spacing.

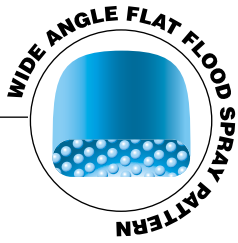
DTC - Cam Couple DeflecTip Wide-Angle Flat Flood Tip

	40 PSI	50 PSI	60 PSI	70 PSI	80 PSI	90 PSI	100 PSI
30DT10C	VC	VC	VC	C	C	C	C
30DT15C	XC	VC	VC	VC	C	C	C
30DT20C	XC	XC	VC	VC	C	C	C
30DT30C	XC	XC	XC	VC	VC	VC	C
30DT40C	XC	XC	XC	XC	VC	VC	VC
30DT50C	XC	XC	XC	XC	XC	XC	VC
30DT60C	XC	XC	XC	XC	XC	XC	XC
30DT80C	XC	XC	XC	XC	XC	XC	XC
30DT100C	XC	XC	XC	XC	XC	XC	XC
30DT120C	XC	XC	XC	XC	XC	XC	XC
30DT150C	XC	XC	XC	XC	XC	XC	XC
30DT180C	XC	XC	XC	XC	XC	XC	XC



* Nozzle can be mounted between 0° and ±90°. Rotate nozzle bodies or raise or lower boom to attain 100% overlap of spray pattern. Ideal is +45° from level.

WIDE ANGLE SPRAY TIPS

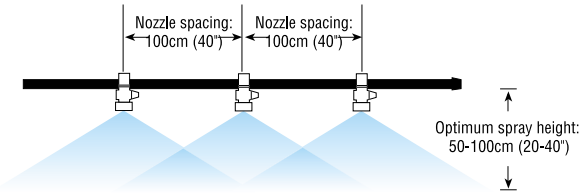


APM – Ceramic Wide-Angle Flat Flood Spray Tip

Wide-Angle Flat Spray (APM) – The Albuz wide-angle flat flood ceramic spray tips produce large droplets in a wide, flat pattern from 80-degree to 160-degree spray angles.

APM - Wide-Angle Flat Flood Tip

	10 PSI	15 PSI	20 PSI	30 PSI	40 PSI	50 PSI	60 PSI
APM-Yellow (1.2)	M	M	M	M	M	M	M
APM-Orange (2.0)	M	M	M	M	M	M	M
APM-Red (3.0)	C	C	C	M	M	M	M
APM-Green (4.0)	C	C	C	M	M	M	M
APM-Blue (5.0)	C	C	C	C	M	M	M
APM-Gray (7.0)	VC	C	C	C	C	C	C
APM-Black (9.1)	VC	VC	C	C	C	C	C



* Nozzle can be mounted between 0° and ±90°. Rotate nozzle bodies or raise or lower boom to attain 100% overlap of spray pattern. Ideal is +45° from level.

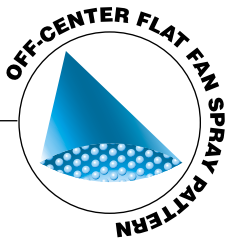
Banding and Directed Applications Chart

BANDING and DIRECTED APPLICATIONS		Droplet Size @40 PSI*	Gallons per Acre 30 inch nozzle spacing											
					MPH									
PSI	Tip and Strainer		PSI	GPM	3	3.5	4	4.5	5	5.5	6	6.5	7	7.5	8	8.5
30-60	30-01E80 (100 M Strainer)	F	30	0.09	5.7	4.9	4.3	3.8	3.4	3.1	2.9	2.7	2.5	2.3	2.2	2.0
			40	0.10	6.6	5.7	5.0	4.4	4.0	3.6	3.3	3.0	2.8	2.6	2.5	2.3
			50	0.11	7.3	6.2	5.4	4.8	4.4	4.0	3.6	3.4	3.1	2.9	2.7	2.6
			60	0.12	7.9	10.2	8.9	7.9	7.1	6.5	5.9	5.5	5.1	4.8	4.5	4.2
30-60	30-015E80 (100 M Strainer)	F	30	0.13	8.6	7.4	6.4	5.7	5.1	4.7	4.3	4.0	3.7	3.4	3.2	3.0
			40	0.15	9.9	8.5	7.4	6.6	5.9	5.4	5.0	4.6	4.2	4.0	3.7	3.5
			50	0.17	11.2	9.6	8.4	7.5	6.7	6.1	5.6	5.2	4.8	4.5	4.2	4.0
			60	0.18	11.9	10.2	8.9	7.9	7.1	6.5	5.9	5.5	5.1	4.8	4.5	4.2
			70	0.2	13.2	11.3	9.9	8.8	7.9	7.2	6.6	6.1	5.7	5.3	5.0	4.7
			80	0.21	13.9	11.9	10.4	9.2	8.3	7.6	6.9	6.4	5.9	5.5	5.2	4.9
			90	0.23	15.2	13.0	11.4	10.1	9.1	8.3	7.6	7.0	6.5	6.1	5.7	5.4
			100	0.24	15.8	13.6	11.9	10.6	9.5	8.6	7.9	7.3	6.8	6.3	5.9	5.6
40-100	AVI-OC-8002	XC	30	0.17	11.2	9.6	8.4	7.5	6.7	6.1	5.6	5.2	4.8	4.5	4.2	4.0
30-60	28OC2	M	40	0.20	13.2	11.3	9.9	8.8	7.9	7.2	6.6	6.1	5.7	5.3	5.0	4.7
30-60	OCI-8002	M	50	0.22	14.5	12.4	10.9	9.7	8.7	7.9	7.3	6.7	6.2	5.8	5.4	5.1
30-60	30-02E80 (100 M Strainer)	M	60	0.24	15.8	13.6	11.9	10.6	9.5	8.6	7.9	7.3	6.8	6.3	5.9	5.6
			70	0.26	17.2	14.7	12.9	11.4	10.3	9.4	8.6	7.9	7.4	6.9	6.4	6.1
			80	0.28	18.5	15.8	13.9	12.3	11.1	10.1	9.2	8.5	7.9	7.4	6.9	6.5
			90	0.30	19.8	17.0	14.9	13.2	11.9	10.8	9.9	9.1	8.5	7.9	7.4	7.0
			100	0.32	21	18.1	15.8	14.1	12.7	11.5	10.6	9.7	9.1	8.4	7.9	7.5
40-100	AVI-OC-80025 (100 M Strainer)	XC	40	0.25	16.5	14.1	12.4	11.0	9.9	9.0	8.3	7.6	7.1	6.6	6.2	5.8
			50	0.28	18.5	15.8	13.9	12.3	11.1	10.1	9.2	8.5	7.9	7.4	6.9	6.5
			60	0.31	20	17.5	15.3	13.6	12.3	11.2	10.2	9.4	8.8	8.2	7.7	7.2
			70	0.33	22	18.7	16.4	14.6	13.1	11.9	10.9	10.1	9.4	8.7	8.2	7.7
			80	0.35	23	20	17.5	15.6	14.0	12.7	11.7	10.8	10.0	9.3	8.8	8.2
			90	0.38	25	21	18.8	16.7	15.0	13.7	12.5	11.6	10.7	10.0	9.4	8.9
			100	0.40	26	22	19.6	17.4	15.7	14.2	13.0	12.0	11.2	10.4	9.8	9.2
40-100	AVI-OC-8003	XC	30	0.26	17.2	14.7	12.9	11.4	10.3	9.4	8.6	7.9	7.4	6.9	6.4	6.1
30-60	28OC3	M	40	0.30	19.8	17.0	14.9	13.2	11.9	10.8	9.9	9.1	8.5	7.9	7.4	7.0
30-60	OCI-8003	M	50	0.34	22	19.2	16.8	15.0	13.5	12.2	11.2	10.4	9.6	9.0	8.4	7.9
30-60	30-03E80 (50 M Strainer)	M	60	0.37	24	21	18.3	16.3	14.7	13.3	12.2	11.3	10.5	9.8	9.2	8.6
			70	0.40	26	23	19.8	17.6	15.8	14.4	13.2	12.2	11.3	10.6	9.9	9.3
			80	0.42	28	23	21	18.5	16.6	15.1	13.9	12.8	11.9	11.1	10.4	9.8
			90	0.45	30	26	22	19.8	17.8	16.2	14.9	13.7	12.7	11.9	11.1	10.5
			100	0.47	31	27	23	21	18.6	16.9	15.5	14.3	13.3	12.4	11.6	10.9
40-100	AVI-OC-8004	XC	30	0.35	23	19.8	17.3	15.4	13.9	12.6	11.6	10.7	9.9	9.2	8.7	8.2
30-60	30-04E80	C	40	0.40	26	23	19.8	17.6	15.8	14.4	13.2	12.2	11.3	10.6	9.9	9.3
30-60	28OC4	M	50	0.45	30	25	22	19.8	17.8	16.2	14.9	13.7	12.7	11.9	11.1	10.5
30-60	OCI-8004 (50 M Strainer)	M	60	0.49	32	28	24	22	19.4	17.6	16.2	14.9	13.9	12.9	12.1	11.4
			70	0.53	35	30	26	23	21	19.1	17.5	16.1	15.0	14.0	13.1	12.3
			80	0.57	38	32	28	25	23	21	18.8	17.4	16.1	15.0	14.1	13.3
			90	0.60	40	34	30	26	24	22	19.8	18.3	17.0	15.8	14.9	14.0
			100	0.63	42	36	31	28	25	23	21	19.2	17.8	16.6	15.6	14.7
30-60	30-05E80 (50 M Strainer)	C	30	0.43	28	24	21	18.9	17.0	15.5	14.2	13.1	12.2	11.4	10.6	10.0
			40	0.50	33	28	25	22	19.8	18.0	16.5	15.2	14.1	13.2	12.4	11.6
			50	0.56	37	32	28	25	22	20	18.5	17.1	15.8	14.8	13.9	13.0
			60	0.61	40	35	30	27	24	22	20	18.6	17.3	16.1	15.1	14.2
30-60	30-06E80	C	30	0.52	34	29	26	23	21	18.7	17.2	15.8	14.7	13.7	12.9	12.1
30-60	28OC6	C	40	0.60	40	34	30	26	24	22	19.8	18.3	17.0	15.8	14.9	14.0
	(50 M Strainer)		50	0.67	44	38	33	29	27	24	22	20	19.0	17.7	16.6	15.6
			60	0.73	48	41	36	32	29	26	24	22	21	19.3	18.1	17.0
30-60	28OC8 (brass)	C	30	0.69	46	39	34	30	27	25	23	21	19.5	18.2	17.1	16.1
			40	0.80	53	45	40	35	32	29	26	24	23	21	19.8	18.6
30-60	30-08E80 (50 M Strainer)	C	50	0.89	59	50	44	39	35	32	29	27	25	23	22	21
			60	0.98	65	55	49	43	39	35	32	30	28	26	24	23
30-60	28OC12 (brass) (30 M Strainer)	C	30	1.05	69	59	52	46	42	38	35	32	30	28	26	24
			40	1.22	81	69	60	54	48	44	40	37	35	32	30	28
			50	1.36	90	77	67	60	54	49	45	41	38	36	34	32
			60	1.49	98	84	74	66	59	54	49	45	42	39	37	35
30-60	28OC16 (brass) (30 M Strainer)	C	30	1.40	92	79	69	62	55	50	46	43	40	37	35	33
			40	1.62	107	92	80	71	64	58	53	49	46	43	40	38
			50	1.81	119	102	90	80	72	65	60	55	51	48	45	42
			60	1.98	131	112	98	87	78	71	65	60	56	52	49	46

* Droplet size refers to ASAE S-572 @40 PSI

- spray tips are classified as GPM @ 40 PSI

BANDING AND DIRECTED SPRAY TIPS

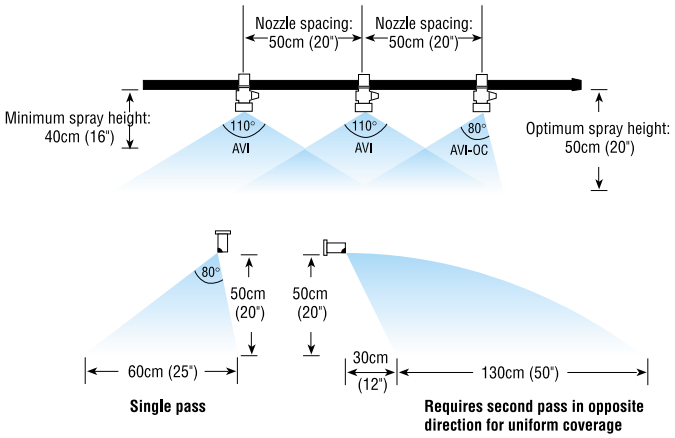


AVI-OC Air-Inducing Venturi Off-Center Flat Fan Ceramic Tip

AVI-OC - The Albuz AVI-OC air-inducing Venturi off-center ceramic spray tip. Air suction (Venturi system) provides large, air-filled droplets that burst on impact with target.

AVI-OC 80° - Air-Inducing Venturi Ceramic Off-Center

	40 PSI	50 PSI	60 PSI	70 PSI	80 PSI	90 PSI	100 PSI
AVI-OC-8002	XC	VC	VC	VC	VC	VC	VC
AVI-OC-80025	XC	XC	VC	VC	VC	VC	VC
AVI-OC-8003	XC	XC	XC	VC	VC	VC	VC
AVI-OC-8004	XC	XC	XC	XC	VC	VC	VC

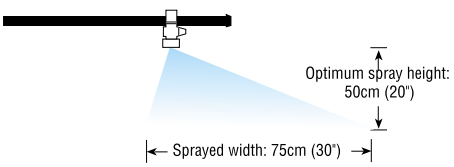


OC – Off-Center Flat Fan Brass Tip

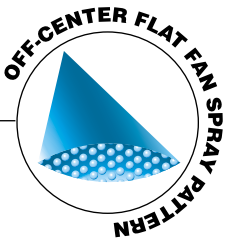
OC – The Hypro OC flat fan off-center brass spray tip.

OC - Brass Off-Center

	30 PSI	40 PSI	50 PSI	60 PSI
28OC2	M	M	M	F
28OC3	M	M	M	F
28OC4	C	M	M	M
28OC6	C	C	M	M
28OC8	C	C	C	M
28OC12	C	C	C	C
28OC16	VC	C	C	C

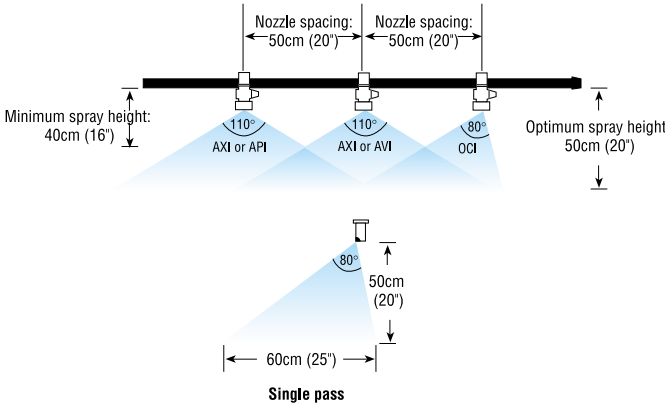


BANDING AND DIRECTED SPRAY TIPS



OCI – Off-Center Flat Fan Ceramic Tip

OCI - The Albuz OCI off-center flat fan ceramic spray tip.



OCI 80° - Ceramic Off-Center

	30 PSI	40 PSI	50 PSI	60 PSI
OCI-8002	M	M	M	F
OCI-8003	M	M	M	M
OCI-8004	M	M	M	M

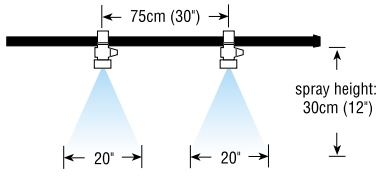
BANDING AND DIRECTED SPRAY TIPS

E – Fan Tip Even Flat Fan

Fan Tip (E) – The Hypro Even Flat Fan spray tip is an excellent choice for banding and directed post applications.

E 80° - Even Flat Fan

	30 PSI	40 PSI	50 PSI	60 PSI
30-01E80	F	F	F	F
30-015E80	M	F	F	F
30-02E80	M	M	M	F
30-03E80	C	M	M	M
30-04E80	C	C	M	M
30-05E80	C	C	C	C
30-06E80	C	C	C	C
30-08E80	VC	C	C	C



* Height above target determines band width.

Flow Regulating Disc Chart

AMT Ceramic/DC Polyacetal Performance Chart

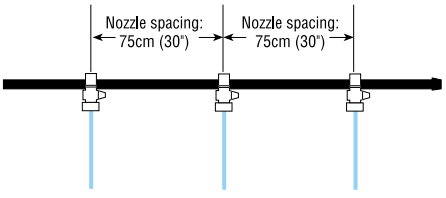
Color	Part Numbers DC and AMT	US GALS MIN psi 10	psi 15	psi 20	psi 25	psi 30	psi 35	psi 40	psi 60	psi 80	psi 100	psi 150	psi 200	psi 300	psi 725
Lilac	30-DC-0.5	0.038	0.047	0.054	0.060	0.066	0.071	0.076	0.093	0.107	0.120	0.147			
Gray	30-DC-01	0.057	0.070	0.081	0.090	0.099	0.107	0.114	0.140	0.161	0.180	0.221			
Pink	AMT15007-n	0.063	0.077	0.088	0.099	0.108	0.117	0.125	0.153	0.177	0.198	0.242	0.280	0.342	0.532
	AMT15007-w	0.064	0.078	0.091	0.101	0.111	0.120	0.128	0.157	0.181	0.203	0.248	0.286	0.351	0.545
	AMT15008-n	0.066	0.080	0.093	0.104	0.114	0.123	0.131	0.161	0.185	0.207	0.254	0.293	0.359	0.558
Black	30-DC-1.5	0.078	0.096	0.110	0.123	0.135	0.146	0.156	0.191	0.221	0.247	0.302			
	AMT15008-w	0.082	0.101	0.116	0.130	0.143	0.154	0.165	0.202	0.233	0.260	0.319	0.368	0.451	0.701
	AMT 15010-n	0.099	0.121	0.140	0.157	0.172	0.185	0.198	0.243	0.280	0.314	0.384	0.443	0.543	0.844
Brown	30-DC-02	0.105	0.129	0.148	0.166	0.182	0.196	0.210	0.257	0.297	0.332	0.407			
Orange	30-DC-03	0.133	0.163	0.188	0.210	0.230	0.249	0.266	0.326	0.376	0.421	0.515			
	AMT 15010-w	0.139	0.170	0.196	0.219	0.240	0.260	0.278	0.340	0.393	0.439	0.538	0.621	0.760	1.18
	AMT 15012-n	0.143	0.176	0.203	0.227	0.248	0.268	0.287	0.351	0.406	0.453	0.555	0.641	0.785	1.22
Pink	AMT 15012-w	0.174	0.213	0.246	0.275	0.301	0.325	0.348	0.426	0.492	0.550	0.673	0.778	0.952	1.48
	AMT 15015-n	0.217	0.265	0.306	0.342	0.375	0.405	0.433	0.531	0.613	0.685	0.839	0.969	1.19	1.84
Red	30-DC-04	0.242	0.296	0.342	0.383	0.419	0.453	0.484	0.593	0.684	0.765	0.937			
	AMT 15015-w	0.287	0.351	0.406	0.453	0.497	0.536	0.573	0.702	0.811	0.907	1.11	1.28	1.57	2.44
	AMT 15018-n	0.302	0.370	0.427	0.477	0.523	0.565	0.604	0.740	0.854	0.955	1.17	1.35	1.65	2.57
Pink	AMT 15020-n	0.375	0.460	0.531	0.593	0.650	0.702	0.750	0.919	1.06	1.19	1.45	1.68	2.06	3.19
	AMT 15018-w	0.387	0.474	0.548	0.613	0.671	0.725	0.775	0.949	1.10	1.23	1.50	1.73	2.12	3.30
Blue	30-DC-05	0.392	0.480	0.554	0.620	0.679	0.733	0.784	0.960	1.11	1.24	1.52			
Pink	AMT 15020-w	0.471	0.577	0.666	0.745	0.816	0.882	0.943	1.15	1.33	1.49	1.83	2.11	2.58	4.01
	AMT 15023-n	0.485	0.594	0.686	0.767	0.840	0.907	0.970	1.19	1.37	1.53	1.88	2.17	2.66	4.13
Yellow	30-DC-06	0.570	0.698	0.806	0.901	0.987	1.07	1.14	1.40	1.61	1.80	2.21			
Pink	AMT 15023-w	0.607	0.743	0.858	0.960	1.05	1.14	1.21	1.49	1.72	1.92	2.35	2.71	3.32	5.17
Green	30-DC-07	0.762	0.933	1.08	1.20	1.32	1.43	1.52	1.87	2.16	2.41	2.95			
White	30-DC-08	0.960	1.18	1.36	1.52	1.66	1.80	1.92	2.35	2.72	3.04	3.72			
Lime Green	30-DC-10	1.55	1.90	2.19	2.45	2.68	2.90	3.10	3.80	4.38	4.90	6.00			
Royal Blue	30-DC-12	2.20	2.69	3.11	3.48	3.81	4.12	4.40	5.39	6.22	6.96	8.52			

w - numbers can be read when installed with cap.
n - numbers on disc cannot be read when installed with cap.

FLOW REGULATING DISCS

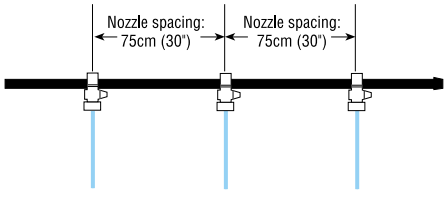
DC – Flow Regulating Disc

DC (DC) - The Hypro DC regulates flow and produces a straight stream pattern. Precision molded in polyacetal (Hostaform®).



AMT – Ceramic Flow Regulating Disc

AMT – The Albuz ceramic disc regulates flow and produces a straight stream pattern. Precision molded in ceramic.



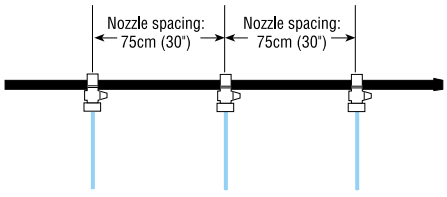
CM Straight Stream Application Chart

CM Straight Stream Nozzles		Gallons per Acre 20 inch spacing								Gallons per Acre 30 inch spacing								Gallons per Acre 40 inch spacing							
						MPH							MPH							MPH					
PSI Range	Tip and Strainer	PSI	GPM	4	6	8	10	12	14	16	20	4	6	8	10	12	14	16	20	4	6	8	10	12	14	16	20
15-150	90A2CM02E00 (100 M Strainer)	15	0.12	9.1	6.1	4.5	3.6	3.0	2.6	2.3	1.8	6.0	4.0	3.0	2.4	2.0	1.7	1.5	1.2	4.5	3.0	2.3	1.8	1.5	1.3	1.1	0.9
		20	0.14	10.5	7.0	5.3	4.2	3.5	3.0	2.6	2.1	6.9	4.6	3.5	2.8	2.3	2.0	1.7	1.4	5.3	3.5	2.6	2.1	1.8	1.5	1.3	1.1
		25	0.16	11.7	7.8	5.9	4.7	3.9	3.4	2.9	2.3	7.7	5.2	3.9	3.1	2.6	2.2	1.9	1.5	5.9	3.9	2.9	2.3	2.0	1.7	1.5	1.2
		30	0.17	12.9	8.6	6.4	5.1	4.3	3.7	3.2	2.6	8.5	5.7	4.2	3.4	2.8	2.4	2.1	1.7	6.4	4.3	3.2	2.6	2.1	1.8	1.6	1.3
		35	0.19	13.9	9.3	6.9	5.6	4.6	4.0	3.5	2.8	9.2	6.1	4.6	3.7	3.1	2.6	2.3	1.8	6.9	4.6	3.5	2.8	2.3	2.0	1.7	1.4
		40	0.20	14.9	9.9	7.4	5.9	5.0	4.2	3.7	3.0	9.8	6.5	4.9	3.9	3.3	2.8	2.5	2.0	7.4	5.0	3.7	3.0	2.5	2.1	1.9	1.5
		60	0.24	18.2	12.1	9.1	7.3	6.1	5.2	4.5	3.6	12.0	8.0	6.0	4.8	4.0	3.4	3.0	2.4	9.1	6.1	4.5	3.6	3.0	2.6	2.3	1.8
		80	0.28	21	14.0	10.5	8.4	7.0	6.0	5.3	4.2	13.9	9.2	6.9	5.5	4.6	4.0	3.5	2.8	10.5	7.0	5.3	4.2	3.5	3.0	2.6	2.1
		100	0.32	24	15.7	11.7	9.4	7.8	6.7	5.9	4.7	15.5	10.3	7.7	6.2	5.2	4.4	3.9	3.1	11.7	7.8	5.9	4.7	3.9	3.4	2.9	2.3
		125	0.35	26	17.5	13.1	10.5	8.8	7.5	6.6	5.3	17.3	11.6	8.7	6.9	5.8	5.0	4.3	3.5	13.1	8.8	6.6	5.3	4.4	3.8	3.3	2.6
		150	0.39	29	19.2	14.4	11.5	9.6	8.2	7.2	5.8	19.0	12.7	9.5	7.6	6.3	5.4	4.7	3.8	14.4	9.6	7.2	5.8	4.8	4.1	3.6	2.9
15-150	90A2CM04E00	15	0.24	18.2	12.1	9.1	7.3	6.1	5.2	4.5	3.6	12.0	8.0	6.0	4.8	4.0	3.4	3.0	2.4	9.1	6.1	4.5	3.6	3.0	2.6	2.3	1.8
		20	0.28	21	14.0	10.5	8.4	7.0	6.0	5.3	4.2	13.9	9.2	6.9	5.5	4.6	4.0	3.5	2.8	10.5	7.0	5.3	4.2	3.5	3.0	2.6	2.1
		25	0.32	23	15.7	11.7	9.4	7.8	6.7	5.9	4.7	15.5	10.3	7.7	6.2	5.2	4.4	3.9	3.1	11.7	7.8	5.9	4.7	3.9	3.4	2.9	2.3
		30	0.35	26	17.1	12.9	10.3	8.6	7.3	6.4	5.1	17.0	11.3	8.5	6.8	5.7	4.9	4.2	3.4	12.9	8.6	6.4	5.1	4.3	3.7	3.2	2.6
		35	0.37	28	18.5	13.9	11.1	9.3	7.9	6.9	5.6	18.3	12.2	9.2	7.3	6.1	5.2	4.6	3.7	13.9	9.3	6.9	5.6	4.6	4.0	3.5	2.8
		40	0.40	30	19.8	14.9	11.9	9.9	8.5	7.4	5.9	19.6	13.1	9.8	7.8	6.5	5.6	4.9	3.9	14.9	9.9	7.4	5.9	5.0	4.2	3.7	3.0
		60	0.49	36	24	18.2	14.5	12.1	10.4	9.1	7.3	24	16.0	12.0	9.6	8.0	6.9	6.0	4.8	18.2	12	9.1	7.3	6.1	5.2	4.5	3.6
		80	0.57	42	28	21	16.8	14.0	12.0	10.5	8.4	28	18.5	13.9	11.1	9.2	7.9	6.9	5.5	21	14.0	10.5	8.4	7.0	6.0	5.3	4.2
		100	0.63	47	31	24	18.8	15.7	13.4	11.7	9.4	31	20	15.5	12.4	10.3	8.9	7.7	6.2	24	15.7	11.7	9.4	7.8	6.7	5.9	4.7
		125	0.71	53	35	26	21	17.5	15.0	13.1	10.5	35	23	17.3	13.9	11.6	9.9	8.7	6.9	26	17.5	13.1	10.5	8.8	7.5	6.6	5.3
		150	0.77	58	38	29	23	19.2	16.4	14.4	11.5	38	25	19.0	15.2	12.7	10.8	9.5	7.6	29	19.2	14.4	11.5	9.6	8.2	7.2	5.8
15-150	90A2CM05E00	15	0.31	23	15.2	11.4	9.1	7.6	6.5	5.7	4.5	15.0	10.0	7.5	6.0	5.0	4.3	3.8	3.0	11.4	7.6	5.7	4.5	3.8	3.2	2.8	2.3
		20	0.35	26	17.5	13.1	10.5	8.8	7.5	6.6	5.3	17.3	11.6	8.7	6.9	5.8	5.0	4.3	3.5	13.1	8.8	6.6	5.3	4.4	3.8	3.3	2.6
		25	0.40	29	19.6	14.7	11.7	9.8	8.4	7.3	5.9	19.4	12.9	9.7	7.7	6.5	5.5	4.8	3.9	14.7	9.8	7.3	5.9	4.9	4.2	3.7	2.9
		30	0.43	32	21	16.1	12.9	10.7	9.2	8.0	6.4	21	14.1	10.6	8.5	7.1	6.1	5.3	4.2	16.1	10.7	8.0	6.4	5.4	4.6	4.0	3.2
		35	0.47	35	23	17.4	13.9	11.6	9.9	8.7	6.9	23	15.3	11.5	9.2	7.6	6.5	5.7	4.6	17.4	11.6	8.7	6.9	5.8	5.0	4.3	3.5
		40	0.50	37	25	18.6	14.9	12.4	10.6	9.3	7.4	25	16.3	12.3	9.8	8.2	7.0	6.1	4.9	18.6	12.4	9.3	7.4	6.2	5.3	4.6	3.7
		60	0.61	45	30	23	18.2	15.2	13.0	11.4	9.1	30	20	15.0	12.0	10.0	8.6	7.5	6.0	23	15.2	11.4	9.1	7.6	6.5	5.7	4.5
		80	0.71	53	35	26	21	17.5	15.0	13.1	10.5	35	23	17.3	13.9	11.6	9.9	8.7	6.9	26	17.5	13.1	10.5	8.8	7.5	6.6	5.3
		100	0.79	59	39	29	24	19.6	16.8	14.7	11.7	38	26	19.4	15.5	12.9	11.1	9.7	7.7	29	19.6	14.7	11.7	9.8	8.4	7.3	5.9
		125	0.88	66	44	33	26	22	18.8	16.4	13.1	43	29	22	17.3	14.4	12.4	10.8	8.7	33	22	16.4	13.1	10.9	9.4	8.2	6.6
		150	0.97	72	48	36	29	24	21	18.0	14.4	47	32	24	19.0	15.8	13.6	11.9	9.5	36	24	18.0	14.4	12.0	10.3	9.0	7.2
15-150	90A2CM10E00	15	0.61	45	30	23	18.2	15.2	13.0	11.4	9.1	30	20	15.0	12.0	10.0	8.6	7.5	6.0	23	15.2	11.4	9.1	7.6	6.5	5.7	4.5
		20	0.71	53	35	26	21	17.5	15.0	13.1	10.5	35	23	17.3	13.9	11.6	9.9	8.7	6.9	26	17.5	13.1	10.5	8.8	7.5	6.6	5.3
		25	0.79	59	39	29	24	19.6	16.8	14.7	11.7	39	26	19.4	15.5	12.9	11.1	9.7	7.7	29	19.6	14.7	11.7	9.8	8.4	7.3	5.9
		30	0.87	64	43	32	26	21	18.4	16.1	12.9	42	28	21	17.0	14.1	12.1	10.6	8.5	32	22	16.1	12.9	10.7	9.2	8.0	6.4
		35	0.94	69	46	35	28	23	19.8	17.4	13.9	46	31	23	18.3	15.3	13.1	11.5	9.2	35	23	17.4	13.9	11.6	9.9	8.7	6.9
		40	1.00	74	50	37	30	25	21	18.6	14.9	49	33	25	19.6	16.3	14.0	12.3	9.8	37	25	18.6	14.9	12.4	10.6	9.3	7.4
		60	1.22	91	61	46	36	30	26	23	18.2	60	40	30	24	20	17.1	15.0	12.0	46	30	23	18.2	15.2	13.0	11.4	9.1
		80	1.41	105	70	53	42	35	30	26	21	69	46	35	28	23	19.8	17.3	13.9	53	35	26	21	17.5	15.0	13.1	10.5
		100	1.58	117	78	59	47	39	34	29	24	78	52	39	31	26	22	19.4	15.5	59	39	29	24	19.6	16.8	14.7	11.7
		125	1.77	131	88	66	53	44	38	33	26	87	58	43	35	29	25	22	17.3	66	44	33	26	22	18.8	16.4	13.1
		150	1.94	144	96	72	58	48	41	36	29	95	63	47	38	32	27	24	19.0	72	48	36	29	24	20	18.0	14.4
15-150	90A2CM15E00	15	0.92	68	46	34	27	23	19.5	17.1	13.6	45	30	23	18	15.0	12.9	11.3	9.0	34	23	17.1	13.6	11.4	9.7	8.5	6.8
		20	1.06	79	53	39	32	26	23	19.7	15.8	52	35	26	21	17.3	14.9	13.0	10.4	39	26	19.7	15.8	13.1	11.3	9.8	7.9
		25	1.19	88	59	44	35	29	25	22	17.6	58	39	29	23	19.4	16.6	14.5	11.6	44	29	22	17.6	14.7	12.6	11.0	8.8
		30	1.30	96	64	48	39	32	28	24	19.3	64	42	32	26	21	18.2	15.9	12.7	48	32	24	19.3	16.1	13.8	12.1	9.6
		35	1.40	104	70	52	42	35	30	26	21	69	46	34	28	23	19.6	17.2	13.8	52	35	26	21	17.4	14.9	13.0	10.4
		40	1.50	111	74	56	45	37	32	28	22	74	49	37	29	25	21	18.4	14.7	56	37	28	22	18.6	15.9	13.9	11.1
		60	1.84	136	91	68	55	46	39	34	27	90	60	45	36	30	26	23	18.0	68	46	34	27	23	19.5	17.1	13.6
		80	2.12	158	105	79	63	53	45	39	32	104	69	52	42	35	30	26	21	79	53	39	32	26	23	19.7	15.8
		100	2.37	176	117	88	70	59	50	44	35	116	78	58	47	39	33	29	23	88	59	44	35	29	25	22	17.6
		125	2.65	197	131	98	79	66	56	49	39	130	87	65	52	43	37	33	26	98	66	49	39	33	28	25	19.7
		150	2.90	216	144	108	86	72	62	54	43	142	95	71	57	47	41	36	29	108	72	54	43	36	31	27	22
15-150	90A2CM20E00	15	1.22	91	61	46	36	30	26	23	18	60	40	30	24	20	17.1	15.0	12.0	46	30	23	18.2	15.2	13.0	11.4	9.1
		20	1.41	105	70	53	42	35	30	26	21	69	46	35	28	23	19.8	17.3	13.9	53	35	26	21	17.5	15.0	13.1	10.5
		25	1.58	117	78	59	47	39	34	29	24	78	52	39	31	26	22	19.4	15.5	59	39	29	24	19.6	16.8	14.7	11.7
		30	1.73	129	86	64	51	43	37	32	26	85	57	42	34	28	24	21	17.0	64	43	32	26	21	18.4	16.1	12.9
		35	1.87	139	93	70	56	46	40	35	28	92	61	46	37	31	26	23	18.3	70	46	35	28	23	19.8	17.4	13.9
		40	2.00	149	99	74	59	50	42	37	30	98	65	49	39	33	28	25	19.6	74	50	37	30	25	21	18.6	14.9
		60	2.45	182	121	91	73	61	52	46	36	120	80	60	48	40	34	30	24	91	61	46	36	30	26	23	18.2
		80	2.83	210	140	105	84	70	60	53	42	139	92	69	55	46	40	35	28	105	70	53	42	35	30	26	21
		100	3.16	235	157	117	94	78	67	59	47	155	103	78	62	52	44	39	31	117	78	59	47	39	34	29	23
		125	3.54	263	175	131	105	88	75	66	53	173	116	87	69	58	50	43	35	131	88	66	53	44	38	33	26
		150	3.87	288	192	144	115	96	82	72	58	190	127	95	76	63	54	47	38	144	96	72	58	48	41	36	29

- spray tips are classified as GPM @ 40 PSI

CM – Straight Stream Nozzles

CM – The Hypro CM regulates flow, then produces a straight stream pattern. Precision molded in polyvinlyidene fluoride (PVDF) Solef®.



Banding and Directed Applications Chart - Hollow cone

ATR, HCA and HCX Spray Tips Chart

Hollow Cone Spray Tips		Droplet Size @40 PSI*	Gallons per Acre 20 inch spacing								Gallons per Acre 30 inch spacing								Gallons per Acre 40 inch spacing							
			MPH								MPH								MPH							
PSI Range	Tip and Strainer		PSI	GPM	4	6	8	10	12	14	16	20	4	6	8	10	12	14	16	20	4	6	8	10	12	14	16	20
40-150	30HCX2 White (100 M Strainer)	VF	40	0.03	2.3	1.5	1.2	0.9	0.8	0.7	0.6	0.5	1.5	1.0	0.8	0.6	0.5	0.4	0.4	0.3	1.2	0.8	0.6	0.5	0.4	0.3	0.3	0.2
			60	0.04	2.8	1.9	1.4	1.1	0.9	0.8	0.7	0.6	1.9	1.3	0.9	0.8	0.6	0.5	0.5	0.4	1.4	0.9	0.7	0.6	0.5	0.4	0.4	0.3
			80	0.04	3.3	2.2	1.6	1.3	1.1	0.9	0.8	0.7	2.2	1.4	1.1	0.9	0.7	0.6	0.5	0.4	1.6	1.1	0.8	0.7	0.5	0.5	0.4	0.3
			100	0.05	3.7	2.4	1.8	1.5	1.2	1.0	0.9	0.7	2.4	1.6	1.2	1.0	0.8	0.7	0.6	0.5	1.8	1.2	0.9	0.7	0.6	0.5	0.5	0.4
			125	0.06	4.1	2.7	2.1	1.6	1.4	1.2	1.0	0.8	2.7	1.8	1.4	1.1	0.9	0.8	0.7	0.5	2.1	1.4	1.0	0.8	0.7	0.6	0.5	0.4
			150	0.06	4.5	3.0	2.2	1.8	1.5	1.3	1.1	0.9	3.0	2.0	1.5	1.2	1.0	0.8	0.7	0.6	2.2	1.5	1.1	0.9	0.7	0.6	0.6	0.4
			175	0.07	4.9	3.2	2.4	1.9	1.6	1.4	1.2	1.0	3.2	2.1	1.6	1.3	1.1	0.9	0.8	0.6	2.4	1.6	1.2	1.0	0.8	0.7	0.6	0.5
			200	0.07	5.2	3.5	2.6	2.1	1.7	1.5	1.3	1.0	3.4	2.3	1.7	1.4	1.1	1.0	0.9	0.7	2.6	1.7	1.3	1.0	0.9	0.7	0.6	0.5
			250	0.08	5.8	3.9	2.9	2.3	1.9	1.7	1.5	1.2	3.8	2.6	1.9	1.5	1.3	1.1	1.0	0.8	2.9	1.9	1.5	1.2	1.0	0.8	0.7	0.6
			300	0.09	6.4	4.2	3.2	2.5	2.1	1.8	1.6	1.3	4.2	2.8	2.1	1.7	1.4	1.2	1.0	0.8	3.2	2.1	1.6	1.3	1.1	0.9	0.8	0.6
			350	0.09	6.9	4.6	3.4	2.7	2.3	2.0	1.7	1.4	4.5	3.0	2.3	1.8	1.5	1.3	1.1	0.9	3.4	2.3	1.7	1.4	1.1	1.0	0.9	0.7
40-150	30HCX3 Pink (100 M Strainer)	VF	40	0.05	3.5	2.3	1.7	1.4	1.2	1.0	0.9	0.7	2.3	1.5	1.1	0.9	0.8	0.7	0.6	0.5	1.7	1.2	0.9	0.7	0.6	0.5	0.4	0.3
			60	0.06	4.3	2.8	2.1	1.7	1.4	1.2	1.1	0.9	2.8	1.9	1.4	1.1	0.9	0.8	0.7	0.6	2.1	1.4	1.1	0.9	0.7	0.6	0.5	0.4
			80	0.07	4.9	3.3	2.5	2.0	1.6	1.4	1.2	1.0	3.2	2.2	1.6	1.3	1.1	0.9	0.8	0.6	2.5	1.6	1.2	1.0	0.8	0.7	0.6	0.5
			100	0.07	5.5	3.7	2.8	2.2	1.8	1.6	1.4	1.1	3.6	2.4	1.8	1.5	1.2	1.0	0.9	0.7	2.8	1.8	1.4	1.1	0.9	0.8	0.7	0.6
			125	0.08	6.2	4.1	3.1	2.5	2.1	1.8	1.5	1.2	4.1	2.7	2.0	1.6	1.4	1.2	1.0	0.8	3.1	2.1	1.5	1.2	1.0	0.9	0.8	0.6
			150	0.09	6.7	4.5	3.4	2.7	2.2	1.9	1.7	1.3	4.4	3.0	2.2	1.8	1.5	1.3	1.1	0.9	3.4	2.2	1.7	1.3	1.1	1.0	0.8	0.7
			175	0.10	7.3	4.9	3.6	2.9	2.4	2.1	1.8	1.5	4.8	3.2	2.4	1.9	1.6	1.4	1.2	1.0	3.6	2.4	1.8	1.5	1.2	1.0	0.9	0.7
			200	0.10	7.8	5.2	3.9	3.1	2.6	2.2	1.9	1.6	5.1	3.4	2.6	2.1	1.7	1.5	1.3	1.0	3.9	2.6	1.9	1.6	1.3	1.1	1.0	0.8
			250	0.12	8.7	5.8	4.4	3.5	2.9	2.5	2.2	1.7	5.7	3.8	2.9	2.3	1.9	1.6	1.4	1.1	4.4	2.9	2.2	1.7	1.5	1.2	1.1	0.9
			300	0.13	9.5	6.4	4.8	3.8	3.2	2.7	2.4	1.9	6.3	4.2	3.1	2.5	2.1	1.8	1.6	1.3	4.8	3.2	2.4	1.9	1.6	1.4	1.2	1.0
			350	0.14	10.3	6.9	5.1	4.1	3.4	2.9	2.6	2.1	6.8	4.5	3.4	2.7	2.3	1.9	1.7	1.4	5.1	3.4	2.6	2.1	1.7	1.5	1.3	1.0
40-350	ATR-White (100 M Strainer)	VF	40	0.06	4.1	2.7	2.0	1.6	1.4	1.2	1.0	0.8	2.7	1.8	1.3	1.1	0.9	0.8	0.7	0.5	2.0	1.4	1.0	0.8	0.7	0.6	0.5	0.4
			60	0.07	5.0	3.3	2.5	2.0	1.7	1.4	1.3	1.0	3.3	2.2	1.7	1.3	1.1	0.9	0.8	0.7	2.5	1.7	1.3	1.0	0.8	0.7	0.6	0.5
			80	0.08	5.8	3.9	2.9	2.3	1.9	1.7	1.4	1.2	3.8	2.5	1.9	1.5	1.3	1.1	1.0	0.8	2.9	1.9	1.4	1.2	1.0	0.8	0.7	0.6
			100	0.09	6.5	4.3	3.2	2.6	2.2	1.8	1.6	1.3	4.3	2.8	2.1	1.7	1.4	1.2	1.1	0.9	3.2	2.2	1.6	1.3	1.1	0.9	0.8	0.6
			125	0.10	7.2	4.8	3.6	2.9	2.4	2.1	1.8	1.4	4.8	3.2	2.4	1.9	1.6	1.4	1.2	1.0	3.6	2.4	1.8	1.4	1.2	1.0	0.9	0.7
			150	0.11	7.9	5.3	4.0	3.2	2.6	2.3	2.0	1.6	5.2	3.5	2.6	2.1	1.7	1.5	1.3	1.0	4.0	2.6	2.0	1.6	1.3	1.1	1.0	0.8
			175	0.12	8.5	5.7	4.3	3.4	2.8	2.4	2.1	1.7	5.6	3.8	2.8	2.3	1.9	1.6	1.4	1.1	4.3	2.8	2.1	1.7	1.4	1.2	1.1	0.9
			200	0.12	9.1	6.1	4.6	3.7	3.0	2.6	2.3	1.8	6.0	4.0	3.0	2.4	2.0	1.7	1.5	1.2	4.6	3.0	2.3	1.8	1.5	1.3	1.1	0.9
			250	0.14	10.2	6.8	5.1	4.1	3.4	2.9	2.6	2.0	6.7	4.5	3.4	2.7	2.2	1.9	1.7	1.3	5.1	3.4	2.6	2.0	1.7	1.5	1.3	1.0
			300	0.15	11.2	7.5	5.6	4.5	3.7	3.2	2.8	2.2	7.4	4.9	3.7	3.0	2.5	2.1	1.8	1.5	5.6	3.7	2.8	2.2	1.9	1.6	1.4	1.1
			350	0.16	12.1	8.1	6.0	4.8	4.0	3.5	3.0	2.4	8.0	5.3	4.0	3.2	2.7	2.3	2.0	1.6	6.0	4.0	3.0	2.4	2.0	1.7	1.5	1.2
40-350	HCA-01 Green (100 M Strainer)	VF	40	0.07	4.9	3.3	2.5	2.0	1.6	1.4	1.2	1.0	3.2	2.2	1.6	1.3	1.1	0.9	0.8	0.6	2.5	1.6	1.2	1.0	0.8	0.7	0.6	0.5
			60	0.08	6.0	4.0	3.0	2.4	2.0	1.7	1.5	1.2	4.0	2.6	2.0	1.6	1.3	1.1	1.0	0.8	3.0	2.0	1.5	1.2	1.0	0.9	0.8	0.6
			80	0.09	6.9	4.6	3.5	2.8	2.3	2.0	1.7	1.4	4.6	3.0	2.3	1.8	1.5	1.3	1.1	0.9	3.5	2.3	1.7	1.4	1.2	1.0	0.9	0.7
			100	0.10	7.7	5.2	3.9	3.1	2.6	2.2	1.9	1.5	5.1	3.4	2.6	2.0	1.7	1.5	1.3	1.0	3.9	2.6	1.9	1.5	1.3	1.1	1.0	0.8
			125	0.12	8.7	5.8	4.3	3.5	2.9	2.5	2.2	1.7	5.7	3.8	2.9	2.3	1.9	1.6	1.4	1.1	4.3	2.9	2.2	1.7	1.4	1.2	1.1	0.9
			150	0.13	9.5	6.3	4.7	3.8	3.2	2.7	2.4	1.9	6.3	4.2	3.1	2.5	2.1	1.8	1.6	1.3	4.7	3.2	2.4	1.9	1.6	1.4	1.2	0.9
			175	0.14	10.3	6.8	5.1	4.1	3.4	2.9	2.6	2.1	6.8	4.5	3.4	2.7	2.3	1.9	1.7	1.4	5.1	3.4	2.6	2.1	1.7	1.5	1.3	1.0
			200	0.15	11.0	7.3	5.5	4.4	3.7	3.1	2.7	2.2	7.2	4.8	3.6	2.9	2.4	2.1	1.8	1.4	5.5	3.7	2.7	2.2	1.8	1.6	1.4	1.1
			250	0.17	12.3	8.2	6.1	4.9	4.1	3.5	3.1	2.5	8.1	5.4	4.0	3.2	2.7	2.3	2.0	1.6	6.1	4.1	3.1	2.5	2.0	1.8	1.5	1.2
			300	0.18	13.4	8.9	6.7	5.4	4.5	3.8	3.4	2.7	8.9	5.9	4.4	3.5	3.0	2.5	2.2	1.8	6.7	4.5	3.4	2.7	2.2	1.9	1.7	1.3
			350	0.20	14.5	9.7	7.2	5.8	4.8	4.1	3.6	2.9	9.6	6.4	4.8	3.8	3.2	2.7	2.4	1.9	7.2	4.8	3.6	2.9	2.4	2.1	1.8	1.4
40-350	ATR-Lilac	F	40	0.07	5.2	3.5	2.6	2.1	1.7	1.5	1.3	1.0	3.4	2.3	1.7	1.4	1.1	1.0	0.9	0.7	2.6	1.7	1.3	1.0	0.9	0.7	0.7	0.5
			60	0.09	6.4	4.3	3.2	2.6	2.1	1.8	1.6	1.3	4.2	2.8	2.1	1.7	1.4	1.2	1.1	0.8	3.2	2.1	1.6	1.3	1.1	0.9	0.8	0.6
			80	0.10	7.4	4.9	3.7	3.0	2.5	2.1	1.8	1.5	4.9	3.2	2.4	1.9	1.6	1.4	1.2	1.0	3.7	2.5	1.8	1.5	1.2	1.1	0.9	0.7
			100	0.11	8.3	5.5	4.1	3.3	2.8	2.4	2.1	1.7	5.4	3.6	2.7	2.2	1.8	1.6	1.4	1.1	4.1	2.8	2.1	1.7	1.4	1.2	1.0	0.8
40-150	30HCX4 Lt. Blue (50 M Strainer)	VF	125	0.12	9.2	6.2	4.6	3.7	3.1	2.6	2.3	1.8	6.1	4.1	3.0	2.4	2.0	1.7	1.5	1.2	4.6	3.1	2.3	1.8	1.5	1.3	1.2	0.9
			150	0.14	10.1	6.7	5.1	4.0	3.4	2.9	2.5	2.0	6.7	4.4	3.3	2.7	2.2	1.9	1.7	1.3	5.1	3.4	2.5	2.0	1.7	1.4	1.3	1.0
			175	0.15	10.9	7.3	5.5	4.4	3.6	3.1	2.7	2.2	7.2	4.8	3.6	2.9	2.4	2.1	1.8	1.4	5.5	3.6	2.7	2.2	1.8	1.6	1.4	1.1
			200	0.16	11.7	7.8	5.8	4.7	3.9	3.3	2.9	2.3	7.7	5.1	3.9	3.1	2.6	2.2	1.9	1.5	5.8	3.9	2.9	2.3	1.9	1.7	1.5	1.2
			250	0.18	13.1	8.7	6.5	5.2	4.4	3.7	3.3	2.6	8.6	5.7	4.3	3.4	2.9	2.5	2.2	1.7	6.5	4.4	3.3	2.6	2.2	1.9	1.6	1.3
			300	0.19	14.3	9.5	7.1	5.7	4.8	4.1	3.6	2.9	9.4	6.3	4.7	3.8	3.1	2.7	2.4	1.9	7.1	4.8	3.6	2.9	2.4	2.0	1.8	1.4
			350	0.21	15.4	10.3	7.7	6.2	5.1	4.4	3.9	3.1	10.2	6.8	5.1	4.1	3.4	2.9	2.5	2.0	7.7	5.1	3.9	3.1	2.6	2.2	1.9	1.5
40-350	ATR-Brown (50 M Strainer)	VF	40	0.10	7.2	4.8	3.6	2.9	2.4	2.1	1.8	1.4	4.8	3.2	2.4	1.9	1.6	1.4	1.2	1.0	3.6	2.4	1.8	1.4	1.2	1.0	0.9	0.7
			60	0.12	8.8	5.9	4.4	3.5	2.9	2.5	2.2	1.8	5.8	3.9	2.9	2.3	1.9	1.7	1.5	1.2	4.4	2.9	2.2	1.8	1.5	1.3	1.1	0.9
			80	0.14	10.2	6.8	5.1	4.1	3.4	2.9	2.5	2.0	6.7	4.5	3.4	2.7	2.2	1.9	1.7	1.3	5.1	3.4	2.5	2.0	1.7	1.5	1.3	1.0
			100	0.15	11.4	7.6	5.7	4.6	3.8	3.3	2.8	2.3	7.5	5.0	3.8	3.0	2.5	2.1	1.9	1.5	5.7	3.8	2.8	2.3	1.9	1.6	1.4	1.1
			125	0.17	12.7	8.5	6.4	5.1	4.2	3.6	3.2	2.5	8.4	5.6	4.2	3.4	2.8	2.4	2.1	1.7	6.4	4.2	3.2	2.5	2.1	1.8	1.6	1.3
			150	0.19	13.9	9.3	7.0	5.6	4.6	4.0	3.5	2.8	9.2	6.1	4.6	3.7	3.1	2.6	2.3	1.8	7.0	4.6	3.5	2.8	2.3	2.0	1.7	1.4
			175	0.20	15.1	10.0	7.5	6.0	5.0	4.3	3.8	3.0	9.9	6.6	5.0	4.0	3.3	2.8	2.5	2.0	7.5	5.0	3.8	3.0	2.5	2.2	1.9	1.5
			200	0.22	16.1	10.7	8.1	6.4	5.4	4.6	4.0	3.2	10.6	7.1	5.3	4.3	3.5	3.0	2.7	2.1	8.1	5.4	4.0	3.2	2.7	2.3	2.0	1.6
			250	0.24	18	12.0	9.0	7.2	6.0	5.1	4.5	3.6	11.9	7.9	5.9	4.8	4.0	3.4	3.0	2.4	9.0	6.0	4.5	3.6	3.0	2.6	2.3	1.8
			300	0.27	20	13.1	9.9	7.9	6.6	5.6	4.9	3.9	13.0	8.7	6.5	5.2	4.3	3.7	3.3	2.6	9.9	6.6	4.9	3.9	3.3	2.8	2.5	2.0
			350	0.29	21	14.2	10.7	8.5	7.1	6.1	5.3	4.3	14.1	9.4	7.0	5.6	4.7	4.0	3.5	2.8	10.7	7.1	5.3	4.3	3.6	3.0	2.7	2.1

* Droplet size refers to ASAE S-572 @40 PSI

chart continued on next page

Banding and Directed Applications Chart - Hollow cone

Continued

Hollow Cone Spray Tips		Droplet Size @40 PSI*
PSI Range	Tip and Strainer	
40-150	30HCX6 Orange	F
40-350	HCA-015 Red (50 M Strainer)	VF
40-150	30HCX8 Gray	F
40-350	HCA-02 Gray (50 M Strainer)	F
40-150	30HCX9 Green	F
40-350	ATR-Yellow (50 M Strainer)	F
40-150	30HCX10 Black	F
40-350	HCA-025 Black (50 M Strainer)	F
40-350	ATR-Orange (50 M Strainer)	F
40 -150	30HCX12 Yellow	F
40-350	HCA-03-Brown (50 M Strainer)	F

		Gallons per Acre 20 inch spacing								Gallons per Acre 30 inch spacing								Gallons per Acre 40 inch spacing							
		MPH								MPH								MPH							
PSI	GPM	4	6	8	10	12	14	16	20	4	6	8	10	12	14	16	20	4	6	8	10	12	14	16	20
40	0.10	7.5	5.0	3.8	3.0	2.5	2.2	1.9	1.5	5.0	3.3	2.5	2.0	1.7	1.4	1.2	1.0	3.8	2.5	1.9	1.5	1.3	1.1	0.9	0.8
60	0.12	9.2	6.2	4.6	3.7	3.1	2.6	2.3	1.8	6.1	4.1	3.0	2.4	2.0	1.7	1.5	1.2	4.6	3.1	2.3	1.8	1.5	1.3	1.2	0.9
80	0.14	10.7	7.1	5.3	4.3	3.6	3.0	2.7	2.1	7.0	4.7	3.5	2.8	2.3	2.0	1.8	1.4	5.3	3.6	2.7	2.1	1.8	1.5	1.3	1.1
100	0.16	11.9	7.9	6.0	4.8	4.0	3.4	3.0	2.4	7.9	5.2	3.9	3.1	2.6	2.2	2.0	1.6	6.0	4.0	3.0	2.4	2.0	1.7	1.5	1.2
125	0.18	13.3	8.9	6.7	5.3	4.4	3.8	3.3	2.7	8.8	5.9	4.4	3.5	2.9	2.5	2.2	1.8	6.7	4.4	3.3	2.7	2.2	1.9	1.7	1.3
150	0.20	14.6	9.7	7.3	5.8	4.9	4.2	3.7	2.9	9.6	6.4	4.8	3.9	3.2	2.8	2.4	1.9	7.3	4.9	3.7	2.9	2.4	2.1	1.8	1.5
175	0.21	15.8	10.5	7.9	6.3	5.3	4.5	3.9	3.2	10.4	6.9	5.2	4.2	3.5	3.0	2.6	2.1	7.9	5.3	3.9	3.2	2.6	2.3	2.0	1.6
200	0.23	16.9	11.2	8.4	6.7	5.6	4.8	4.2	3.4	11.1	7.4	5.6	4.5	3.7	3.2	2.8	2.2	8.4	5.6	4.2	3.4	2.8	2.4	2.1	1.7
250	0.25	18.9	12.6	9.4	7.5	6.3	5.4	4.7	3.8	12.4	8.3	6.2	5.0	4.1	3.6	3.1	2.5	9.4	6.3	4.7	3.8	3.1	2.7	2.4	1.9
300	0.28	21	13.8	10.3	8.3	6.9	5.9	5.2	4.1	13.6	9.1	6.8	5.5	4.5	3.9	3.4	2.7	10.3	6.9	5.2	4.1	3.4	3.0	2.6	2.1
350	0.30	22	14.9	11.2	8.9	7.4	6.4	5.6	4.5	14.7	9.8	7.4	5.9	4.9	4.2	3.7	2.9	11.2	7.4	5.6	4.5	3.7	3.2	2.8	2.2
40	0.13	9.9	6.6	4.9	3.9	3.3	2.8	2.5	2.0	6.5	4.3	3.3	2.6	2.2	1.9	1.6	1.3	4.9	3.3	2.5	2.0	1.6	1.4	1.2	1.0
60	0.16	12.1	8.1	6.0	4.8	4.0	3.5	3.0	2.4	8.0	5.3	4.0	3.2	2.7	2.3	2.0	1.6	6.0	4.0	3.0	2.4	2.0	1.7	1.5	1.2
80	0.19	13.9	9.3	7.0	5.6	4.6	4.0	3.5	2.8	9.2	6.1	4.6	3.7	3.1	2.6	2.3	1.8	7.0	4.6	3.5	2.8	2.3	2.0	1.7	1.4
100	0.21	15.6	10.4	7.8	6.2	5.2	4.5	3.9	3.1	10.3	6.9	5.1	4.1	3.4	2.9	2.6	2.1	7.8	5.2	3.9	3.1	2.6	2.2	1.9	1.6
125	0.23	17.4	11.6	8.7	7.0	5.8	5.0	4.4	3.5	11.5	7.7	5.8	4.6	3.8	3.3	2.9	2.3	8.7	5.8	4.4	3.5	2.9	2.5	2.2	1.7
150	0.26	19.1	12.7	9.5	7.6	6.4	5.5	4.8	3.8	12.6	8.4	6.3	5.0	4.2	3.6	3.2	2.5	9.5	6.4	4.8	3.8	3.2	2.7	2.4	1.9
175	0.28	21	13.8	10.3	8.3	6.9	5.9	5.2	4.1	13.6	9.1	6.8	5.4	4.5	3.9	3.4	2.7	10.3	6.9	5.2	4.1	3.4	2.9	2.6	2.1
200	0.30	22	14.7	11.0	8.8	7.4	6.3	5.5	4.4	14.6	9.7	7.3	5.8	4.9	4.2	3.6	2.9	11.0	7.4	5.5	4.4	3.7	3.2	2.8	2.2
250	0.33	25	16.4	12.3	9.9	8.2	7.0	6.2	4.9	16.3	10.8	8.1	6.5	5.4	4.6	4.1	3.3	12.3	8.2	6.2	4.9	4.1	3.5	3.1	2.5
300	0.36	27	18.0	13.5	10.8	9.0	7.7	6.8	5.4	17.8	11.9	8.9	7.1	5.9	5.1	4.5	3.6	13.5	9.0	6.8	5.4	4.5	3.9	3.4	2.7
350	0.39	29	19.4	14.6	11.7	9.7	8.3	7.3	5.8	19.3	12.8	9.6	7.7	6.4	5.5	4.8	3.9	14.6	9.7	7.3	5.8	4.9	4.2	3.6	2.9
40	0.15	11.0	7.3	5.5	4.4	3.7	3.1	2.8	2.2	7.3	4.8	3.6	2.9	2.4	2.1	1.8	1.5	5.5	3.7	2.8	2.2	1.8	1.6	1.4	1.1
60	0.18	13.5	9.0	6.7	5.4	4.5	3.9	3.4	2.7	8.9	5.9	4.5	3.6	3.0	2.5	2.2	1.8	6.7	4.5	3.4	2.7	2.2	1.9	1.7	1.3
80	0.21	15.6	10.4	7.8	6.2	5.2	4.5	3.9	3.1	10.3	6.9	5.1	4.1	3.4	2.9	2.6	2.1	7.8	5.2	3.9	3.1	2.6	2.2	1.9	1.6
100	0.23	17.4	11.6	8.7	7.0	5.8	5.0	4.4	3.5	11.5	7.7	5.8	4.6	3.8	3.3	2.9	2.3	8.7	5.8	4.4	3.5	2.9	2.5	2.2	1.7
125	0.26	19.5	13.0	9.7	7.8	6.5	5.6	4.9	3.9	12.9	8.6	6.4	5.1	4.3	3.7	3.2	2.6	9.7	6.5	4.9	3.9	3.2	2.8	2.4	1.9
150	0.29	21	14.2	10.7	8.5	7.1	6.1	5.3	4.3	14.1	9.4	7.0	5.6	4.7	4.0	3.5	2.8	10.7	7.1	5.3	4.3	3.6	3.0	2.7	2.1
175	0.31	23	15.4	11.5	9.2	7.7	6.6	5.8	4.6	15.2	10.1	7.6	6.1	5.1	4.3	3.8	3.0	11.5	7.7	5.8	4.6	3.8	3.3	2.9	2.3
200	0.33	25	16.4	12.3	9.9	8.2	7.0	6.2	4.9	16.3	10.8	8.1	6.5	5.4	4.6	4.1	3.3	12.3	8.2	6.2	4.9	4.1	3.5	3.1	2.5
250	0.37	28	18.4	13.8	11.0	9.2	7.9	6.9	5.5	18.2	12.1	9.1	7.3	6.1	5.2	4.5	3.6	13.8	9.2	6.9	5.5	4.6	3.9	3.4	2.8
300	0.41	30	20	15.1	12.1	10.1	8.6	7.5	6.0	19.9	13.3	10.0	8.0	6.6	5.7	5.0	4.0	15.1	10.1	7.5	6.0	5.0	4.3	3.8	3.0
350	0.44	33	22	16.3	13.0	10.9	9.3	8.2	6.5	22	14.3	10.8	8.6	7.2	6.1	5.4	4.3	16.3	10.9	8.2	6.5	5.4	4.7	4.1	3.3
40	0.16	12.2	8.1	6.1	4.9	4.1	3.5	3.0	2.4	8.0	5.4	4.0	3.2	2.7	2.3	2.0	1.6	6.1	4.1	3.0	2.4	2.0	1.7	1.5	1.2
60	0.20	14.9	9.9	7.5	6.0	5.0	4.3	3.7	3.0	9.8	6.6	4.9	3.9	3.3	2.8	2.5	2.0	7.5	5.0	3.7	3.0	2.5	2.1	1.9	1.5
80	0.23	17.2	11.5	8.6	6.9	5.7	4.9	4.3	3.4	11.4	7.6	5.7	4.5	3.8	3.2	2.8	2.3	8.6	5.7	4.3	3.4	2.9	2.5	2.2	1.
100	0.26	19.3	12.8	9.6	7.7	6.4	5.5	4.8	3.9	12.7	8.5	6.4	5.1	4.2	3.6	3.2	2.5	9.6	6.4	4.8	3.9	3.2	2.8	2.4	1.9
125	0.29	22	14.4	10.8	8.6	7.2	6.2	5.4	4.3	14.2	9.5	7.1	5.7	4.7	4.1	3.6	2.8	10.8	7.2	5.4	4.3	3.6	3.1	2.7	2.2
150	0.32	24	15.7	11.8	9.4	7.9	6.7	5.9	4.7	15.6	10.4	7.8	6.2	5.2	4.4	3.9	3.1	11.8	7.9	5.9	4.7	3.9	3.4	2.9	2.4
175	0.34	25	17.0	12.7	10.2	8.5	7.3	6.4	5.1	16.8	11.2	8.4	6.7	5.6	4.8	4.2	3.4	12.7	8.5	6.4	5.1	4.2	3.6	3.2	2.5
200	0.37	27	18.2	13.6	10.9	9.1	7.8	6.8	5.4	18.0	12.0	9.0	7.2	6.0	5.1	4.5	3.6	13.6	9.1	6.8	5.4	4.5	3.9	3.4	2.7
250	0.41	30	20	15.2	12.2	10.2	8.7	7.6	6.1	20	13.4	10.0	8.0	6.7	5.7	5.0	4.0	15.2	10.2	7.6	6.1	5.1	4.4	3.8	3.0
300	0.45	33	22	16.7	13.3	11.1	9.5	8.3	6.7	22	14.7	11.0	8.8	7.3	6.3	5.5	4.4	16.7	11.1	8.3	6.7	5.6	4.8	4.2	3.3
350	0.49	36	24	18.0	14.4	12.0	10.3	9.0	7.2	24	15.9	11.9	9.5	7.9	6.8	5.9	4.8	18.0	12.0	9.0	7.2	6.0	5.1	4.5	3.6
40	0.20	14.7	9.8	7.4	5.9	4.9	4.2	3.7	2.9	9.7	6.5	4.9	3.9	3.2	2.8	2.4	1.9	7.4	4.9	3.7	2.9	2.5	2.1	1.8	1.5
60	0.24	18.0	12.0	9.0	7.2	6.0	5.1	4.5	3.6	11.9	7.9	5.9	4.8	4.0	3.4	3.0	2.4	9.0	6.0	4.5	3.6	3.0	2.6	2.3	1.8
80	0.28	21	13.9	10.4	8.3	6.9	5.9	5.2	4.2	13.7	9.1	6.9	5.5	4.6	3.9	3.4	2.7	10.4	6.9	5.2	4.2	3.5	3.0	2.6	2.1
100	0.31	23	15.5	11.6	9.3	7.7	6.6	5.8	4.6	15.3	10.2	7.7	6.1	5.1	4.4	3.8	3.1	11.6	7.7	5.8	4.6	3.9	3.3	2.9	2.3
125	0.35	26	17.3	13.0	10.4	8.7	7.4	6.5	5.2	17.2	11.4	8.6	6.9	5.7	4.9	4.3	3.4	13.0	8.7	6.5	5.2	4.3	3.7	3.2	2.6
150	0.38	28	19.0	14.2	11.4	9.5	8.1	7.1	5.7	18.8	12.5	9.4	7.5	6.3	5.4	4.7	3.8	14.2	9.5	7.1	5.7	4.7	4.1	3.6	2.8
175	0.41	31	21	15.4	12.3	10.3	8.8	7.7	6.2	20	13.5	10.1	8.1	6.8	5.8	5.1	4.1	15.4	10.3	7.7	6.2	5.1	4.4	3.8	3.1
200	0.44	33	22	16.4	13.1	11.0	9.4	8.2	6.6	22	14.5	10.8	8.7	7.2	6.2	5.4	4.3	16.4	11.0	8.2	6.6	5.5	4.7	4.1	3.3
250	0.50	37	25	18.4	14.7	12.3	10.5	9.2	7.4	24	16.2	12.1	9.7	8.1	6.9	6.1	4.9	18.4	12.3	9.2	7.4	6.1	5.3	4.6	3.7
300	0.54	40	27	20	16.1	13.4	11.5	10.1	8.1	27	17.7	13.3	10.6	8.9	7.6	6.6	5.3	20	13.4	10.1	8.1	6.7	5.8	5.0	4.0
350	0.59	43	29	22	17.4	14.5	12.4	10.9	8.7	29	19.1	14.4	11.5	9.6	8.2	7.2	5.7	22	14.5	10.9	8.7	7.2	6.2	5.4	4.3
40	0.20	15.1	10.1	7.5	6.0	5.0	4.3	3.8	3.0	10.0	6.6	5.0	4.0	3.3	2.8	2.5	2.0	7.5	5.0	3.8	3.0	2.5	2.2	1.9	1.5
60	0.25	18.5	12.3	9.2	7.4	6.2	5.3	4.6	3.7	12.2	8.1	6.1	4.9	4.1	3.5	3.0	2.4	9.2	6.2	4.6	3.7	3.1	2.6	2.3	1.8
80	0.29	21	14.2	10.7	8.5	7.1	6.1	5.3	4.3	14.1	9.4	7.0	5.6	4.7	4.0	3.5	2.8	10.7	7.1	5.3	4.3	3.6	3.0	2.7	2.1
100	0.32	24	15.9	11.9	9.5	7.9	6.8	6.0	4.8	15.7	10.5	7.9	6.3	5.2	4.5	3.9	3.1	11.9	7.9	6.0	4.8	4.0	3.4	3.0	2.4
125	0.36	27	17.8	13.3	10.7	8.9	7.6	6.7	5.3	17.6	11.7	8.8	7.0	5.9	5.0	4.4	3.5	13.3	8.9	6.7	5.3	4.4	3.8	3.3	2.7
150	0.39	29	19.5	14.6	11.7	9.7	8.3	7.3	5.8	19.3	12.9	9.6	7.7	6.4	5.5	4.8	3.9	14.6	9.7	7.3	5.8	4.9	4.2	3.7	2.9
175	0.42	32	21	15.8	12.6	10.5	9.0	7.9	6.3	21	13.9	10.4	8.3	6.9	5.9	5.2	4.2	15.8	10.5	7.9	6.3	5.3	4.5	3.9	3.2
200	0.45	34	22	16.9	13.5	11.2	9.6	8.4	6.7	22	14.8	11.1	8.9	7.4	6.4	5.6	4.5	16.9	11.2	8.4	6.7	5.6	4.8	4.2	3.4
250	0.51	38	25	18.9	15.1	12.6	10.8	9.4	7.5	25	16.6	12.4	10.0	8.3	7.1	6.2	5.0	18.9	12.6	9.4	7.5	6.3	5.4	4.7	3.8
300	0.56	41	28	21	16.5	13.8	11.8	10.3	8.3	27	18.2	13.6	10.9	9.1	7.8	6.8	5.5	21	13.8	10.3	8.3	6.9	5.9	5.2	4.1
350	0.60	45	30	22	17.8	14.9	12.7	11.2	8.9	29	19.6	14.7	11.8	9.8	8.4	7.4	5.9	22	14.9	11.2	8.9	7.4	6.4	5.6	4.5

* Droplet size refers to ASAE S-572 @40 PSI

chart continued on next page

Banding and Directed Applications Chart - Hollow cone

Continued

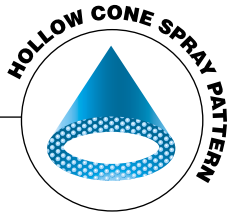
Hollow Cone Spray Tips		Droplet Size @40 PSI*
PSI Range	Tip and Strainer	
40-350	ATR-Red (50 M Strainer)	F
40-150	30HCX18 Tan	F
40-350	HCA-045 Orange (50 M Strainer)	F
40-350	ATR-Green (50 M Strainer)	F
40-350	ATR-Blue (50 M Strainer)	M

		Gallons per Acre 20 inch spacing								Gallons per Acre 30 inch spacing								Gallons per Acre 40 inch spacing							
		MPH								MPH								MPH							
PSI	GPM	4	6	8	10	12	14	16	20	4	6	8	10	12	14	16	20	4	6	8	10	12	14	16	20
40	0.28	21	13.8	10.3	8.3	6.9	5.9	5.2	4.1	13.6	9.1	6.8	5.4	4.5	3.9	3.4	2.7	10.3	6.9	5.2	4.1	3.4	2.9	2.6	2.1
60	0.34	25	16.9	12.6	10.1	8.4	7.2	6.3	5.1	16.7	11.1	8.3	6.7	5.6	4.8	4.2	3.3	12.6	8.4	6.3	5.1	4.2	3.6	3.2	2.5
80	0.39	29	19.5	14.6	11.7	9.7	8.3	7.3	5.8	19.3	12.8	9.6	7.7	6.4	5.5	4.8	3.9	14.6	9.7	7.3	5.8	4.9	4.2	3.6	2.9
100	0.44	33	22	16.3	13.1	10.9	9.3	8.2	6.5	22	14.4	10.8	8.6	7.2	6.2	5.4	4.3	16.3	10.9	8.2	6.5	5.4	4.7	4.1	3.3
125	0.49	36	24	18.2	14.6	12.2	10.4	9.1	7.3	24	16.1	12.0	9.6	8.0	6.9	6.0	4.8	18.2	12.2	9.1	7.3	6.1	5.2	4.6	3.6
150	0.54	40	27	20	16.0	13.3	11.4	10.0	8.0	26	17.6	13.2	10.6	8.8	7.5	6.6	5.3	20	13.3	10.0	8.0	6.7	5.7	5.0	4.0
175	0.58	43	29	22	17.3	14.4	12.3	10.8	8.6	28	19.0	14.2	11.4	9.5	8.1	7.1	5.7	22	14.4	10.8	8.6	7.2	6.2	5.4	4.3
200	0.62	46	31	23	18.5	15.4	13.2	11.5	9.2	30	20	15.2	12.2	10.2	8.7	7.6	6.1	23	15.4	11.5	9.2	7.7	6.6	5.8	4.6
250	0.70	52	34	26	21	17.2	14.7	12.9	10.3	34	23	17.0	13.6	11.4	9.7	8.5	6.8	26	17.2	12.9	10.3	8.6	7.4	6.5	5.2
300	0.76	57	38	28	23	18.8	16.2	14.1	11.3	37	25	18.7	14.9	12.4	10.7	9.3	7.5	28	18.8	14.1	11.3	9.4	8.1	7.1	5.7
350	0.82	61	41	31	24	20	17.4	15.3	12.2	40	27	20	16.1	13.4	11.5	10.1	8.1	31	20	15.3	12.2	10.2	8.7	7.6	6.1
40	0.30	22	14.9	11.2	8.9	7.4	6.4	5.6	4.5	14.8	9.8	7.4	5.9	4.9	4.2	3.7	3.0	11.2	7.4	5.6	4.5	3.7	3.2	2.8	2.2
60	0.37	27	18.2	13.7	10.9	9.1	7.8	6.8	5.5	18.1	12.0	9.0	7.2	6.0	5.2	4.5	3.6	13.7	9.1	6.8	5.5	4.6	3.9	3.4	2.7
80	0.43	32	21	15.8	12.6	10.5	9.0	7.9	6.3	21	13.9	10.4	8.3	7.0	6.0	5.2	4.2	15.8	10.5	7.9	6.3	5.3	4.5	4.0	3.2
100	0.48	35	24	17.7	14.1	11.8	10.1	8.8	7.1	23	15.5	11.7	9.3	7.8	6.7	5.8	4.7	17.7	11.8	8.8	7.1	5.9	5.0	4.4	3.5
125	0.53	40	26	20	15.8	13.2	11.3	9.9	7.9	26	17.4	13.0	10.4	8.7	7.5	6.5	5.2	19.8	13.2	9.9	7.9	6.6	5.6	4.9	4.0
150	0.58	43	29	22	17.3	14.4	12.4	10.8	8.7	29	19.0	14.3	11.4	9.5	8.2	7.1	5.7	21.6	14.4	10.8	8.7	7.2	6.2	5.4	4.3
175	0.63	47	31	23	18.7	15.6	13.4	11.7	9.3	31	21	15.4	12.3	10.3	8.8	7.7	6.2	23.4	15.6	11.7	9.3	7.8	6.7	5.8	4.7
200	0.67	50	33	25	20	16.7	14.3	12.5	10.0	33	22	16.5	13.2	11.0	9.4	8.2	6.6	25.0	16.7	12.5	10.0	8.3	7.1	6.2	5.0
250	0.75	56	37	28	22	18.6	16.0	14.0	11.2	37	25	18.4	14.8	12.3	10.5	9.2	7.4	27.9	18.6	14.0	11.2	9.3	8.0	7.0	5.6
300	0.82	61	41	31	24	20	17.5	15.3	12.2	40	27	20	16.2	13.5	11.5	10.1	8.1	30.6	20	15.3	12.2	10.2	8.7	7.7	6.1
350	0.89	66	44	33	26	22	18.9	16.5	13.2	44	29	22	17.5	14.5	12.5	10.9	8.7	33.1	22	16.5	13.2	11.0	9.4	8.3	6.6
40	0.36	27	17.7	13.3	10.6	8.9	7.6	6.6	5.3	17.5	11.7	8.8	7.0	5.8	5.0	4.4	3.5	13.3	8.9	6.6	5.3	4.4	3.8	3.3	2.7
60	0.44	33	22	16.3	13.0	10.9	9.3	8.1	6.5	21	14.3	10.7	8.6	7.2	6.1	5.4	4.3	16.3	10.9	8.1	6.5	5.4	4.7	4.1	3.3
80	0.51	38	25	18.8	15.0	12.5	10.7	9.4	7.5	25	16.5	12.4	9.9	8.3	7.1	6.2	5.0	18.8	12.5	9.4	7.5	6.3	5.4	4.7	3.8
100	0.57	42	28	21	16.8	14.0	12.0	10.5	8.4	28	18.5	13.9	11.1	9.2	7.9	6.9	5.5	21	14.0	10.5	8.4	7.0	6.0	5.3	4.2
125	0.63	47	31	23	18.8	15.7	13.4	11.7	9.4	31	21	15.5	12.4	10.3	8.9	7.8	6.2	23	15.7	11.7	9.4	7.8	6.7	5.9	4.7
150	0.69	51	34	26	21	17.2	14.7	12.9	10.3	34	23	17.0	13.6	11.3	9.7	8.5	6.8	26	17.2	12.9	10.3	8.6	7.4	6.4	5.1
175	0.75	56	37	28	22	18.5	15.9	13.9	11.1	37	24	18.3	14.7	12.2	10.5	9.2	7.3	28	18.5	13.9	11.1	9.3	7.9	6.9	5.6
200	0.80	59	40	30	24	20	17.0	14.9	11.9	39	26	19.6	15.7	13.1	11.2	9.8	7.8	30	19.8	14.9	11.9	9.9	8.5	7.4	5.9
250	0.90	66	44	33	27	22	19.0	16.6	13.3	44	29	22	17.5	14.6	12.5	11.0	8.8	33	22	16.6	13.3	11.1	9.5	8.3	6.6
300	0.98	73	49	36	29	24	21	18.2	14.6	48	32	24	19.2	16.0	13.7	12.0	9.6	36	24	18.2	14.6	12.1	10.4	9.1	7.3
350	1.06	79	52	39	31	26	22	20	15.7	52	35	26	21	17.3	14.8	13.0	10.4	39	26	19.7	15.7	13.1	11.2	9.8	7.9
40	0.49	37	24	18.3	14.6	12.2	10.4	9.1	7.3	24	16.1	12.1	9.6	8.0	6.9	6.0	4.8	18.3	12.2	9.1	7.3	6.1	5.2	4.6	3.7
60	0.60	45	30	22	17.9	14.9	12.8	11.2	8.9	30	19.7	14.8	11.8	9.8	8.4	7.4	5.9	22	14.9	11.2	8.9	7.5	6.4	5.6	4.5
80	0.70	52	34	26	21	17.2	14.8	12.9	10.3	34	23	17.0	13.6	11.4	9.7	8.5	6.8	26	17.2	12.9	10.3	8.6	7.4	6.5	5.2
100	0.78	58	39	29	23	19.3	16.5	14.4	11.6	38	25	19.1	15.2	12.7	10.9	9.5	7.6	29	19.3	14.4	11.6	9.6	8.3	7.2	5.8
125	0.87	65	43	32	26	22	18.5	16.1	12.9	43	28	21	17.0	14.2	12.2	10.7	8.5	32	22	16.1	12.9	10.8	9.2	8.1	6.5
150	0.95	71	47	35	28	24	20	17.7	14.1	47	31	23	18.7	15.6	13.3	11.7	9.3	35	24	17.7	14.1	11.8	10.1	8.8	7.1
175	1.03	76	51	38	31	25	22	19.1	15.3	50	34	25	20	16.8	14.4	12.6	10.1	38	25	19.1	15.3	12.7	10.9	9.6	7.6
200	1.10	82	54	41	33	27	23	20	16.3	54	36	27	22	18.0	15.4	13.5	10.8	41	27	20	16.3	13.6	11.7	10.2	8.2
250	1.23	91	61	46	37	30	26	23	18.3	60	40	30	24	20	17.2	15.1	12.1	46	30	23	18.3	15.2	13.0	11.4	9.1
300	1.35	100	67	50	40	33	29	25	20	66	44	33	26	22	18.9	16.5	13.2	50	33	25	20	16.7	14.3	12.5	10.0
350	1.46	108	72	54	43	36	31	27	22	71	48	36	29	24	20	17.8	14.3	54	36	27	22	18.0	15.4	13.5	10.8

* Droplet size refers to ASAE S-572 @40 PSI

Note: See formula and conversion tables for banding applications.

BANDING AND DIRECTED SPRAY TIPS

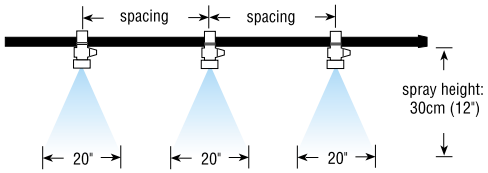


HCX – Hollow Cone Tip

Hollow Tip (HCX) – The Hypro hollow-cone spray tips produce finely atomized droplets in a hollow-cone, 80-degree pattern. Precision molded in Polyacetal (Hostaform®).

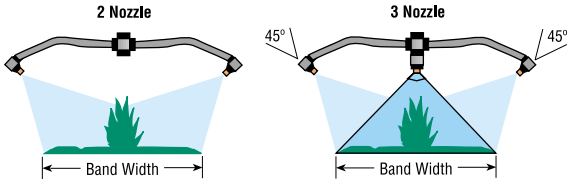
HCX 80° - Hollow Cone

	40 PSI	50 PSI	60 PSI	70 PSI	80 PSI	90 PSI	100 PSI	125 PSI	150 PSI
30HCX2	VF	VF	VF	VF	VF	VF	VF	VF	VF
30HCX3	VF	VF	VF	VF	VF	VF	VF	VF	VF
30HCX4	F	F	VF	VF	VF	VF	VF	VF	VF
30HCX6	F	F	VF	VF	VF	VF	VF	VF	VF
30HCX8	F	F	F	VF	VF	VF	VF	VF	VF
30HCX9	F	F	F	F	F	VF	VF	VF	VF
30HCX10	F	F	F	F	F	F	VF	VF	VF
30HCX12	F	F	F	F	F	F	F	VF	VF
30HCX18	F	F	F	F	F	F	F	F	VF



* Use chart to determine height from target to provide desired band width.

ATR *HCA*



HCA, ATR 80° - Hollow Cone

	40 PSI	50 PSI	60 PSI	70 PSI	80 PSI	90 PSI	100 PSI	125 PSI	150 PSI	350 PSI
ATR-White	VF	VF	VF	VF	VF	VF	VF	VF	VF	VF
HCA-01	VF	VF	VF	VF	VF	VF	VF	VF	VF	VF
ATR-Lilac	VF	VF	VF	VF	VF	VF	VF	VF	VF	VF
HCA-015	VF	VF	VF	VF	VF	VF	VF	VF	VF	VF
ATR-Brown	VF	VF	VF	VF	VF	VF	VF	VF	VF	VF
HCA-02	F	F	VF	VF	VF	VF	VF	VF	VF	VF
ATR-Yellow	F	F	VF	VF	VF	VF	VF	VF	VF	VF
HCA-025	F	F	F	VF	VF	VF	VF	VF	VF	VF
ATR-Orange	F	F	F	F	VF	VF	VF	VF	VF	VF
HCA-03	F	F	F	F	F	VF	VF	VF	VF	VF
ATR-Red	F	F	F	F	F	F	VF	VF	VF	VF
ATR-Gray	M	F	F	F	F	F	F	VF	VF	VF
ATR-Green	M	M	F	F	F	F	F	F	VF	VF
ATR-Black	M	M	M	F	F	F	F	F	F	VF
ATR-Blue	M	M	M	M	F	F	F	F	F	F

ATR – Hollow-Cone Ceramic Tip and

HCA – Hollow-Cone Ceramic Tip

Hollow-Cone Tip (HCA) and Hollow-Cone Tip (ATR) - The Albuz hollow-cone ceramic spray tips produce finely atomized droplets in a hollow cone, 80-degree pattern. Easily separated, two-piece construction for simple cleaning.

How to Use Hollow Tip Cross Reference Chart

To Replace Disc Core Spray Tips with Hollow Cone Spray Tips

On either side of each disc core listed, you will find a hollow cone that will match the flow rate. Above the disc core, you will find the same or a lower flow rate. Below the disc core, you will find the same or higher flow rate.

HCX	ATR/HCA	AMTP	Disc	Core	Color	US GALS MIN									
						psi 10	psi 20	psi 30	psi 40	psi 60	psi 80	psi 100	psi 150	psi 200	psi 300
30HCX2					White	0.017	0.024	0.029	0.033	0.041	0.047	0.053	0.064		
30HCX3					Pink	0.025	0.035	0.043	0.050	0.061	0.071	0.079	0.10		
	ATR				White	0.028	0.039	0.048	0.055	0.067	0.078	0.09	0.11	0.12	0.15
	HCA-1				Green	0.033	0.047	0.057	0.066	0.08	0.09	0.10	0.13		
30HCX4					Light Blue	0.033	0.047	0.058	0.067	0.08	0.09	0.11	0.13		
		AMTP 208			Pink	0.035	0.049	0.061	0.070	0.09	0.10	0.11	0.14	0.16	0.19
	ATR-Lilac				Lilac	0.036	0.051	0.062	0.072	0.09	0.10	0.11	0.14	0.16	0.20
			30-DC-01	30-CR-23	Gray/Light Blue	0.036	0.051	0.062	0.072	0.09	0.10	0.11	0.14		
			30-DC-1.5	30-CR-23	Black/Light Blue	0.043	0.061	0.074	0.09	0.11	0.12	0.14	0.17		
		AMTP 210			Pink	0.048	0.068	0.08	0.10	0.12	0.14	0.15	0.19	0.22	0.26
30HCX6					Orange	0.050	0.071	0.09	0.10	0.12	0.14	0.16	0.19		
	HCA-015				Red	0.050	0.071	0.09	0.10	0.12	0.14	0.16	0.20	0.23	0.28
			30-DC-02	30-CR-23	Brown / Light Blue	0.051	0.072	0.09	0.10	0.12	0.14	0.16	0.20		
	ATR				Brown	0.051	0.072	0.09	0.10	0.12	0.14	0.16	0.20	0.23	0.28

Hollow Cone Replacements for 30-DC-02 30-CR-23 are 30HCX6 or ATR-Brown or HCA-015

Disc Number: 30-DC-02

Core Number: 30-CR-23

Disc Color: Brown

Core Color: Light Blue

Flow Rates

Hollow Cone Tip Cross Reference Chart to Disc Core

HCX, ATR, HCA, AMTP, DISC and CORE

HCX	ATR/HCA	AMTP	Disc	Core	Color	US GALS MIN									
						psi 10	psi 20	psi 30	psi 40	psi 60	psi 80	psi 100	psi 150	psi 200	psi 300
30HCX2					White	0.017	0.024	0.029	0.033	0.041	0.047	0.053	0.064		
30HCX3					Pink	0.025	0.035	0.043	0.050	0.061	0.071	0.079	0.10		
	ATR-White				White	0.028	0.039	0.048	0.055	0.067	0.078	0.09	0.11	0.12	0.15
	HCA-1				Green	0.033	0.047	0.057	0.066	0.08	0.09	0.10	0.13		
30HCX4					Light Blue	0.033	0.047	0.058	0.067	0.08	0.09	0.11	0.13		
		AMTP-208			Pink	0.035	0.049	0.061	0.070	0.09	0.10	0.11	0.14	0.16	0.19
	ATR-Lilac				Lilac	0.036	0.051	0.062	0.072	0.09	0.10	0.11	0.14	0.16	0.20
			30-DC-01	30-CR-23	Gray/Light Blue	0.036	0.051	0.062	0.072	0.09	0.10	0.11	0.14		
			30-DC-1.5	30-CR-23	Black/Light Blue	0.043	0.061	0.074	0.09	0.11	0.12	0.14	0.17		
		AMTP-210			Pink	0.048	0.068	0.08	0.10	0.12	0.14	0.15	0.19	0.22	0.26
30HCX6					Orange	0.050	0.071	0.09	0.10	0.12	0.14	0.16	0.19		
	HCA-015				Red	0.050	0.071	0.09	0.10	0.12	0.14	0.16	0.20	0.23	0.28
			30-DC-02	30-CR-23	Brown/Light Blue	0.051	0.072	0.09	0.10	0.12	0.14	0.16	0.20		
	ATR-Brown				Brown	0.051	0.072	0.09	0.10	0.12	0.14	0.16	0.20	0.23	0.28
			30-DC-03	30-CR-23	Orange/Light Blue	0.065	0.09	0.11	0.13	0.16	0.18	0.21	0.25		
	HCA-02				Gray	0.066	0.09	0.11	0.13	0.16	0.19	0.21	0.26	0.30	0.36
30HCX8					Gray	0.067	0.09	0.12	0.13	0.16	0.19	0.21	0.26		
		AMTP-212			Pink	0.073	0.10	0.13	0.15	0.18	0.21	0.23	0.28	0.33	0.40
			30-DC-04	30-CR-23	Red/Light Blue	0.074	0.10	0.13	0.15	0.18	0.21	0.23	0.29		
30HCX9					Green	0.075	0.11	0.13	0.15	0.18	0.21	0.24	0.29		
	ATR-Yellow				Yellow	0.075	0.11	0.13	0.15	0.18	0.21	0.24	0.29	0.34	0.41
	HCA-025				Black	0.08	0.12	0.14	0.16	0.20	0.23	0.26	0.32		
30HCX10					Black	0.08	0.12	0.14	0.17	0.20	0.24	0.26	0.32	0.37	0.46
			30-DC-05	30-CR-23	Blue/Light Blue	0.09	0.13	0.16	0.18	0.22	0.25	0.28	0.35		
		AMTP-215			Pink	0.10	0.14	0.17	0.20	0.24	0.28	0.31	0.38	0.44	0.54
	ATR-Orange				Orange	0.10	0.14	0.17	0.20	0.24	0.28	0.31	0.38	0.44	0.54
30HCX12					Yellow	0.10	0.14	0.17	0.20	0.24	0.28	0.32	0.39		
	HCA-03				Brown	0.10	0.14	0.17	0.20	0.25	0.29	0.32	0.39	0.45	0.55
			30-DC-06	30-CR-23	Yellow/Light Blue	0.11	0.15	0.18	0.21	0.26	0.30	0.33	0.41		
		AMTP-210			Pink	0.048	0.068	0.08	0.10	0.12	0.14	0.15	0.19	0.22	0.26
30HCX6					Orange	0.050	0.071	0.09	0.10	0.12	0.14	0.16	0.19		
	HCA-015				Red	0.050	0.071	0.09	0.10	0.12	0.14	0.16	0.20	0.23	0.28
			30-DC-01	30-CR-25	Gray/Yellow	0.051	0.072	0.09	0.10	0.12	0.14	0.16	0.20		
	ATR-Brown				Brown	0.051	0.072	0.09	0.10	0.12	0.14	0.16	0.20	0.23	0.28
30HCX8					Gray	0.067	0.09	0.12	0.13	0.16	0.19	0.21	0.26		
			30-DC-1.5	30-CR-25	Black/Yellow	0.068	0.10	0.12	0.14	0.17	0.19	0.21	0.26		
		AMTP-212			Pink	0.073	0.10	0.13	0.15	0.18	0.21	0.23	0.28	0.33	0.40
30HCX9					Green	0.075	0.11	0.13	0.15	0.18	0.21	0.24	0.29		
	ATR-Yellow				Yellow	0.075	0.11	0.13	0.15	0.18	0.21	0.24	0.29	0.34	0.41
	HCA-025				Black	0.08	0.12	0.14	0.16	0.20	0.23	0.26	0.32	0.37	0.45
30HCX10					Black	0.08	0.12	0.14	0.17	0.20	0.24	0.26	0.32		
			30-DC-2	30-CR-25	Brown/Yellow	0.08	0.11	0.14	0.16	0.19	0.22	0.25	0.31		
			30-DC-3	30-CR-25	Orange/Yellow	0.10	0.13	0.16	0.19	0.23	0.27	0.30	0.37		
		AMTP-215			Pink	0.10	0.14	0.17	0.20	0.24	0.28	0.31	0.38	0.44	0.54
	ATR-Orange				Orange	0.10	0.14	0.17	0.20	0.24	0.28	0.31	0.38	0.44	0.54
30HCX12					Yellow	0.10	0.14	0.17	0.20	0.24	0.28	0.32	0.39		
	HCA-03				Brown	0.10	0.14	0.17	0.20	0.25	0.29	0.32	0.39	0.45	0.55
		AMTP-220			Pink	0.14	0.20	0.24	0.28	0.34	0.39	0.44	0.53	0.62	0.76
	ATR-Red				Red	0.14	0.20	0.24	0.28	0.34	0.39	0.44	0.54	0.62	0.76
			30-DC-04	30-CR-25	Red/Yellow	0.14	0.20	0.25	0.29	0.35	0.41	0.46	0.56		
	HCA-045				Orange	0.15	0.21	0.26	0.30	0.37	0.43	0.48	0.58	0.67	0.82
30HCX18					Tan	0.16	0.22	0.27	0.31	0.38	0.44	0.49	0.60		
			30-DC-05	30-CR-25	Blue/Yellow	0.18	0.25	0.30	0.35	0.43	0.50	0.56	0.68		
		AMTP-223			Pink	0.18	0.25	0.31	0.36	0.44	0.50	0.56	0.69	0.80	0.98
	ATR-Green				Green	0.18	0.25	0.31	0.36	0.44	0.51	0.57	0.69	0.80	0.98
			30-DC-06	30-CR-25	Yellow/Yellow	0.22	0.31	0.38	0.44	0.54	0.62	0.69	0.85		
		AMTP-230			Pink	0.25	0.35	0.43	0.49	0.60	0.69	0.78	0.95	1.10	1.34
	ATR-Blue				Blue	0.25	0.35	0.43	0.49	0.60	0.70	0.78	0.95	1.10	1.35
			30-DC-07	30-CR-25	Green/Yellow	0.26	0.36	0.45	0.52	0.63	0.73	0.82	1.00		
			30-DC -08	30-CR-25	White/Yellow	0.30	0.43	0.53	0.61	0.75	0.86	0.96	1.18		

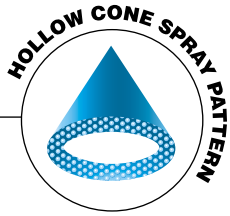
chart continued on next page

Hollow Cone Tip Cross Reference Chart to Disc Core - continued

HCX, ATR, HCA, AMTP, DISC and CORE

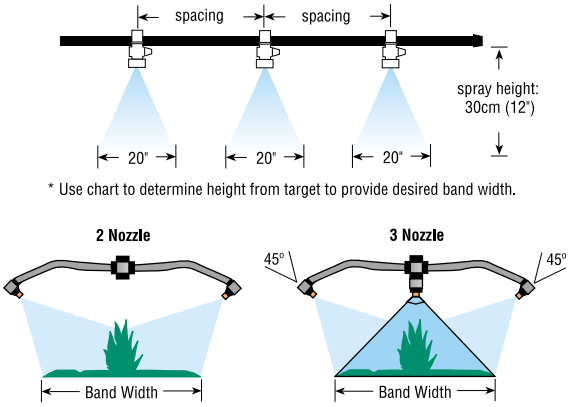
HCX	ATR/HCA	AMTP	Disc	Core	Color	US GALS MIN									
						psi 10	psi 20	psi 30	psi 40	psi 60	psi 80	psi 100	psi 150	psi 200	psi 300
			30-DC-10	30-CR-25	Lime Green/Yellow	0.38	0.54	0.66	0.76	0.93	1.07	1.20	1.47		
		AMTP-210			Pink	0.048	0.068	0.083	0.096	0.118	0.136	0.152	0.186	0.215	0.263
30HCX6					Orange	0.050	0.071	0.086	0.100	0.122	0.141	0.158	0.193		
	HCA-015				Red	0.050	0.071	0.087	0.101	0.124	0.143	0.160	0.196	0.226	0.277
	ATR-Brown				Brown	0.051	0.072	0.088	0.102	0.125	0.144	0.161	0.198	0.228	0.279
			30-DC-01	30-CR-45	Gray/Green	0.063	0.088	0.11	0.13	0.15	0.18	0.20	0.24		
30HCX8					Gray	0.067	0.09	0.12	0.13	0.16	0.19	0.21	0.26		
		AMTP-212			Pink	0.073	0.10	0.13	0.15	0.18	0.21	0.23	0.28	0.33	0.40
30HCX9					Green	0.075	0.11	0.13	0.15	0.18	0.21	0.24	0.29		
	ATR-Yellow				Yellow	0.075	0.11	0.13	0.15	0.18	0.21	0.24	0.29	0.34	0.41
			30-DC-1.5	30-CR-45	Black/Green	0.08	0.11	0.14	0.16	0.20	0.23	0.26	0.31		
	HCA-025				Black	0.08	0.12	0.14	0.16	0.20	0.23	0.26	0.32		
30HCX10					Black	0.08	0.12	0.14	0.17	0.20	0.24	0.26	0.32		
			30-DC-02	30-CR-45	Brown/Green	0.10	0.14	0.17	0.20	0.24	0.28	0.31	0.38		
		AMTP-215			Pink	0.10	0.14	0.17	0.20	0.24	0.28	0.31	0.38	0.44	0.54
	ATR-Orange				Orange	0.10	0.14	0.17	0.20	0.24	0.28	0.31	0.38	0.44	0.54
30HCX12					Yellow	0.10	0.14	0.17	0.20	0.24	0.28	0.32	0.39		
	HCA-03				Brown	0.10	0.14	0.17	0.20	0.25	0.29	0.32	0.39	0.45	0.55
			30-DC-03	30-CR-45	Orange/Green	0.12	0.17	0.21	0.24	0.29	0.34	0.38	0.47		
		AMTP-220			Pink	0.14	0.20	0.24	0.28	0.34	0.39	0.44	0.53	0.62	0.76
	ATR-Red				Red	0.14	0.20	0.24	0.28	0.34	0.39	0.44	0.54	0.62	0.76
	HCA-045				Orange	0.15	0.21	0.26	0.30	0.37	0.43	0.48	0.58	0.67	0.82
30HCX18					Tan	0.16	0.22	0.27	0.31	0.38	0.44	0.49	0.60		
		AMTP-223			Pink	0.18	0.25	0.31	0.36	0.44	0.50	0.56	0.69	0.80	0.98
	ATR-Green				Green	0.18	0.25	0.31	0.36	0.44	0.51	0.57	0.69		
			30-DC-04	30-CR-45	Red/Green	0.18	0.25	0.31	0.36	0.44	0.51	0.57	0.70		
			30-DC-05	30-CR-45	Blue/Green	0.23	0.33	0.40	0.46	0.56	0.65	0.73	0.89		
		AMTP-230			Pink	0.25	0.35	0.43	0.49	0.60	0.69	0.78	0.95	1.10	1.34
	ATR-Blue				Blue	0.25	0.35	0.43	0.49	0.60	0.70	0.78	0.95	1.10	1.35
			30-DC-06	30-CR-45	Yellow/Green	0.30	0.43	0.52	0.60	0.74	0.85	0.95	1.16		
			30-DC-07	30-CR-45	Green/Green	0.34	0.48	0.59	0.68	0.83	0.96	1.07	1.32		
			30-DC-08	30-CR-45	White/Green	0.42	0.60	0.73	0.84	1.03	1.19	1.33	1.63		

DISC-CORE TYPE SPRAY TIPS



AMTP – Ceramic Disc and Core

Ceramic Disc and Core (AMTP) - The Albuz hollow-cone ceramic disc and plastic core spray tips produce finely atomized droplets in a hollow-cone pattern.



* Use chart to determine height from target to provide desired band width.

Disc *Core*

DC CR – SwirlTip™ Disc and Core Hollow-Cone

SwirlTip™ - The Hypro disc and core hollow-cone spray tips produce finely atomized droplets in a hollow-cone pattern.

DC-CR Disc Core

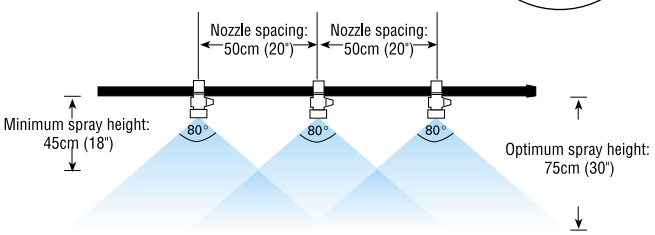
	40 PSI	50 PSI	60 PSI	70 PSI	80 PSI	90 PSI	100 PSI	125 PSI	150 PSI
30-DC-01/30-CR-23	F	F	VF	VF	VF	VF	VF	VF	VF
30-DC-02/30-CR-23	F	F	F	VF	VF	VF	VF	VF	VF
30-DC-03/30-CR-23	F	F	F	F	VF	VF	VF	VF	VF
30-DC-04/30-CR-23	F	F	F	F	F	F	VF	VF	VF
30-DC-05/30-CR-23	F	F	F	F	F	F	F	VF	VF
30-DC-06/30-CR-23	M	F	F	F	F	F	F	F	VF
30-DC-01/30-CR-25	F	F	F	VF	VF	VF	VF	VF	VF
30-DC-1.5/30-CR-25	F	F	F	F	VF	VF	VF	VF	VF
30-DC-02/30-CR-25	F	F	F	F	VF	VF	VF	VF	VF
30-DC-03/30-CR-25	F	F	F	F	F	VF	VF	VF	VF
30-DC-04/30-CR-25	M	F	F	F	F	F	VF	VF	VF
30-DC-05/30-CR-25	M	M	M	F	F	F	F	VF	VF
30-DC-06/30-CR-25	M	M	M	M	M	M	F	F	F
30-DC-07/30-CR-25	M	M	M	M	M	M	M	F	F
30-DC-08/30-CR-25	C	C	C	C	M	M	M	M	M
30-DC-10/30-CR-25	C	C	C	C	C	M	M	M	M
30-DC-01/30-CR-45	F	F	F	VF	VF	VF	VF	VF	VF
30-DC-1.5/30-CR-45	M	F	F	F	VF	VF	VF	VF	VF
30-DC-02/30-CR-45	M	M	F	F	F	VF	VF	VF	VF
30-DC-03/30-CR-45	M	M	M	F	F	F	VF	VF	VF
30-DC-04/30-CR-45	M	M	M	M	F	F	F	VF	VF
30-DC-05/30-CR-45	M	M	M	M	M	F	F	F	VF
30-DC-06/30-CR-45	C	M	M	M	M	M	M	F	F
30-DC-07/30-CR-45	C	C	M	M	M	M	M	M	F
30-DC-08/30-CR-45	C	C	C	M	M	M	M	M	M

Full Cone Spray Tips Chart

FCX Spray Tips		Gallons per Acre 20 inch spacing								Gallons per Acre 30 inch spacing								Gallons per Acre 40 inch spacing							
		MPH								MPH								MPH							
PSI Range	Tip and Strainer	PSI	GPM	4	6	8	10	12	14	16	20	4	6	8	10	12	14	16	20	4	6	8	10	12	14	16	20
10-150	30FCX02 Yellow (100 M Strainer)	15	0.20	14.9	9.9	7.5	6.0	5.0	4.3	3.7	3.0	9.8	6.6	4.9	3.9	3.3	2.8	2.5	2.0	7.5	5.0	3.7	3.0	2.5	2.1	1.9	1.5
		20	0.23	17.2	11.5	8.6	6.9	5.7	4.9	4.3	3.4	11.4	7.6	5.7	4.5	3.8	3.2	2.8	2.3	8.6	5.7	4.3	3.4	2.9	2.5	2.2	1.7
		25	0.26	19.3	12.8	9.6	7.7	6.4	5.5	4.8	3.9	12.7	8.5	6.4	5.1	4.2	3.6	3.2	2.5	9.6	6.4	4.8	3.9	3.2	2.8	2.4	1.9
		30	0.28	21.1	14.1	10.5	8.4	7.0	6.0	5.3	4.2	13.9	9.3	7.0	5.6	4.6	4.0	3.5	2.8	10.5	7.0	5.3	4.2	3.5	3.0	2.6	2.1
		35	0.31	22.8	15.2	11.4	9.1	7.6	6.5	5.7	4.6	15.0	10.0	7.5	6.0	5.0	4.3	3.8	3.0	11.4	7.6	5.7	4.6	3.8	3.3	2.8	2.3
		40	0.33	24.4	16.2	12.2	9.7	8.1	7.0	6.1	4.9	16.1	10.7	8.0	6.4	5.4	4.6	4.0	3.2	12.2	8.1	6.1	4.9	4.1	3.5	3.0	2.4
		60	0.40	29.8	19.9	14.9	11.9	9.9	8.5	7.5	6.0	19.7	13.1	9.8	7.9	6.6	5.6	4.9	3.9	14.9	9.9	7.5	6.0	5.0	4.3	3.7	3.0
		80	0.46	34.5	23.0	17.2	13.8	11.5	9.8	8.6	6.9	22.7	15.2	11.4	9.1	7.6	6.5	5.7	4.5	17.2	11.5	8.6	6.9	5.7	4.9	4.3	3.4
		100	0.52	38.5	25.7	19.3	15.4	12.8	11.0	9.6	7.7	25.4	16.9	12.7	10.2	8.5	7.3	6.4	5.1	19.3	12.8	9.6	7.7	6.4	5.5	4.8	3.9
		125	0.58	43.1	28.7	21.5	17.2	14.4	12.3	10.8	8.6	28.4	19.0	14.2	11.4	9.5	8.1	7.1	5.7	21.5	14.4	10.8	8.6	7.2	6.2	5.4	4.3
		150	0.64	47.2	31.5	23.6	18.9	15.7	13.5	11.8	9.4	31.1	20.8	15.6	12.5	10.4	8.9	7.8	6.2	23.6	15.7	11.8	9.4	7.9	6.7	5.9	4.7
10-150	30FCX03 Blue (100 M Strainer)	15	0.30	22.4	14.9	11.2	9.0	7.5	6.4	5.6	4.5	14.8	9.8	7.4	5.9	4.9	4.2	3.7	3.0	11.2	7.5	5.6	4.5	3.7	3.2	2.8	2.2
		20	0.35	25.8	17.2	12.9	10.3	8.6	7.4	6.5	5.2	17.1	11.4	8.5	6.8	5.7	4.9	4.3	3.4	12.9	8.6	6.5	5.2	4.3	3.7	3.2	2.6
		25	0.39	28.9	19.3	14.4	11.6	9.6	8.3	7.2	5.8	19.1	12.7	9.5	7.6	6.4	5.4	4.8	3.8	14.4	9.6	7.2	5.8	4.8	4.1	3.6	2.9
		30	0.43	31.6	21.1	15.8	12.7	10.5	9.0	7.9	6.3	20.9	13.9	10.4	8.4	7.0	6.0	5.2	4.2	15.8	10.5	7.9	6.3	5.3	4.5	4.0	3.2
		35	0.46	34.2	22.8	17.1	13.7	11.4	9.8	8.5	6.8	22.6	15.0	11.3	9.0	7.5	6.4	5.6	4.5	17.1	11.4	8.5	6.8	5.7	4.9	4.3	3.4
		40	0.49	36.5	24.4	18.3	14.6	12.2	10.4	9.1	7.3	24.1	16.1	12.1	9.6	8.0	6.9	6.0	4.8	18.3	12.2	9.1	7.3	6.1	5.2	4.6	3.7
		60	0.60	44.8	29.8	22.4	17.9	14.9	12.8	11.2	9.0	29.5	19.7	14.8	11.8	9.8	8.4	7.4	5.9	22.4	14.9	11.2	9.0	7.5	6.4	5.6	4.5
		80	0.70	51.7	34.5	25.8	20.7	17.2	14.8	12.9	10.3	34.1	22.7	17.1	13.6	11.4	9.7	8.5	6.8	25.8	17.2	12.9	10.3	8.6	7.4	6.5	5.2
		100	0.78	57.8	38.5	28.9	23.1	19.3	16.5	14.4	11.6	38.1	25.4	19.1	15.3	12.7	10.9	9.5	7.6	28.9	19.3	14.4	11.6	9.6	8.3	7.2	5.8
		125	0.87	64.6	43.1	32.3	25.8	21.5	18.5	16.2	12.9	42.6	28.4	21.3	17.1	14.2	12.2	10.7	8.5	32.3	21.5	16.2	12.9	10.8	9.2	8.1	6.5
		150	0.95	70.8	47.2	35.4	28.3	23.6	20.2	17.7	14.2	46.7	31.1	23.4	18.7	15.6	13.3	11.7	9.3	35.4	23.6	17.7	14.2	11.8	10.1	8.8	7.1
10-150	30FCX04 Red	15	0.40	29.5	19.7	14.7	11.8	9.8	8.4	7.4	5.9	19.5	13.0	9.7	7.8	6.5	5.6	4.9	3.9	14.7	9.8	7.4	5.9	4.9	4.2	3.7	2.9
		20	0.46	34.0	22.7	17.0	13.6	11.3	9.7	8.5	6.8	22.5	15.0	11.2	9.0	7.5	6.4	5.6	4.5	17.0	11.3	8.5	6.8	5.7	4.9	4.3	3.4
		25	0.51	38.1	25.4	19.0	15.2	12.7	10.9	9.5	7.6	25.1	16.7	12.6	10.0	8.4	7.2	6.3	5.0	19.0	12.7	9.5	7.6	6.3	5.4	4.8	3.8
		30	0.56	41.7	27.8	20.8	16.7	13.9	11.9	10.4	8.3	27.5	18.3	13.8	11.0	9.2	7.9	6.9	5.5	20.8	13.9	10.4	8.3	6.9	6.0	5.2	4.2
		35	0.61	45.0	30.0	22.5	18.0	15.0	12.9	11.3	9.0	29.7	19.8	14.9	11.9	9.9	8.5	7.4	5.9	22.5	15.0	11.3	9.0	7.5	6.4	5.6	4.5
		40	0.65	48.1	32.1	24.1	19.3	16.0	13.8	12.0	9.6	31.8	21.2	15.9	12.7	10.6	9.1	7.9	6.4	24.1	16.0	12.0	9.6	8.0	6.9	6.0	4.8
		60	0.79	59.0	39.3	29.5	23.6	19.7	16.8	14.7	11.8	38.9	25.9	19.5	15.6	13.0	11.1	9.7	7.8	29.5	19.7	14.7	11.8	9.8	8.4	7.4	5.9
		80	0.92	68.1	45.4	34.0	27.2	22.7	19.5	17.0	13.6	44.9	30.0	22.5	18.0	15.0	12.8	11.2	9.0	34.0	22.7	17.0	13.6	11.3	9.7	8.5	6.8
		100	1.03	76.1	50.8	38.1	30.5	25.4	21.8	19.0	15.2	50.2	33.5	25.1	20.1	16.7	14.4	12.6	10.0	38.1	25.4	19.0	15.2	12.7	10.9	9.5	7.6
		125	1.15	85.1	56.7	42.6	34.0	28.4	24.3	21.3	17.0	56.2	37.4	28.1	22.5	18.7	16.0	14.0	11.2	42.6	28.4	21.3	17.0	14.2	12.2	10.6	8.5
		150	1.26	93.2	62.2	46.6	37.3	31.1	26.6	23.3	18.6	61.5	41.0	30.8	24.6	20.5	17.6	15.4	12.3	46.6	31.1	23.3	18.6	15.5	13.3	11.7	9.3
10-150	30FCX05 Brown (50 M Strainer)	15	0.50	36.8	24.6	18.4	14.7	12.3	10.5	9.2	7.4	24.3	16.2	12.2	9.7	8.1	6.9	6.1	4.9	18.4	12.3	9.2	7.4	6.1	5.3	4.6	3.7
		20	0.57	42.5	28.4	21.3	17.0	14.2	12.2	10.6	8.5	28.1	18.7	14.0	11.2	9.4	8.0	7.0	5.6	21.3	14.2	10.6	8.5	7.1	6.1	5.3	4.3
		25	0.64	47.5	31.7	23.8	19.0	15.8	13.6	11.9	9.5	31.4	20.9	15.7	12.6	10.5	9.0	7.8	6.3	23.8	15.8	11.9	9.5	7.9	6.8	5.9	4.8
		30	0.70	52.1	34.7	26.0	20.8	17.4	14.9	13.0	10.4	34.4	22.9	17.2	13.8	11.5	9.8	8.6	6.9	26.0	17.4	13.0	10.4	8.7	7.4	6.5	5.2
		35	0.76	56.3	37.5	28.1	22.5	18.8	16.1	14.1	11.3	37.1	24.8	18.6	14.9	12.4	10.6	9.3	7.4	28.1	18.8	14.1	11.3	9.4	8.0	7.0	5.6
		40	0.81	60.1	40.1	30.1	24.1	20.0	17.2	15.0	12.0	39.7	26.5	19.8	15.9	13.2	11.3	9.9	7.9	30.1	20.0	15.0	12.0	10.0	8.6	7.5	6.0
		60	0.99	73.7	49.1	36.8	29.5	24.6	21.0	18.4	14.7	48.6	32.4	24.3	19.4	16.2	13.9	12.2	9.7	36.8	24.6	18.4	14.7	12.3	10.5	9.2	7.4
		80	1.15	85.1	56.7	42.5	34.0	28.4	24.3	21.3	17.0	56.1	37.4	28.1	22.5	18.7	16.0	14.0	11.2	42.5	28.4	21.3	17.0	14.2	12.2	10.6	8.5
		100	1.28	95.1	63.4	47.5	38.0	31.7	27.2	23.8	19.0	62.8	41.8	31.4	25.1	20.9	17.9	15.7	12.6	47.5	31.7	23.8	19.0	15.8	13.6	11.9	9.5
		125	1.43	106.3	70.9	53.2	42.5	35.4	30.4	26.6	21.3	70.2	46.8	35.1	28.1	23.4	20.0	17.5	14.0	53.2	35.4	26.6	21.3	17.7	15.2	13.3	10.6
		150	1.57	116.5	77.6	58.2	46.6	38.8	33.3	29.1	23.3	76.9	51.2	38.4	30.7	25.6	22.0	19.2	15.4	58.2	38.8	29.1	23.3	19.4	16.6	14.6	11.6
10-150	30FCX06 Gray (50 M Strainer)	15	0.60	44.6	29.7	22.3	17.8	14.9	12.7	11.1	8.9	29.4	19.6	14.7	11.8	9.8	8.4	7.4	5.9	22.3	14.9	11.1	8.9	7.4	6.4	5.6	4.5
		20	0.69	51.5	34.3	25.7	20.6	17.2	14.7	12.9	10.3	34.0	22.6	17.0	13.6	11.3	9.7	8.5	6.8	25.7	17.2	12.9	10.3	8.6	7.4	6.4	5.1
		25	0.77	57.5	38.4	28.8	23.0	19.2	16.4	14.4	11.5	38.0	25.3	19.0	15.2	12.7	10.8	9.5	7.6	28.8	19.2	14.4	11.5	9.6	8.2	7.2	5.8
		30	0.85	63.0	42.0	31.5	25.2	21.0	18.0	15.8	12.6	41.6	27.7	20.8	16.6	13.9	11.9	10.4	8.3	31.5	21.0	15.8	12.6	10.5	9.0	7.9	6.3
		35	0.92	68.1	45.4	34.0	27.2	22.7	19.4	17.0	13.6	44.9	29.9	22.5	18.0	15.0	12.8	11.2	9.0	34.0	22.7	17.0	13.6	11.3	9.7	8.5	6.8
		40	0.98	72.8	48.5	36.4	29.1	24.3	20.8	18.2	14.6	48.0	32.0	24.0	19.2	16.0	13.7	12.0	9.6	36.4	24.3	18.2	14.6	12.1	10.4	9.1	7.3
		60	1.20	89.1	59.4	44.6	35.6	29.7	25.5	22.3	17.8	58.8	39.2	29.4	23.5	19.6	16.8	14.7	11.8	44.6	29.7	22.3	17.8	14.9	12.7	11.1	8.9
		80	1.39	102.9	68.6	51.5	41.2	34.3	29.4	25.7	20.6	67.9	45.3	34.0	27.2	22.6	19.4	17.0	13.6	51.5	34.3	25.7	20.6	17.2	14.7	12.9	10.3
		100	1.55	115.1	76.7	57.5	46.0	38.4	32.9	28.8	23.0	75.9	50.6	38.0	30.4	25.3	21.7	19.0	15.2	57.5	38.4	28.8	23.0	19.2	16.4	14.4	11.5
		125	1.73	128.6	85.8	64.3	51.5	42.9	36.8	32.2	25.7	84.9	56.6	42.4	34.0	28.3	24.3	21.2	17.0	64.3	42.9	32.2	25.7	21.4	18.4	16.1	12.9
		150	1.26	93.2	62.2	46.6	37.3	31.1	26.6	23.3	18.6	61.5	41.0	30.8	24.6	20.5	17.6	15.4	12.3	46.6	31.1	23.3	18.6	15.5	13.3	11.7	9.3

- full cone spray tips are classified as GPM @ 15 PSI

FULL CONE SPRAY TIPS

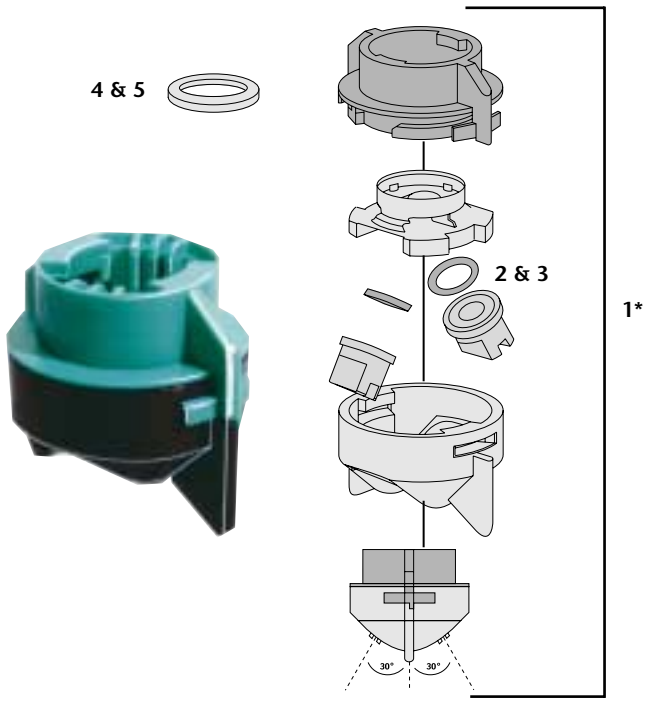


FCX – Full Cone

FulcoTip (FCX) - The Hypro hollow-cone spray tips produce finely atomized droplets in a full-cone, 80-degree pattern.

ALL TO THE POWER OF 2!

TwinCap™ is a simple, compact way of accommodating two spray tips back to back. TwinCap™ will accept standard FanTips, low pressure FanTips, even spray FanTips, Ultra Lo-Drift, Total Range, Variable Pressure and Lo-Drift nozzles. TwinCap™ will fit on most makes of nozzle holders.



ORDERING INFORMATION		
	DESCRIPTION	**PART NO.**
1.*	EF3 TwinCap Assembly, Emerald Green	152607TC
2.	Internal 'O' Ring	65-MN011x1.3
3.	Internal 'O' Ring - Viton	65-VBS012
4.	Sealing Washer	402200-040
5.	Sealing Washer - Viton	402200-040V
* Tips Not Included		

Control

A major factor which influences the range of droplet sizes produced by a nozzle is flow rate. Given that chemical manufacturers recommend the rate at which their products should be applied, there is currently little scope for control of droplet spectrum. TwinCap™ will give you greater control. For example, an operator using TR80-06 Total Range spray tips to apply 22 GPA at 40.0 psi pressure at 8 mph with MEDIUM spray quality, could move to TwinCap™ fitted with two TR80-03 Total Range spray tips. An operator would apply the same rate at the same speed and pressure but with a FINE spray quality.

Flexibility

TwinCap™ allows you to apply the volume per acre you want, at the speed you want without compromising spray quality.

Accuracy

Used with Hypro's proven range of precision spray tips, TwinCap™ can help you accurately target your chemical to where it is needed.

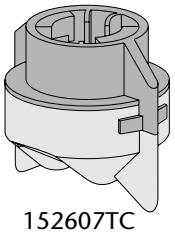
Penetration

Trials suggest the "inclined" spraying gives better penetration, especially in broad-leaf crops such as potatoes and sugar beets.

Coverage

A combination of correct spray quality and accurate targeting will ensure good chemical coverage and efficiency.

THE TWINCAP™



152607TC

ATTENTION!

Because of the inclined spray patterns, suggested spray heights to achieve 50% overlap are as follows:

SUGGESTED SPRAY HEIGHT		
TIP SPRAY ANGLE	**20" SPACING**	**30" SPACING**
80°	20"	30"
110°	19"	24"
120°	18"	22"

ASAE S-572 Spray Nozzle Classification by Droplet Size

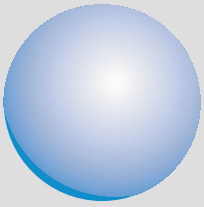
Developed by the Pest Control and Fertilizer Application Committee; approved by the Power and Machinery Division Standards Committee; adopted by ASAE PM41.

This standard defines droplet spectrum categories for the classification of spray nozzles, relative to specified reference fan nozzles discharging spray into static air or so that no stream of air enhances atomization. **The purpose of classification is to provide the nozzle user with droplet size information, primarily to indicate off-site spray drift potential, and secondarily, for application efficiency.**

This standard defines a means for relative nozzle comparisons only based on droplet size. Other spray drift and application efficiency factors, such as droplet discharge trajectory, height and velocity, air bubble inclusion, droplet evaporation and impaction on target are examples of factors not addressed by the current standard.

Classification categories, symbols and corresponding color codes are the following:

Classification Category	Symbol	Color Code	Approximate VMD
Very Fine	VF	Red	<100
Fine	F	Orange	100-175
Medium	M	Yellow	175-250
Coarse	C	Blue	250-375
Very Coarse	VC	Green	375-450
Extremely Coarse	XC	White	>450

Degree of Atomization	Droplet Size (Microns)	Relative Size	Relative Size Related to Common Objects
Fog	Up to 20		Point of Needle (25 Microns)
Fine Mist	20-100		Human Hair (100 Microns)
Fine Drizzle	100-250		Sewing thread (150 Microns)
Light Rain	250-1000		Staple (420 Microns)
Thunderstorm Rain	1000-4000		#2 Pencil Lead (2000 Microns)

Droplet sizes are usually expressed in microns (micrometers). One micron equals one thousandth of a millimeter. Other than the effects of the specific material being sprayed, the four major factors effecting droplet size are: nozzle style, capacity, spraying pressure and spray pattern type. Lower spraying pressures provide larger droplet sizes, while higher spraying pressures yield smaller droplet sizes. The smallest droplet sizes are achieved by air atomizing nozzles. Generally speaking, the largest spray droplets are produced by wide-angle, flat hydraulic spray nozzles. In the hydraulic spray nozzle series, the smallest droplet sizes are produced by hollow-cone spray nozzles.

ASAE S-572 Chart

Color Code	Classifications	Thresholds		
		Dv0.1	Dv0.5	Dv0.9
VF	Very Fine	41.5	99.9	170.8
F	Fine	65.7	163.6	350.1
M	Medium	88	249.4	495.2
C	Coarse	95.6	365.1	683.5
VC	Very Coarse	109.2	408.3	842.6
XC	Extremely Coarse	>109.2	>408.3	>842.6

Droplet size classification are based on BCPC specification and in accordance with ASAE S-572 at date of printing 5/01. Classifications are subject to change. Measures made by MALVERN particle sizer 2600 and Oxford Visizer.

Pressure Conversions

1 Bar . . . . . 15 psi	6 Bar . . . . . 87 psi
1.5 Bar . . . . 22 psi	7 Bar . . . . . 102 psi
2 Bar . . . . . 29 psi	8 Bar . . . . . 116 psi
2.76 Bar . . . 40 psi	10 Bar . . . . 145 psi
3 Bar . . . . . 44 psi	11 Bar . . . . 160 psi
3.5 Bar . . . . 51 psi	12 Bar . . . . 174 psi
4 Bar . . . . . 58 psi	20 Bar . . . . 290 psi
4.5 Bar . . . . 65 psi	30 Bar . . . . 435 psi
5 Bar . . . . . 73 psi	

ULD 120° - Ultra Lo-Drift - Dual Air Eduction

	15 PSI	29 PSI	40 PSI	44 PSI	58 PSI	73 PSI	87 PSI	102 PSI	116 PSI
ULD120-015	VC	C	C	C	M	M	M	F	F
ULD120-02	VC	C	C	C	C	M	M	M	F
ULD120-025	VC	C	C	C	C	M	M	M	M
ULD120-03	VC	VC	C	C	C	C	M	M	M
ULD120-04	VC	VC	C	C	C	C	M	M	M
ULD120-05	XC	VC	VC	VC	C	C	C	M	M
ULD120-06	XC	XC	VC	VC	VC	C	C	C	M

AVI 110° - Air-Inducing Venturi Flat Fan Ceramic Tip

	29 PSI	40 PSI	44 PSI	58 PSI	73 PSI	87 PSI	102 PSI	116 PSI
AVI-110015	VC	VC	VC	VC	C	C	C	C
AVI-11002	VC	VC	VC	VC	VC	VC	VC	VC
AVI-110025	XC	VC	VC	VC	VC	VC	VC	VC
AVI-11003	XC	XC	XC	VC	VC	VC	VC	VC
AVI-11004	XC	XC	XC	VC	VC	VC	VC	VC
AVI-11005	XC	XC	XC	XC	VC	VC	VC	VC
AVI-11006	XC	XC	XC	XC	XC	VC	VC	VC

TR 80° - Total Range - Stainless Steel Insert

	15 PSI	29 PSI	40 PSI	44 PSI	58 PSI	73 PSI
TR80-01	M	F	VF	VF	VF	VF
TR80-015	M	F	F	F	VF	VF
TR80-02	M	F	F	F	F	VF
TR80-03	C	M	F	F	F	F
TR80-04	C	M	M	M	F	F
TR80-05	C	C	M	M	M	F
TR80-06	C	C	M	M	M	M
TR80-08	VC	C	C	C	M	M
TR80-10	VC	VC	C	C	C	M
TR80-15	XC	VC	C	C	C	C

TR 110° - Total Range - Stainless Steel Insert

	15 PSI	29 PSI	40 PSI	44 PSI	58 PSI	73 PSI
TR110-01	F	F	VF	VF	VF	VF
TR110-015	M	F	F	F	F	VF
TR110-02	M	F	F	F	F	F
TR110-03	M	M	F	F	F	F
TR110-04	C	M	F	F	F	F
TR110-05	C	M	F	F	F	F
TR110-06	C	C	M	M	M	F
TR110-08	C	C	M	M	M	M
TR110-10	VC	C	M	M	M	M
TR110-15	VC	VC	C	C	M	M

AXI 80° - Wide Pressure Range Flat Fan Ceramic

	22 PSI	29 PSI	40 PSI	44 PSI	58 PSI	73 PSI
AXI-80015	F	F	F	F	F	VF
AXI-8002	M	F	F	F	F	F
AXI-8003	M	M	F	F	F	F
AXI-8004	M	M	M	M	M	F
AXI-8005	M	M	M	M	M	M
AXI-8006	M	M	M	M	M	M

AXI 110° - Wide Pressure Range Flat Fan Ceramic

	22 PSI	29 PSI	40 PSI	44 PSI	58 PSI	73 PSI
AXI-110015	F	F	F	F	F	VF
AXI-11002	F	F	F	F	F	F
AXI-11003	M	M	M	M	F	F
AXI-11004	M	M	M	M	M	F
AXI-11005	M	M	M	M	M	M
AXI-11006	M	M	M	M	M	M

ASAE S-572 Chart - continued

VP 80° - Variable Pressure Range Flat Fan Tip

	15 PSI	29 PSI	40 PSI	44 PSI	58 PSI	73 PSI
VP80-015	M	F	F	F	F	F
VP80-02	M	F	F	F	F	F
VP80-03	M	M	F	F	F	F
VP80-04	C	M	M	M	F	F
VP80-05	C	M	M	M	M	F
VP80-06	C	C	C	M	M	M

VP 110° - Variable Pressure Range Flat Fan Tip

	15 PSI	29 PSI	40 PSI	44 PSI	58 PSI	73 PSI
VP110-015	M	F	F	F	F	F
VP110-02	M	F	F	F	F	F
VP110-03	M	M	F	F	F	F
VP110-04	C	M	M	M	F	F
VP110-05	C	M	M	M	M	F
VP110-06	C	C	M	M	M	M

LD 80° - Lo-Drift Flat Fan Tip

	15 PSI	29 PSI	40 PSI	44 PSI	58 PSI	73 PSI
LD015F80	C	M	M	M	M	M
LD02F80	C	C	M	M	M	M
LD03F80	C	C	C	C	M	M
LD04F80	C	C	C	C	M	M
LD05F80	VC	C	C	C	C	M
LD06F80	VC	VC	C	C	C	C
LD08F80	XC	VC	VC	VC	C	C

LD 110° - Lo-Drift Flat Fan Tip

	15 PSI	29 PSI	40 PSI	44 PSI	58 PSI	73 PSI
LD015F110	M	M	M	M	M	F
LD02F110	C	M	M	M	M	M
LD03F110	C	C	M	M	M	M
LD04F110	C	C	M	M	M	M
LD05F110	C	C	C	C	M	M
LD06F110	VC	C	C	C	C	C
LD08F110	VC	C	C	C	C	C

ADI 110° - Anti-Drift Flat Fan Ceramic Tip

	29 PSI	40 PSI	44 PSI	58 PSI	73 PSI
ADI-11001	M	M	M	F	F
ADI-110015	M	M	M	M	M
ADI-11002	M	M	M	M	
ADI-11003	C	M	M	M	M
ADI-11004	VC	C	C	C	M

Fan Tip 80° - Standard Flat Fan Spray Tip

	29 PSI	40 PSI	44 PSI	58 PSI	73 PSI
30-0067F80	VF	VF	VF	VF	VF
30-01F80	F	F	F	F	VF
30-015F80	M	F	F	F	F
30-02F80	M	M	M	F	F
30-03F80	C	M	M	F	F
30-04F80	C	M	M	M	M
30-05F80	C	M	M	M	M
30-06F80	C	C	C	M	M
30-08F80	VC	C	C	C	C
30-10F80	VC	C	C	C	C
30-15F80	VC	VC	VC	C	C
30-20F80	VC	VC	VC	VC	C

Fan Tip 110° - Standard Flat Fan Spray Tip

	29 PSI	40 PSI	44 PSI	58 PSI	73 PSI
30-01F110	F	F	F	F	VF
30-015F11	F	F	F	F	VF
30-02F110	F	F	F	F	F
30-03F110	M	F	F	F	F
30-04F110	M	M	M	F	F
30-05F110	M	M	M	M	F
30-06F110	M	M	M	M	M
30-08F110	C	C	C	C	M
30-10F110	C	C	C	C	C
30-15F110	C	C	C	C	C
30-20F110	C	C	C	C	C

API 80° - Standard Flat Fan Ceramic Tip

	29 PSI	40 PSI	44 PSI	58 PSI	73 PSI
API-80015	F	F	F	F	F
API-8002	M	F	F	F	F
API-8003	M	M	M	M	F
API-8004	M	M	M	M	M
API-8005	C	M	M	M	M
API-8006	C	C	C	M	M

API 110° - Standard Flat Fan Ceramic Tip

	29 PSI	40 PSI	44 PSI	58 PSI	73 PSI
API-110015	F	F	F	F	VF
API-11002	F	F	F	F	F
API-11003	M	M	M	F	F
API-11004	M	M	M	M	F
API-11005	M	M	M	M	M
API-11006	M	M	M	M	M

ASAE S-572 Chart - continued

DT - DeflecTip Wide-Angle Flat Flood Tip

	15 PSI	29 PSI	40 PSI	44 PSI	58 PSI
30DT0.5	M	F	F	F	F
30DT0.75	C	M	F	F	F
30DT1.0	C	M	M	M	F
30DT1.5	M	M	M	M	M
30DT2.0	C	M	M	M	M
30DT2.5	C	M	M	M	M
30DT3.0	C	M	M	M	M
30DT4.0	C	M	M	M	M
30DT5.0	C	C	M	M	M
30DT7.5	C	C	C	C	C
30DT10	VC	C	C	C	C
30DT15	VC	VC	C	C	C
30DT20	XC	VC	VC	VC	C

APM - Wide-Angle Flat Flood Tip

	15 PSI	29 PSI	40 PSI	44 PSI	58 PSI
APM-Yellow	M	M	M	M	M
APM-Orange	M	M	M	M	M
APM-Red	C	M	M	M	M
APM-Green	C	M	M	M	M
APM-Blue	C	M	M	M	M
APM-Gray	C	C	M	M	M
APM-Black	VC	C	C	C	C

AVI-OC 80° - Air-Inducing Venturi Ceramic Off-Center

	40 PSI	44 PSI	58 PSI	73 PSI	87 PSI	102 PSI
AVI-OC-8002	XC	VC	VC	VC	VC	VC
AVI-OC-80025	XC	XC	VC	VC	VC	VC
AVI-OC-8003	XC	XC	XC	VC	VC	VC
AVI-OC-8004	XC	XC	XC	XC	VC	VC

OC 80° - Brass Off-Center

	15 PSI	29 PSI	40 PSI	44 PSI	58 PSI
28OC2	M	M	F	F	F
28OC3	M	M	M	F	F
28OC4	C	M	M	M	F
28OC6	C	C	M	M	M
28OC8	C	C	C	M	M
28OC12	C	C	C	C	M
28OC16	VC	C	C	C	C

OCI 80° - Ceramic Off-Center

	29 PSI	40 PSI	44 PSI	58 PSI	73 PSI
OCI-8002	M	M	M	F	F
OCI-8003	M	M	M	M	F
OCI-8004	M	M	M	M	M

E - Even Flat Fan

	29 PSI	40 PSI	44 PSI	58 PSI	73 PSI
30-01E80	F	F	F	F	VF
30-015E80	M	F	F	F	F
30-02E80	M	M	M	F	F
30-03E80	C	M	M	M	F
30-04E80	C	C	C	M	M
30-05E80	C	C	C	C	M
30-06E80	C	C	C	C	C
30-08E80	VC	C	C	C	C

DTC - Cam Couple DeflecTip Wide-Angle Flat Flood Tip

	15 PSI	29 PSI	40 PSI	44 PSI	58 PSI
30DT10C	VC	C	C	C	C
30DT15C	VC	VC	C	C	C
30DT20C	XC	VC	C	C	C
30DT30C	XC	VC	VC	VC	C
30DT40C	XC	XC	VC	VC	VC
30DT50C	XC	XC	XC	XC	VC
30DT60C	XC	XC	XC	XC	XC
30DT80C	XC	XC	XC	XC	XC
30DT100C	XC	XC	XC	XC	XC
30DT120C	XC	XC	XC	XC	XC
30DT150C	XC	XC	XC	XC	XC
30DT180C	XC	XC	XC	XC	XC

ASAE S-572 Chart - continued

HCX 80° - Hollow Cone

	40 PSI	44 PSI	58 PSI	73 PSI	87 PSI	102 PSI	116 PSI	131 PSI	145 PSI	160 PSI
30HCX2	VF	VF	VF	VF	VF	VF	VF	VF	VF	VF
30HCX3	VF	VF	VF	VF	VF	VF	VF	VF	VF	VF
30HCX4	F	F	VF	VF	VF	VF	VF	VF	VF	VF
30HCX6	F	F	VF	VF	VF	VF	VF	VF	VF	VF
30HCX8	F	F	F	VF	VF	VF	VF	VF	VF	VF
30HCX9	F	F	F	F	VF	VF	VF	VF	VF	VF
30HCX10	F	F	F	F	F	VF	VF	VF	VF	VF
30HCX12	F	F	F	F	F	F	F	VF	VF	VF
30HCX18	F	F	F	F	F	F	F	F	VF	VF

HCA / ATR 80° - Hollow Cone

	40 PSI	44 PSI	58 PSI	73 PSI	87 PSI	102 PSI	116 PSI	131 PSI	145 PSI	160 PSI
White	VF	VF	VF	VF	VF	VF	VF	VF	VF	VF
HCA-01	VF	VF	VF	VF	VF	VF	VF	VF	VF	VF
Lilac	VF	VF	VF	VF	VF	VF	VF	VF	VF	VF
HCA-015	VF	VF	VF	VF	VF	VF	VF	VF	VF	VF
Brown	VF	VF	VF	VF	VF	VF	VF	VF	VF	VF
HCA-02	F	F	VF	VF	VF	VF	VF	VF	VF	VF
Yellow	F	F	VF	VF	VF	VF	VF	VF	VF	VF
HCA-025	F	F	VF	VF	VF	VF	VF	VF	VF	VF
Orange	F	F	VF	VF	VF	VF	VF	VF	VF	VF
HCA-03	F	F	VF	VF	VF	VF	VF	VF	VF	VF
Red	F	F	F	F	F	VF	VF	VF	VF	VF
Gray	F	F	F	F	F	F	F	VF	VF	VF
Green	F	F	F	F	F	F	F	F	VF	VF
Black	F	F	F	F	F	F	F	F	F	VF
Blue	M	M	M	M	F	F	F	F	F	F

DC-CR Disc/Core

	36 PSI	40 PSI	44 PSI	51 PSI	58 PSI	65 PSI	73 PSI	80 PSI	87 PSI
30-DC-01/30-CR-23	F	F	F	F	VF	VF	VF	VF	VF
30-DC-02/30-CR-23	F	F	F	F	F	VF	VF	VF	VF
30-DC-03/30-CR-23	F	F	F	F	F	F	F	VF	VF
30-DC-04/30-CR-23	F	F	F	F	F	F	F	F	F
30-DC-05/30-CR-23	M	F	F	F	F	F	F	F	F
30-DC-06/30-CR-23	M	M	M	F	F	F	F	F	F
30-DC-01/30-CR-25	F	F	F	F	F	VF	VF	VF	VF
30-DC-1.5/30-CR-25	F	F	F	F	F	F	VF	VF	VF
30-DC-02/30-CR-25	F	F	F	F	F	F	F	VF	VF
30-DC-03/30-CR-25	M	F	F	F	F	F	F	F	VF
30-DC-04/30-CR-25	M	M	M	F	F	F	F	F	F
30-DC-05/30-CR-25	M	M	M	M	M	M	M	F	F
30-DC-06/30-CR-25	M	M	M	M	M	M	M	M	M
30-DC-07/30-CR-25	C	M	M	M	M	M	M	M	M
30-DC-08/30-CR-25	C	C	C	C	C	C	C	M	M
30-DC-10/30-CR-25	C	C	C	C	C	C	C	C	M
30-DC-01/30-CR-45	M	F	F	F	F	F	VF	VF	VF
30-DC-1.5/30-CR-45	M	M	M	F	F	F	F	VF	VF
30-DC-02/30-CR-45	M	M	M	M	F	F	F	F	VF
30-DC-03/30-CR-45	M	M	M	M	M	F	F	F	F
30-DC-04/30-CR-45	M	M	M	M	M	M	M	M	F
30-DC-05/30-CR-45	M	M	M	M	M	M	M	M	M
30-DC-06/30-CR-45	C	M	M	M	M	M	M	M	M
30-DC-07/30-CR-45	C	C	C	C	M	M	M	M	M
30-DC-08/30-CR-45	C	C	C	C	C	C	M	M	M

Wear and Chemical Compatibility

ALBUZ® - CERAMIC – Highly resistant to abrasive and corrosive chemistry and provides superior wear resistance in abrasive applications and high pressures. Albuz nozzle orifices are made of pink sintered ceramic, reinforced by special oxides, and specially designed by Saint-Gobain for spraying applications.

HOSTAFORM® - POLYACETAL – Provides good resistance to most chemicals and superior resistance to wear with most agricultural chemistry. Susceptible to strong mineral acids and a few organic solvents. Resistance to most alkalis is excellent. Organic solvents usually cause slight swelling without any other harmful effect.*

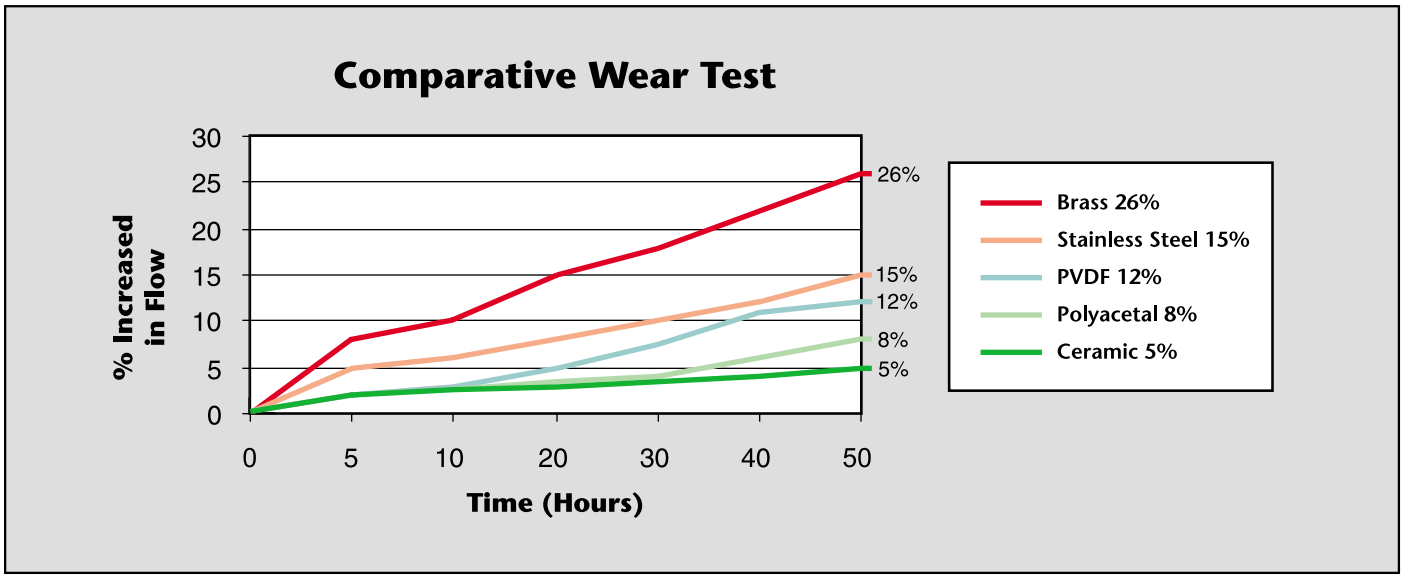
SOLEF® - POLYVINLYIDENE FLUORIDE (PVDF) – Should be used with acid-based agricultural defoliation chemistry. Good resistance to wear.* Resists many reagents and high temperatures (up to 300ºF). Susceptible to high temperatures above water boiling (210ºF) in combination with concentrated sulfuric and nitric acids. Preferred in industrial spraying applications.

Stainless Steel – Good resistance to chemicals and provides average wear resistance.

Brass – Average resistance to most chemistry and poor wear resistance. Susceptible to corrosion especially with fertilizers.

Hypro's Technical Support Group is available to answer chemical compatibility issues and assist in choosing the correct spray tip for your application. Call 1-800-445-8360.
* A complete list of resistant reagents, acids and alkaline is available from Hypro technical support group.

Hostaform Trademark of Tecona
Solef Trademark of Solvay
ALBUZ Trademark of Saint-Gobain



Source: SGS UK LTD. Saint-Gobain AC France
Test Medium: 2.5% Kaolin in water
Test Pressure: 40 psi.

Spray Tip Information Guide

Spray pattern is the first requirement to fill. Determine what type of function is to be performed, under what conditions, and the results expected. Spray tips are, by design, multipurpose. You will find that more than one spray tip pattern will meet your needs.

Capacity of the spray tip varies with pressure. This requirement is very straightforward. The pressure at which you plan to use the spray tip is interrelated to all the other requirements. It takes a four-fold increase in pressure to double the capacity from any set pressure.

Spray Angle is also affected by pressure. Pressure is responsible for changes in the spray angle and effective coverage. Spray tips used below the recommended pressure produce a narrow, weak pattern and coverage. If you use a pressure that exceeds the spray tip's pressure range, you run the risk of uncontrollable drift. You should always pick a spray tip that will perform at the complete range of pressure with which you will be applying your liquid.

Theoretical Coverage (inches) at various distance (inches) from the Spray Tip

Spray Angle	8"	10"	12"	15"	18"	20"	30"	40"	48"
15º	2.1"	2.6"	3.2"	3.9"	4.7"	5.2"	7.9"	10.4"	12.6"
25º	3.5"	4.4"	5.3"	6.6"	8"	8.8"	13.3"	17.6"	21.2"
40º	5.8"	7.3"	8.7"	10.9"	13.1"	14.6"	21.8"	29.2"	34.9"
50º	7.5"	9.3"	11.2"	14"	16.8"	18.6"	28"	37.2"	44.8"
65º	10.2"	12.7"	15.3"	19.2"	22.9"	25.4"	38.2"	50.8"	61.2"
80º	13.4"	16.8"	20.2"	25.2"	30.3"	33.9"	50.4"	67.8"	80.6"
110º	22.8"	28.5"	34.3"	42.8"	51.4"	57"	85.6"	114"	137.2"
120º	27.4"	34.6"	41.6"	52"	62.4"	69.2"	104"	138.4"	166.4"
140º	43.8"	54.8"	74.5"	82.2"	98.6"	105.6"	164.4"	211.2"	263"

Factors Affecting Spray Tip Performance Summary

The information in the chart below applies to most spray applications. However, because there are so many different types and sizes of spray tips, the effects may vary in a specific application. Hypro is glad to assist you with any specific application questions.

Increase In

	Operating Pressure	Specific Gravity	Viscosity	Fluid Temperature	Surface Tension
Capacity (Flow Rate)	Increases	Decreases	•	• •	No Effect
Spray Angle	Increases then Decreases	Negligible	Decreases	Increases	Decreases
Droplet Size	Decreases	Negligible	Increases	Decreases	Increases
Pattern Quality	Improves	Negligible	Deteriorates	Improves	Negligible
Wear	Increases	Negligible	Decreases	Increases	—
Impact	Increases	Decreases	Decreases	Increases	Negligible
Velocity	Increases	Decreases	Decreases	Increases	Negligible

• Full Cone and hollow cone increases, flat fan spray decreases

• • Depends on fluid being sprayed and spray nozzle used

SUGGESTED MINIMUM SPRAY HEIGHTS
(Flat Fan Spray Tips)

Spray Angle	15" Spacing	20" Spacing	30" Spacing	40" Spacing**
80 degree (TR)	13" – 14"	17" – 19"	26" – 28"	NR*
110 degree (TR)	10" – 11"	15" – 18"	20" – 22"	NR*
120 degree (ULD)	8" – 10"	12" – 15"	16" – 20"	24" – 30"

* Not Recommended
** This nozzle spacing is prone to off-target trespass, under certain conditions that affect drift.

OPTIMUM SPRAY HEIGHTS
(Flat Fan Spray Tips)

Spray Angle	15" Spacing	20" Spacing	30" Spacing	40" Spacing**
80 degree (TR)	22"	30"	43"	NR*
110 degree (TR)	15"	20"	30"	NR*
120 degree (ULD)	15"	20"	30"	40"

* Not Recommended
** This nozzle spacing is prone to off-target trespass, under certain conditions that affect drift.

NOZZLE SPACING
To calculate a conversion factor for spacing not listed below, use the following formula:

$$\text{Conversion Factor} = \frac{\text{Nozzle Spacing in table (inches)}}{\text{Your Nozzle Spacing (inches)}}$$

20 inch Nozzle Spacing	
Other Spacing	Conversion Factor
8	2.5
10	2.0
12	1.67
14	1.43
15	1.33
16	1.25
18	1.11
20	1.0
22	0.91
24	0.83
26	0.77
28	0.71
30	0.66
40	0.5

30 inch Nozzle Spacing	
Other Spacing	Conversion Factor
15	2.0
20	1.5
22	1.36
24	1.25
26	1.15
28	1.07
30	1.0
32	0.94
34	0.88
36	0.83
38	0.79
40	0.75
45	0.66
60	0.5

Measuring Travel Speed

$$\text{Speed (MPH)} = \frac{\text{Distance (ft)} \times 60}{\text{Time (seconds)} \times 88}$$

Time Required in SECONDS (min:sec) to Travel a Distance of:

Speed in MPH	100 feet	200 feet	300 feet
0.5	136 (2:16)	273 (4:33)	409 (6:49)
1.0	68 (1:18)	136 (2:16)	205 (3:25)
1.5	45	91	136 (2:16)
2.0	34	68	102 (1: 42)
2.5	27	55	82 (1:22)
3.0	23	45	68 (1:08)
3.5	19	39	58
4.0	17	34	51
4.5	15	30	45
5.0	13.5	27	41
5.5	12.4	25	37
6.0		23	34
6.5		21	31
7.0		19	29
7.5		18	27
8.0		17	26
8.5		16	24
9.0		15	23
9.5		14	21.5
10		13.6	20.5

FORMULAS

GPM – Gallons Per Minute

GPH – Gallons Per Hour

GPA – Gallons Per Acre

GAL/1000FT^2 – Gallons Per 1000 Square Feet

MPH – Miles Per Hour

W - Nozzles spacing (in inches) for broadcast spraying
- Spray width (in inches) for single-nozzle band spraying or boomless spraying
- Row spacing (in inches) divided by the number of nozzles per row for directed spraying

$$\text{GPM (per spray tip)} = \frac{\text{GPA} \times \text{MPH} \times W}{5{,}940}$$

$$\text{GPM (per spray tip)} = \frac{\text{GAL/1000FT}^2 \times \text{MPH} \times W}{136}$$

$$\text{GPA} = \frac{5{,}940 \times \text{GPM (per spray tip)}}{\text{MPH} \times W}$$

$$\text{GAL/1000FT}^2 = \frac{136 \times \text{GPM (per spray tip)}}{\text{MPH} \times W}$$

Spraying Solutions Other than Water

When spraying liquids that have a different specific gravity than water, multiply GPA by the conversion factor so that you can choose the right spray tip to use.

Weight of Solution per Gallon	Specific Gravity	Conversion Factor
7.0 lbs.	0.84	0.92
8.0 lbs.	0.96	0.98
8.34 lbs. water	1.00	1.00
9.0 lbs.	1.08	1.04
10.0 lbs.	1.20	1.10
10.65 lbs. (28% nitrogen)	1.28	1.13
11.0 lbs.	1.32	1.15
12.0 lbs.	1.44	1.20
14.0 lbs.	1.68	1.30
16.0 lbs.	1.95	1.40

Desired application rate of 28%N is 30 GPA.
GPA (28%N) x Conversion Factor = GPA (water)
30 GPA (28%N) x 1.13 = 33.9 GPA (water)

Choose a spray tip from a table that will supply you with 33.9 GPA at the speed and pressure you want to apply the 28% N solution.

Conversion Factors

	Multiply	By	To Obtain
Area	Acres	43,560	square feet
	Acres	43.56	1000FT^2 blocks
	Acres	0.4047	Hectares
	Hectares	2.471	Acres
Length	Inches	25.4	Millimeters (mm)
	Inches	2.54	Centimeters (cm)
	Inches	0.0254	Meters (m)
	Feet	0.3048	Meters (m)
	Miles	1.609	Kilometers (km)
Volume	Gallons	128	Ounces
	Gallons	8	Pints
	Gallons	3.785	Liters
	Liters	0.2641	Gallons
	Gallons	0.833	Imperial Gallons
	Imperial Gallons	1.201	Gallons
Flow Rate	Gallons/hour (GPH)	3.785	Liters/hour (L/h)
	Gallons/minute (GPM)	3.785	Liters/minute (L/min)
Application Rate	Gallons Per Acre (GPA)	9.353	Liters/Hector (L/ha)
	Liter Per Hectare (L/ha)	0.1069	Gallons Per Acre (GPA)
Pressure	Pounds/In^2 (PSI)	0.06895	Bar
	Bar	14.5	Pounds/In^2 (PSI)
	Pounds/In^2 (PSI)	6.895	Kilopascals (kPA)
	Kilopascals (kPA)	0.145	Pounds/In^2 (PSI)
Speed	Miles Per Hour (MPH)	1.609	Kilometers/Hour (km/h)
	Kilometers/Hour (km/h)	0.62137	Miles Per Hour (MPH)

TREATED AREA PER FIELD FOR BANDING APPLICATIONS

Row Spacing	Band Width (inches)						
	7"	8"	10"	12"	15"	20"	24"
20"	.350	.400	.500	.600	.750	1.00	1.20
22"	.318	.363	.454	.545	.681	.909	1.09
30"	.233	.266	.333	.400	.500	.666	.800
36"	.194	.222	.278	.333	.416	.555	.666
40"	.175	.200	.250	.300	.375	.500	.600
48"	.145	.166	.208	.250	.321	.417	.500

Volume of Chemical Required – Band Spraying

$$\text{Volume of Chemical Solution Required in gallons} = \frac{\text{Band Width (inches)}}{[\text{Band Width (inches)} + \text{Spacing Between Bands (inches)}]} \times \text{Label Rate of Carrier (GPA)} \times \text{Field Area (Acres)}$$

HEIGHT REQUIREMENT – BAND SPRAYING

Band Width	Height off Target 80 degree	Height off Target 110 degree	GPA 30-inch Conversion Factors
8"	5"	3"	3.8
10"	6"	4"	3.0
12"	7"	4"	2.5
15"	9"	5"	2.0
18"	11"	6"	1.7
20"	12"	7"	1.5
30"	18"	11"	1.0

Gallons per Acre In BAND = Gallons per Acres X Conversion Factor from 30" spacing chart

GPA (gallons per acre) being applied with more than one nozzle creating band

$$\text{GPA} = \frac{5940 \times \text{GPM}}{\text{MPH} \times (W/N)}$$

$$\text{GPM} = \frac{\text{GPA} \times \text{MPH} \times (W/N)}{5940}$$

GPA = Gallons per field acre

GPM = Gallons per minute

MPH = Speed in miles per hour

W = Band width in inches

N = Number of nozzles to create band width

For fast, convenient and up-to-date information, call Hypro at:

Technical/Application	800-445-8360
Order Department	800-42HYPRO (800-424-9776)
FAX for fast delivery	800-323-6496

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