Bulletin
PRODUCT RELEASE

COMBO-JET®
Dual-Angle Max Spray Nozzle

Bulletin Date: March 16, 2026
Bulletin Reference: 260316-01

COMBO-JET® DUAL-ANGLE MAX SPRAY NOZZLE CHART - FOR PWM SPRAYERS

ASABE Spray Classification *(ASABE S572.1 Standard)*
Spray quality is categorized based on Dv0.1 and VMD droplet sizes. Objective testing data (by 3rd party), from spray spectrum recording equipment (without wind tunnel use), has been used to classify spray quality for this chart. Extra data (e.g. VMD, etc.) can vary between testing equipment and method, and is provided as an educational resource only.
Tips sized up to 110-06 verified on Phase Doppler Particle Analyzer (PDPA); tips sized over 110-06 verified on Malvern.

- Fine (F)
- Medium (M)
- Coarse (C)
- Very Coarse (VC)
- Extremely Coarse (XC)
- Ultra Coarse (UC)

VMD *(Volume Median Diameter)*
The median droplet (in µ) for a sprayed volume. Half of the volume is made of droplets smaller, with half made up of droplets larger.

% <141µ *(% Driftable Fines)*
Percentage of volume which is likely to drift. As wind & boom height increase, observed spray drift will increase substantially.

% <600µ *(% of Small Droplets)*
% of volume which is made up of 'small' droplets, useful for coverage. As % of useful droplets lowers, overall coverage is reduced.

Duty Cycle *(Effective 'on time' of a PWM solenoid)*
The duty cycle is the effective 'on time' of a PWM solenoid. Generally speed ranges are based on a 25% - 100% duty cycle. When selecting a nozzle, often a duty cycle of 60-80% is recommended at typical speeds, providing flexibility for upper speed & turning situations, as well as slower spraying speeds. It is advised to avoid spraying below 40% D/C.

Calculating Duty Cycle on Printed Charts *(Useful for nozzle sizing & selection)*
On Wilger printed charts, typically a SPEED RANGE is provided, but the duty cycle % is a dynamic factor based on the sprayers travel speed. **To calculate a duty cycle at a given travel speed, divide CURRENT sprayer speed into max nozzle speed. (e.g. 15mph / 20mph max = 75% duty cycle)**

Dual Angled Size & Angles	Flow Rate USGPM	Boom PSI	Tip psi	Application Rate in US Gallons / Acre on 20" Nozzle Spacing @ Sprayer Speed in Miles / Hour				Dual-Angle Max Assembly Spray Classification		%<141 Drift	%<600 Coverage
	Flow us gpm	Boom psi	Tip psi	Sprayer Speed (on 20" spacing) @ 10gpa	12.5gpa	15gpa	17.5gpa	DAM110-09 Tip 1	Tip 2	#44001-09 <141	<600
DAM110-09 30° & 50° Dual Angled ASSY PART# #44001-09	0.73	**35**	26	5.4-22	4.3-17	3.6-14	3.1-12	VC	C	5%	81%
	0.78	**40**	30	5.8-23	4.6-19	3.9-15	3.3-13	VC	C	6%	83%
	0.82	**45**	34	6.1-25	4.9-20	4.1-16	3.5-14	C	C	7%	85%
	0.87	**50**	37	6.5-26	5.2-21	4.3-17	3.7-15	C	C	8%	86%
	0.95	**60**	45	7.1-28	5.7-23	4.7-19	4.1-16	C	C	9%	88%
	0.99	**65**	48	7.4-29	5.9-24	4.9-20	4.2-17	C	C	10%	89%
	1.03	**70**	52	7.6-31	6.1-24	5.1-20	4.4-17	C	C	11%	90%
	1.10	**80**	60	8.2-33	6.5-26	5.5-22	4.7-19	C	C	12%	91%
DAM110-10 30° & 50° Dual Angled ASSY PART# #44001-10	Flow us gpm	Boom psi	Tip psi	Sprayer Speed (on 20" spacing) @ 10gpa	12.5gpa	15gpa	20gpa	DAM110-10 Tip 1	Tip 2	#44001-10 <141	<600
	0.84	**40**	28	6.3-25	5-20	4.2-17	3.1-13	C	C	7%	86%
	0.89	**45**	32	6.6-27	5.3-21	4.4-18	3.3-13	C	C	8%	88%
	0.94	**50**	35	7-28	5.6-22	4.7-19	3.5-14	C	C	9%	89%
	1.03	**60**	42	7.7-31	6.1-25	5.1-20	3.8-15	C	C	11%	90%
	1.07	**65**	46	8-32	6.4-26	5.3-21	4-16	C	C	12%	91%
	1.11	**70**	49	8.3-33	6.6-26	5.5-22	4.1-17	C	C	12%	91%
	1.19	**80**	56	8.8-35	7.1-28	5.9-24	4.4-18	C	C	14%	92%
DAM110-12 30° & 50° Dual Angled ASSY PART# #44001-12	Flow us gpm	Boom psi	Tip psi	Sprayer Speed (on 20" spacing) @ 12.5gpa	15gpa	17.5gpa	20gpa	DAM110-12 Tip 1	Tip 2	#44001-12 <141	<600
	0.99	**45**	27	5.9-24	4.9-20	4.2-17	3.7-15	C	VC	10%	87%
	1.05	**50**	30	6.2-25	5.2-21	4.5-18	3.9-16	C	C	11%	88%
	1.15	**60**	37	6.8-27	5.7-23	4.9-20	4.3-17	C	C	13%	89%
	1.19	**65**	40	7.1-28	5.9-24	5.1-20	4.4-18	C	C	14%	90%
	1.24	**70**	43	7.4-29	6.1-25	5.3-21	4.6-18	C	C	15%	90%
	1.32	**80**	49	7.9-32	6.6-26	5.6-23	4.9-20	C	C	16%	91%
DAM110-15 30° & 50° Dual Angled ASSY PART# #44001-15	Flow us gpm	Boom psi	Tip psi	Sprayer Speed (on 20" spacing) @ 13gpa	15gpa	17.5gpa	20gpa	DAM110-15 Tip 1	Tip 2	#44001-15 <141	<600
	1.20	**50**	26	6.9-28	6-24	5.1-21	4.5-18	C	VC	9%	83%
	1.32	**60**	31	7.6-30	6.5-26	5.6-22	4.9-20	C	C	11%	85%
	1.37	**65**	34	7.9-31	6.8-27	5.8-23	5.1-20	C	C	12%	86%
	1.43	**70**	36	8.2-33	7.1-28	6.1-24	5.3-21	C	C	12%	86%
	1.52	**80**	41	8.7-35	7.6-30	6.5-26	5.7-23	C	C	13%	87%
DAM110-16 30° & 50° Dual Angled ASSY PART# #44001-16	Flow us gpm	Boom psi	Tip psi	Sprayer Speed (on 20" spacing) @ 15gpa	17.5gpa	20gpa	25gpa	DAM110-16 Tip 1	Tip 2	#44001-16 <141	<600
	1.23	**50**	23	6.1-24	5.2-21	4.6-18	3.7-15	C	C	15%	90%
	1.34	**60**	28	6.7-27	5.7-23	5-20	4-16	C	C	17%	91%
	1.40	**65**	30	6.9-28	5.9-24	5.2-21	4.2-17	C	C	17%	92%
	1.45	**70**	33	7.2-29	6.2-25	5.4-22	4.3-17	M	M	18%	92%
	1.55	**80**	38	7.7-31	6.6-26	5.8-23	4.6-18	M	M	20%	93%
DAM110-18 30° & 50° Dual Angled ASSY PART# #44001-18	Flow us gpm	Boom psi	Tip psi	Sprayer Speed (on 20" spacing) @ 17.5gpa	20gpa	25gpa	30gpa	DAM110-18 Tip 1	Tip 2	#44001-18 <141	<600
	1.48	**65**	27	6.3-25	5.5-22	4.4-18	3.7-15	C	C	14%	90%
	1.54	**70**	29	6.5-26	5.7-23	4.6-18	3.8-15	C	C	15%	90%
	1.64	**80**	33	7-28	6.1-24	4.9-20	4.1-16	C	M	16%	91%
DAM110-20 30° & 50° Dual Angled ASSY PART# #44001-20	Flow us gpm	Boom psi	Tip psi	Sprayer Speed (on 20" spacing) @ 17.5gpa	20gpa	25gpa	30gpa	DAM110-20 Tip 1	Tip 2	#44001-20 <141	<600
	1.56	**65**	24	6.6-27	5.8-23	4.7-19	3.9-16	C	VC	11%	85%
	1.62	**70**	26	6.9-28	6-24	4.8-19	4-16	C	VC	12%	85%
	1.73	**80**	30	7.4-29	6.4-26	5.2-21	4.3-17	C	C	13%	86%

Tip Capsules included in Dual-Angle Max Nozzle Assembly

110° Tip Capsule 1 [30° front] Class	VMD	<141	<600	80° Tip Capsule 2 [50° back] Class	VMD	<141	<600
MC110-04		#44311-04		SC80-05		#44280-05	
Class	VMD	<141	<600	Class	VMD	<141	<600
VC	435	4%	81%	C	405	6%	81%
VC	417	5%	84%	C	388	7%	83%
C	401	6%	87%	C	372	8%	84%
C	386	6%	88%	C	358	9%	85%
C	361	7%	91%	C	334	11%	87%
C	351	8%	92%	C	324	12%	87%
C	340	8%	93%	C	314	12%	88%
C	322	9%	94%	C	297	14%	89%
SC110-05		#44211-05		SC80-05		#44280-05	
Class	VMD	<141	<600	Class	VMD	<141	<600
C	362	8%	91%	C	395	6%	82%
C	349	9%	92%	C	379	8%	83%
C	337	10%	93%	C	366	9%	84%
C	315	12%	94%	C	342	10%	86%
C	306	12%	94%	C	331	11%	87%
C	298	13%	95%	C	321	12%	87%
C	282	14%	96%	C	304	13%	88%
SC110-06		#44211-06		EC80-06		#44180-06	
Class	VMD	<141	<600	Class	VMD	<141	<600
C	430	5%	82%	VC	302	16%	91%
C	414	6%	84%	C	295	17%	91%
C	385	8%	87%	C	285	19%	91%
C	373	8%	89%	C	280	20%	91%
C	361	9%	90%	C	276	20%	91%
C	341	10%	91%	C	268	22%	90%
SC110-05		#44211-05		EC80-010		#44180-10	
Class	VMD	<141	<600	Class	VMD	<141	<600
C	373	7%	90%	VC	424	11%	80%
C	352	9%	91%	C	401	12%	82%
C	343	9%	92%	C	391	13%	83%
C	334	10%	93%	C	382	13%	83%
C	318	11%	94%	C	367	15%	84%
EC110-08		#44111-08		EC80-08		#44180-08	
Class	VMD	<141	<600	Class	VMD	<141	<600
C	313	15%	92%	C	346	14%	88%
C	296	17%	93%	C	324	16%	90%
C	289	17%	93%	C	315	17%	91%
M	282	18%	94%	M	307	18%	91%
M	270	19%	94%	M	292	20%	92%
EC110-10		#44111-10		EC80-08		#44180-08	
Class	VMD	<141	<600	Class	VMD	<141	<600
C	334	13%	90%	C	329	16%	90%
C	327	14%	90%	C	320	17%	90%
C	315	15%	91%	M	305	18%	91%
EC110-10		#44111-10		EC80-010		#44180-10	
Class	VMD	<141	<600	Class	VMD	<141	<600
C	344	12%	89%	VC	431	10%	80%
C	337	13%	90%	VC	421	11%	80%
C	325	14%	90%	C	405	12%	82%

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