Bulletin
PRODUCT RELEASE

COMBO-JET®
Dual-Angle Max Spray Nozzle

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

These charts are provided for comparative purposes only to illustrate differences within the Combo-Jet® dual-angle spray nozzle series & sizes. The data presented is extrapolated from third-party testing conducted under controlled conditions using water as the test solution. For Dual-angle spray characteristic charts, each capsule shares the same functional design as its corresponding Combo-Jet® cap pair (e.g., DR80-015 corresponds to DC80-015). However, minor variations in spray characteristics may occur when capsules are combined in a dual-angle nozzle configuration. In most cases, this may result in slightly coarser spray. Combined specifications sum the relative value of %<141µ and %<600µ based on their respective capsules. Actual field performance may vary. Spray characteristics and nozzle performance can change when using active chemical formulations. Wilger assumes no liability for misuse or misinterpretation of this information, including but not limited to improper spray application, crop damage, or harm to humans, livestock, or the environment. Always consult the most current charts available at www.wilger.net and follow all chemical label nozzle requirements, and ensure to use only nozzles that are qualified for both capsule spray quality..

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) @ 6gpa	7.5gpa	8.5gpa	10gpa	DAM110-05 Tip 1	Tip 2	#44001-05 <141	<600
DAM110-05 30° & 50° Dual Angled ASSY PART# #44001-05	0.41	**30**	27	5.1-20	4.1-16	3.6-14	3.1-12	C	C	6%	88%
	0.45	**35**	32	5.5-22	4.4-18	3.9-16	3.3-13	C	C	8%	90%
	0.48	**40**	36	5.9-24	4.7-19	4.2-17	3.5-14	C	C	9%	91%
	0.50	**45**	41	6.3-25	5-20	4.4-18	3.8-15	C	C	10%	92%
	0.53	**50**	45	6.6-26	5.3-21	4.7-19	4-16	C	C	11%	93%
	0.58	**60**	54	7.2-29	5.8-23	5.1-20	4.3-17	C	M	12%	94%
	0.61	**65**	59	7.5-30	6-24	5.3-21	4.5-18	C	M	13%	94%
	0.63	**70**	63	7.8-31	6.2-25	5.5-22	4.7-19	C	M	14%	95%
	0.67	**80**	72	8.3-33	6.7-27	5.9-24	5-20	C	M	15%	95%
	Flow us gpm	Boom psi	Tip psi	Sprayer Speed (on 20" spacing) @ 6.5gpa	7.5gpa	10gpa	12.5gpa	DAM110-06 Tip 1	Tip 2	#44001-06 <141	<600
DAM110-06 30° & 50° Dual Angled ASSY PART# #44001-06	0.48	**30**	26	5.5-22	4.8-19	3.6-14	2.9-12	C	C	7%	86%
	0.52	**35**	30	6-24	5.2-21	3.9-16	3.1-12	C	C	8%	88%
	0.56	**40**	35	6.4-26	5.6-22	4.2-17	3.3-13	C	C	9%	89%
	0.59	**45**	39	6.8-27	5.9-24	4.4-18	3.5-14	C	C	10%	90%
	0.63	**50**	43	7.2-29	6.2-25	4.7-19	3.7-15	C	C	11%	91%
	0.69	**60**	52	7.8-31	6.8-27	5.1-20	4.1-16	C	M	13%	93%
	0.71	**65**	57	8.2-33	7.1-28	5.3-21	4.2-17	C	M	14%	93%
	0.74	**70**	61	8.5-34	7.3-29	5.5-22	4.4-18	C	M	14%	94%
	0.79	**80**	70	9.1-36	7.8-31	5.9-24	4.7-19	C	M	16%	94%
	Flow us gpm	Boom psi	Tip psi	Sprayer Speed (on 20" spacing) @ 7.5gpa	10gpa	12.5gpa	15gpa	DAM110-07 Tip 1	Tip 2	#44001-07 <141	<600
DAM110-07 30° & 50° Dual Angled ASSY PART# #44001-07	0.55	**30**	25	5.5-22	4.1-16	3.3-13	2.7-11	C	C	5%	84%
	0.60	**35**	29	5.9-24	4.4-18	3.6-14	3-12	C	C	6%	86%
	0.64	**40**	33	6.3-25	4.7-19	3.8-15	3.2-13	C	C	8%	88%
	0.68	**45**	37	6.7-27	5-20	4-16	3.4-13	C	C	9%	89%
	0.71	**50**	41	7.1-28	5.3-21	4.2-17	3.5-14	C	C	10%	90%
	0.78	**60**	50	7.7-31	5.8-23	4.6-19	3.9-15	C	C	11%	92%
	0.81	**65**	54	8.1-32	6-24	4.8-19	4-16	C	C	12%	92%
	0.84	**70**	58	8.4-33	6.3-25	5-20	4.2-17	C	M	12%	93%
	0.90	**80**	66	8.9-36	6.7-27	5.4-21	4.5-18	C	M	14%	93%
	Flow us gpm	Boom psi	Tip psi	Sprayer Speed (on 20" spacing) @ 8gpa	10gpa	12.5gpa	15gpa	DAM110-08 Tip 1	Tip 2	#44001-08 <141	<600
DAM110-08 30° & 50° Dual Angled ASSY PART# #44001-08	0.67	**35**	28	6.2-25	5-20	4-16	3.3-13	VC	C	5%	84%
	0.71	**40**	32	6.6-26	5.3-21	4.2-17	3.5-14	C	C	6%	86%
	0.75	**45**	36	7-28	5.6-22	4.5-18	3.7-15	C	C	7%	88%
	0.79	**50**	39	7.4-30	5.9-24	4.7-19	3.9-16	C	C	8%	89%
	0.87	**60**	47	8.1-32	6.5-26	5.2-21	4.3-17	C	C	10%	91%
	0.91	**65**	51	8.4-34	6.7-27	5.4-22	4.5-18	C	C	10%	92%
	0.94	**70**	55	8.7-35	7-28	5.6-22	4.7-19	C	M	11%	92%
	1.01	**80**	63	9.3-37	7.5-30	6-24	5-20	C	M	12%	93%

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
MC110-03		#44311-03		MC80-02		#44380-02	
Class	VMD	<141	<600	Class	VMD	<141	<600
C	406	6%	85%	C	336	7%	93%
C	388	7%	87%	C	320	9%	94%
C	372	8%	89%	C	307	10%	94%
C	357	9%	91%	C	296	11%	94%
C	345	9%	92%	C	286	13%	94%
C	323	11%	94%	M	270	15%	95%
C	313	11%	94%	M	263	15%	95%
C	304	12%	95%	M	257	16%	95%
C	288	13%	96%	M	247	18%	95%
MC110-03		#44311-03		SC80-03		#44280-03	
Class	VMD	<141	<600	Class	VMD	<141	<600
C	411	5%	84%	C	363	8%	88%
C	393	6%	87%	C	342	9%	89%
C	377	7%	89%	C	326	11%	90%
C	362	8%	90%	C	312	12%	91%
C	350	9%	91%	C	300	13%	91%
C	328	11%	93%	M	280	15%	92%
C	318	11%	94%	M	272	16%	92%
C	309	12%	94%	M	265	17%	93%
C	293	13%	95%	M	252	18%	93%
MC110-03		#44311-03		SC80-04		#44280-04	
Class	VMD	<141	<600	Class	VMD	<141	<600
C	417	5%	83%	C	370	5%	85%
C	399	6%	86%	C	353	7%	87%
C	383	7%	88%	C	337	8%	88%
C	368	8%	90%	C	324	9%	89%
C	356	9%	91%	C	312	10%	89%
C	334	10%	93%	C	291	12%	91%
C	324	11%	94%	C	282	13%	91%
C	315	11%	94%	M	274	13%	91%
C	299	12%	95%	M	259	15%	92%
MC110-04		#44311-04		SC80-04		#44280-04	
Class	VMD	<141	<600	Class	VMD	<141	<600
VC	427	4%	83%	C	358	6%	86%
C	409	5%	85%	C	343	8%	87%
C	393	6%	88%	C	329	9%	88%
C	378	7%	89%	C	317	10%	89%
C	354	8%	92%	C	297	11%	90%
C	343	8%	92%	C	288	12%	91%
C	333	9%	93%	M	279	13%	91%
C	314	10%	94%	M	264	14%	92%

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