WILGER
Combo-Jet Spray Tip Charts

Updated March 2022

WORLD CLASS SPRAYING COMPONENTS

Spray Tips

COMBO-JET® Drift Reduction

For More Information Visit

www.WILGER.net

Units: Metric (Litres/Hectare)

ISO 9001:2015 Certified Quality Management System Design

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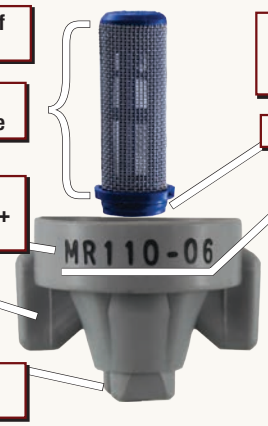
The COMBO-JET® Spray Tip Advantage



- Less plugging, as the path of flow always gets larger
- 40% longer strainer that snaps & seals into place
- SR / MR / DR / UR
  50% 75% 90% 90%+
  Drift Reduction Series
- Cap color matched to flow rate
- Super long-lasting stainless steel spray tip
- The most versatile spray tips for Pulse Width Modulation Systems (e.g. Capstan Pinpoint®/EVO®, Case AIM Command®, John Deere ExactApply®, IntelliSpray®,Raven Hawkeye®, & more)
- Spray tip & cap are held together as one piece
- Easy-to-read label
  (MR110-06 = MR Series, 110° tip, 0.6 US GPM flow rate)
- Best educational spray tip charts & tools provided to select the best spray tips
- Combo-Jet tips use a modern pre-orifice & closed chamber design that produces significantly less drift, creating solid mass droplets, for maximum spray velocity and more meaningful spray.

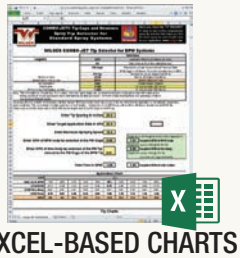
Without needing consistent air induction for drift reduction,
Combo-Jet spray tips are the preferred tip for Pulse Width Modulation (PWM) spraying systems.

*Capstan EVO®, Capstan Pinpoint®, Case AIM Command®, John Deere ExactApply®, IntelliSpray®, Raven Hawkeye® are not affiliated or owned by Wilger. They remain property of their respective owner(s).

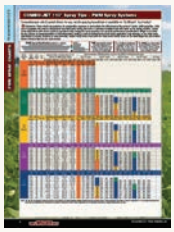
WILGER.NET has the most useful spray tip selection help in the world.

FREE WILGER TIP WIZARD
FREE SMARTPHONE APP

TIP WIZARD ONLINE


EXCEL-BASED CHARTS

PRINTED TIP CHARTS


WILGER CATALOG

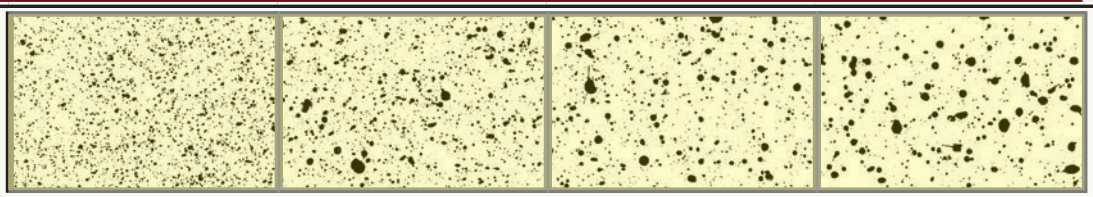
COMBO-JET® ER/SR/MR/DR/UR Spray Tips - *What is the difference?*

The sliding scale of droplet size means at any flow rate, you can match your desired spray quality.

Comparison Criteria	ER Series Extended Range	SR Series Small Reduction	MR Series Mid-Range Reduction	DR Series Drift Reduction	UR Series Drift Reduction
Spray Tip Design	Conventional Flat Fan	Pre-orifice Drift Reduction	Pre-orifice Drift Reduction	Pre-orifice Drift Reduction	Dual Chamber Drift Red.
Spray Quality @40PSI	Medium	Coarse	Extremely Coarse	Extremely Coarse	Ultra-Coarse
Droplet Size[1] @40PSI	Smallest (246µ VMD[1])	Medium (371µ VMD[1])	Large (474µ VMD[1])	Very Large (529µ VMD[1])	Ultra Coarse (633µ VMD[1])
% <141µ[2] % <600µ[3]	20% of volume < 141µ 94% of volume <600µ	8% of volume < 141µ 89% of volume <600µ	4% of volume < 141µ 74% of volume <600µ	2% of volume < 141µ 64% of volume <600µ	UR spray tips are specialty spray tips, designed for certain chemical applications that require exceptional drift reduction.
Drift Potential	Most likely to drift	Lower drift potential	Major reduction in drift	Very low drift potential	They are not be to be replaced with other spray tip series that are not approved to be on the chemical label. Always follow up-to-date label information.
Coverage	Best	Excellent	Very good	Good	Refer to chemical application label for maximum pressures, speeds and application information.

[1]Based on an XX110-06 nozzle @ 40 psi (2.75 BAR)
[2]Droplets smaller than 141µ are more likely to drift. 141µ is used as a standard for estimating driftable fines.
[3]Droplets smaller than 600µ provide better coverage. Droplets > 600µ consume more spray volume, reducing overall coverage.

More information available at www.wilger.net



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Selecting the Right Spray Quality & Droplet Size

Drift vs. Efficacy

Generally speaking, smaller droplets deposit on the target more effectively than larger droplets, but larger droplets will drift less. So, when balancing drift control and efficacy, ensure to follow chemical labels and guidelines to designate the required spray quality and droplet size.

Where to find target spray quality or droplet size?

Depending on the chemical, as well as the different methods and modes of applications, some chemical labels may have less/more information. In general, chemical labels will have a description of how it should be applied, in the form of an ASABE spray classification recommendation, or a minimum spray classification (e.g. Spray at least ASABE Coarse). Some chemical label will also stipulate which nozzles can be used.

Application Information:
- Water Volume: Minimum 22 L per acre. *Minimum volume requirement on chemical label*
- Nozzles and Pressure: 30 to 40 psi (210 to 275 kPa) when using conventional flat fan nozzles. *Reference max pressure for conventional nozzles like ER series. Try avoid conventional (non-drift reduction) spray tips.*

Low drift nozzles may require higher pressures for proper performance. Use a combination of nozzles and pressure designed to deliver thorough, even coverage of **ASABE coarse spray**. *Droplet spectrum recommendation for balance of drift & coverage.*

Example Spray Quality Chart by Type of Application

ASABE S-572.1 Classification Category	Color Code	Estimated VMD Range for Spray Quality*	Contact Insecticide & Fungicide	Systemic Insecticide & Fungicide	Contact Foliar Herbicide	Systemic Foliar Herbicide	Soil-Applied Herbicide	Incorporated Soil-Applied Herbicide	Fertilizer
Extremely Fine (XF)	Purple	Under 60							
Very Fine (VF)	Red	60-105							
Fine (F)	Orange	106-235							
Medium (M)	Yellow	236-340							
Coarse (C)	Blue	341-403							
Very Coarse (VC)	Green	404-502							
Extremely Coarse (XC)	White	503-665							
Ultra Coarse (UC)	Black	Over 665							

The above table provides general guidelines regarding droplet size and spray quality used in most spray applications.
It is always required that you carefully read and follow updated chemical manufacturers application label and instructions.

*NOTE: VMD range does not classify spray quality. Always ensure spray quality is followed first. VMD is a supplementary figure,and it is normal that nozzles with similar VMD can be classified into different spray qualities.

What about Multi-Tip Spraying? When to consider Double-Down & Angled Spraying

Potential problems with HIGH FLOW applications (15GPA+) with a single spray nozzle:
Spraying **high volume out of a single tip** can produce droplets that are 'too large" to be effective for coverage, which make for less effective spray application.

Using multiple spray tips at the same time can provide substantial gains in effective coverage into crops or applications that otherwise would be very difficult to cover; **however,** multi-tip spraying should not be used without reason.

A typical time to use ***Multi-Angle* spraying:**

For improved coverage on a vertical growing target (e.g. wheat) when you are needing to paint both sides of the plant with fungicide. (e.g. Fusarium Head Blight)

A typical time to use ***Double-Down* spraying:**

For high rate applications that rely on consistent coverage in a dense canopy. Use a nozzles to produce a meaningful mix of coarser and finer spray to hit different levels of the canopy.

Pairing already-owned nozzles to make a dual nozzle pair:
Much of the time, an operator already has 1-2 nozzles on the sprayer that could be stacked as a pair, so it is an effective way to use existing nozzles to improve spray application with very little cost.

A First-timer's look at Tip Wizard

WILGER TIP WIZARD

DOWNLOAD TIP WIZARD TODAY! It's FREE!

Download on the App Store | GET IT ON Google Play

TRY IT FREE AT WWW.WILGER.NET

Tip Wizard shows great info like:

Adaptable Charts
Adjusts to alternate units & spacing

Boom Pressure (PSI)

Speed Range

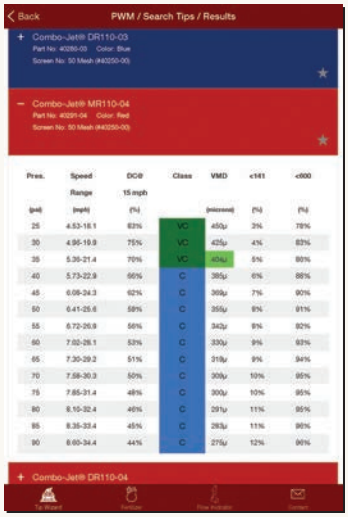
Duty Cycle (for PWM)

Spray Quality
For matching spray tips to chemical label requirements

[Advanced]
VMD (in µ)
Median Droplet Diameter for comparing series of the same tip size

% of Volume < 141µ
For an estimate of driftable fines in ideal conditions

% of Volume < 600µ
For a relative factor of small droplets in ideal conditions



Have More Questions?
Talk to your Wilger dealer, or call
CANADA 1 (833) 242-4121
USA 1 (877) 968-7695

Beginner's Guide to using Tip Wizard

1. **Choose** application units, spray system type, and search function (e.g. Search for tips)
2. **Enter** application rate, spraying speed[1], nozzle spacing, and spray tip angle[2].
   [1]Since PWM systems can modulate flow by changing the spray duration, enter the MAX typical spraying speed.
   [2]Spray tip angle required is based on nozzle spacing and boom height. Always maintain 100% overlap.
3. **Enter** target spray quality or target droplet size (microns).
   <This is where Tip Wizard gets more useful>
   Each chemical used in agricultural spraying has different spray quality requirements for best efficacy and also to maintain tolerable levels of driftable fines for spraying in ideal conditions. Using the droplet size (VMD) allows a more advanced way to filter through series of tips.

Where to find target spray quality or droplet size?

Depending on the chemical, as well as the different methods and modes of applications, some chemical labels may have less/more information. In general, chemical labels will have a description of how it should be applied, in the form of an ASABE spray classification recommendation, or a minimum spray classification (e.g. Spray at least ASABE Coarse)

Application Information:
- Water Volume: Minimum 22 L per acre. — *Minimum water requirement on chemical label by law*
- Nozzles and Pressure: 30 to 40 psi (210 to 275 kPa) when using conventional flat fan nozzles. — *Reference max pressure for conventional nozzles like ER series. Try avoid non-drift reduction tips.*

Low drift nozzles may require higher pressures for proper performance. Use a combination of nozzles and pressure designed to deliver thorough, even coverage of **ASABE coarse spray**. — *Droplet spectrum recommendation for balance of drift & coverage.*

Spray Categories as per ASABE S572.1 Classification
Extremely Fine | Very Fine | Fine | Medium | Coarse | Very Coarse | Extremely Coarse | Ultra Coarse

*For the example chemical label application information, we'd have a classification of COARSE droplet size to follow. Considering the mode of application as well as the action (e.g. systemic herbicide vs. contact herbicide), you can choose the spray quality that would suit **your conditions** as best as possible. REMEMBER: the larger the droplet size/VMD, the coarser the spray, resulting in less coverage.*

For advanced users, *using a VMD droplet size can further filter into a spray quality to make it easier to compare one series to another.*

For an example, we might find we typically have windier conditions, so try filter our results to stay around 375µ-400µ for our targeted droplet size.

4. **Select** the Best Spray Tip for your needs.
   Based on the operating speed, pressure, spray quality, and while also gauging the last few columns (VMD, % drift, % of small droplets for coverage), make a selection.

Picking Spray Tips for Auto-Rate Controlled Sprayers

1. **STEP 1: Size Your Tip** Since the application rate must be consistent, selecting a tip sized to the required rate over the actual sprayer speed range is critical. It is recommended to use Tip Wizard, as it will adjust the chart specifically for any application rate, not just common pairs of rate & speed.

   FOCUS ON: SPEED & PRESSURE for a required APPLICATION RATE

   Speed and pressure dictate a spray tip's ability to match a rate, and we must ensure our typical travel speed follows a reasonable pressure range. Meet your minimum speed (e.g. turning) within the operational pressure range. Having pressure too low in slow spots can lead to spotty coverage. *Once you have referenced your chart to find your applied rate to your speed, you will find a certain nozzle size will be most effective.*

   ***FOR PWM SPRAYERS (DUTY CYCLE):** Since you have more control of your pressure, your sprayer will typically allow for a wider selection of tip size. **Try to pick a size that allows a duty cycle of 60-80% at your typical sprayer speed**, allowing sufficient speed up/down.

2. **STEP 2: Filter to Your Spray Quality** Each chemical will require a nozzle spray quality (for labels that do not, consult chemical representative or agronomist, or general guide based on mode of action), since you have selected your tip size (e.g. 110-04) you can now find the best option within the series available in that nozzle size. The ER/SR/MR/DR/UR series differ based on spray quality & drift reduction.

   FOCUS ON: 'ASABE S572' SPRAY CLASSIFICATION

   Since the pressure is dictating the spray quality, you'll want to filter out any tip series that cannot apply the recommended spray quality.

   ***FOR PWM SPRAYERS (Pressure Selection):** Your spray quality can be changed with changing of sprayer pressure. This means instead of maintaining the required quality through a fixed operating pressure range, you can maintain a more flexible pressure range (provided duty cycle is OK).

3. **STEP 3: Double Check** It is worthwhile to review extra information provided for the spray tip, and re-evaluate if necessary. While the extra information in extrapolated from lab conditions without active ingredients, and cannot be considered actual, but it does lend to paint a picture of differences between series.

   [ADVANCED] FOCUS ON: Spray % <141µ, Spray % <600µ, VMD (µ)

   The extra columns reinforce the different spray qualities between different series, but also give the ability to make a rough spray plan for managing real life spraying conditions.

   Spray % <141µ: % of total spray that can be considered driftable fines. In ideal conditions, it would be reasonable to assume this spray is NOT going where you want it to go. Due to evaporation before absorption, off-target spray or inversion, very small droplets will not likely hit target. Ideally have a spray tip that minimizes driftable fines, BUT ensure you maintain an acceptable level of coverage.
   As speed, wind conditions & boom height increase, observed spray drift will increase substantially.

   Spray % <600µ: % of total spray that can be considered small droplets. As % of these useful droplets lowers, coverage is reduced.
   Consider it the 'other half' of the spray application, focusing on small droplets for coverage. Whereas you should maintain a low %<141µ, try to keep a %<600µ as high as possible, to maintain better coverage. As a very rough guideline with some usually chemical applications, aim for ~80+% <600µ for systemic applications; or ~90+% <600µ for contact applications; provided drift reduction levels are met and are satisfactory.

   VMD (µ): The volumetric median diameter is the middle-point of spray distribution, and can be used to estimate between different series of the same size spray tips (tested on the same laboratory equipment). It is not for comparing between brands of tips. If you are familiar with using a VMD in tip searches, you can use it as an intensive filter to further focus in on tips that might work for your application. For example, if you are happy with spray application with the MR110-04 at 50PSI (346µ VMD), the spray quality might be comparable to an SR110-06 at 50 PSI (337µ VMD). Bear in mind, VMD is used for educational purposes only, and should not dictate application.

For more Guides, Videos & Reading on proper nozzle selection, visit www.wilger.net

We aim to have all sorts of ways to help make the best educated decision in picking and using spray tips, so if there is something you find would be helpful, don't hesitate to reach out and ask. Often, we cannot provide EVERYTHING there is to know in our guides, as it can be overwhelming, so if you are wanting to get more information from an expert, contact WILGER.

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Picking Spray Tips for Pulse Width Modulation (PWM) Sprayers

[1]NOTE: PWM Spray systems differ in some respects (max flow capacity, pulse frequency (Hz), and other general variations in operation. This guide is a general guide that applies to most PWM spray systems, but for clarification would be based on a 10Hz solenoid, with a relative max flow capacity of 1.5 us gpm (this determines the relative pressure drop). Wilger does not own, produce, or have any ownership of PWM spray systems. All rights reserved by their owners.

1 **STEP 1: Size Your Tip** Since the application rate must be consistent, selecting a tip sized to the required rate over the actual sprayer speed range is critical. It is recommended to use Tip Wizard, as it will adjust the chart specifically for any application rate.
Since PWM sprayers have control of sprayer pressure, a PWM sprayer will typically allow for a wider selection of tip sizes.

FOCUS ON: SPEED, PRESSURE & DUTY CYCLE (DC%) for a required APPLICATION RATE

Speed, pressure and respective duty cycle dictate a spray tip's ability to match a rate, and we must ensure our typical travel speed follows a reasonable pressure range. Having duty cycles <50%[1] can degrade spray quality and consistency of spray swath, so it is always recommended to be above that.
Try to pick a size that allows a duty cycle of 60-80% at your typical sprayer speed, allowing sufficient speed up/down. If a nozzle is approaching 90-100% at your maximum sprayer speed at your highest pressures, this can be a good indication that a nozzle is sufficiently sized.

Before you look at any coverage/spray quality characteristics of a nozzle, you should have solidified which nozzle SIZE will work best first.

2 **STEP 2: Filter to Your Spray Quality** Each chemical will require a nozzle spray quality (for labels that do not, consult chemical representative or agronomist, or general guide based on mode of action), since you have selected your tip size (e.g. 110-04) you can now find the best option within the series available in that nozzle size. The ER/SR/MR/DR/UR series differ based on spray quality & drift reduction.

FOCUS ON: 'ASABE S572' SPRAY CLASSIFICATION

Since the pressure is dictating the spray quality, you'll want to filter out any tip series that cannot apply the recommended spray quality. Since PWM gives full control of sprayer pressure, this will usually filter the results to 1-2 nozzles within a size or series.

3 **STEP 3: Pick your most flexible spray nozzle** It is worthwhile to review extra information provided for the spray tip, and re-evaluate if necessary. While the extra information in extrapolated from lab conditions without active ingredients, and cannot be considered actual, but it does lend to paint a picture of differences between series.
The goal is to select a nozzle that can be applied at relatively moderate pressures (e.g. 50-60PSI) when spray conditions are ideal, giving a means to reduce pressure to 30-40PSI to have a 'drift reduction mode' that can be called upon when less ideal conditions arrive.

[ADVANCED] FOCUS ON: Spray % <141µ, Spray % <600µ, VMD (µ)

The extra columns reinforce the different spray qualities between different series, but also give the ability to make a rough spray plan for managing real life spraying conditions.
Spray % <141µ: % of total spray that can be considered driftable fines. In ideal conditions, it would be reasonable to assume this spray is NOT going where you want it to go. Due to evaporation before absorption, off-target spray or inversion, very small droplets will not likely hit target. Ideally have a spray tip that minimizes driftable fines, BUT ensure you maintain an acceptable level of coverage.
As speed, wind conditions & boom height increase, observed spray drift will increase substantially. With wind speeds of 12mph+, it can be expect to have driftable fine spray double. Windy conditions, higher drift sensitivity, and other environmental reasons are serious considerations for what might be an acceptable level of driftable fines.
By general chemical mode of action, you might have a reference point for % driftable fines, which might be generalized as:
Systemic Herbicides: Try maintain driftable fines <10%. (For very sensitive applications and herbicides, the requirement might go down to even 1.5-5%)
Contact Herbicides & Fungicides: Try maintain driftable fines <15%. This allows for a consistent and high level of coverage without losing a great deal to driftable fines. It is often part of a good balance between driftable fines and coverage.

Spray % <600µ: % of total spray that can be considered small droplets. As % of these useful droplets lowers, coverage is reduced.
Consider it the 'other half' of the spray application, focusing on small droplets for coverage. Whereas you should maintain a low %<141µ, try to keep a %<600µ as high as possible, to maintain better coverage. As a very rough guideline with some usually chemical applications, aim for ~80+% <600µ for systemic applications; or ~90+% <600µ for contact applications; provided drift reduction levels are met and are satisfactory.

VMD (µ): The volumetric median diameter is the middle-point of spray distribution, and can be used to estimate between different series of the same size spray tips (tested on the same laboratory equipment). It is not for comparing between brands of tips. If you are familiar with using a VMD in tip searches, you can use it as an intensive filter to further focus in on tips that might work for your application. For example, if you are happy with spray application with the MR110-04 at 50PSI (346µ VMD), the spray quality might be comparable to an SR110-06 at 50 PSI (337µ VMD). Bear in mind, VMD is used for educational purposes only, and should not dictate application.

Quick-Start Example: 100 LHA @ 22 kph, on 50cm spacing, with a PWM Spray System, applying SYSTEMIC HERBICIDE (glyphosate)

STEP 1: SIZE THE TIP: Focus on Pressure/Speed Range/Duty Cycle (Try maintain 60-80% duty cycle through full speed/pressure range)
*For the best option for a tip size, it'd likely be the **110-06 size.** (110-05 falls short of nozzle size, and 110-08 starts getting too large)*
It would apply 100 LHA, 22kph anywhere between 2-4 bar, allowing more than enough room into turn situations if turn compensation is available.

STEP 2: QUALIFY THE SPRAY
*Since the chemical label for glyphosate requires a 'even coverage of **ASABE COARSE droplets**', we will notice the ER110-06 is too fine, the SR fits just right, and the MR/DR are a fair bit coarser than required. We could also use a VMD of 400µ to filter out more.*
Note: The MR & DR series are coarser than required, but might be suitable for applicators who have to apply into more drift-sensitive areas.
For this example, we will single out the SR110-06 as our best tip series.

STEP 3: DOUBLE CHECK SR110-06 for max flexibility between 'IDEAL SPRAYING MODE' & 'DRIFT REDUCTION MODE'

Ideal Condition Spraying @ 14MPH:
@3.5bar: DUTY CYCLE: 75% ✓ Excellent
@3.5bar: COARSE Spray Class
@3.5bar: % < 141µ: ~9% ✓ Good
@3.5bar: % < 600µ: ~90% ✓ Excellent

Drift Sensitive Spraying @ 14MPH:
@2.5bar: DUTY CYCLE: 90% ✓ OK
@2.5bar: VERY COARSE Spray Class
@2.5bar: % < 141µ: ~6% ✓ Excellent
@2.5bar: % < 600µ: ~84% ✓ Very Good

Further considerations: Given the high level of coverage at higher pressures (3.5bar+), this same nozzle could be used for contact herbicides and fungicides to cover more applications.

Combo-Jet® SR110-06
Part No: 40287-06 Color: Grey
Screen No: Not Required

Pressure (psi)	Speed Range (mph)	DC (%) @ 14 mph	Class	VMD (µ)	<141 (%)	<600 (%)
25	3.3-13.2	>100	XC	466µ	3	76
30	3.6-14.4	97	VC	438µ	5	81
35	3.9-15.6	90	VC	414µ	6	84
40	4.2-16.6	84	C	393µ	7	87
45	4.4-17.6	80	C	375µ	8	88
50	4.7-18.6	75	C	358µ	9	90
55	4.9-19.5	72	C	344µ	10	91
60	5.1-20.4	69	C	330µ	11	92

Picking Nozzles for Dual-tip Spraying

Picking two spray tips isn't much different than a single tip. Since the sprayer has some means of adjust the flow to match a flow rate, simply pick a nozzle size that would supply the full rate, and then divide it into parts that would provide the same flow rate.
For example: ***If a 110-10 nozzle size is required for an application, suitable pairs would be like a '110-06 + 110-04' or '110-05 + 110-05', as the cumulative size would be able to apply the same rate as a single 110-10. For consistency, limit the size difference to two nozzle sizes to ensure consistent back pressure between both nozzles. (e.g. 110-08 +110-02 would not be ideal as the -08 might steal flow from the -02)***

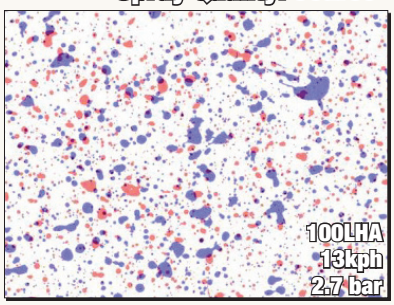
1. **STEP 1: Size Your Tip** Since the application rate must be consistent, selecting a tip sized to the required rate over the actual sprayer speed range is critical. It is recommended to use Tip Wizard, as it will adjust the chart specifically for any application rate, not just common pairs of rate & speed.

   FOCUS ON: SPEED & PRESSURE for a required APPLICATION RATE

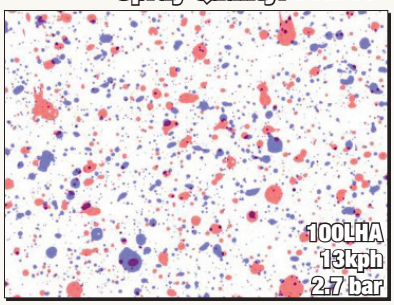
   ***FOR PWM SPRAYERS (DUTY CYCLE):** Since you have more control of your pressure, your sprayer will typically allow for a wider selection of tip size. **Try to pick a size that allows a duty cycle of 60-80% at your typical sprayer speed**, allowing sufficient speed up/down.

2. **STEP 2: Filter to Your Spray Quality** Each chemical will require a nozzle spray quality (for labels that do not, consult chemical representative or agronomist, or general guide based on mode of action), since you have selected your tip size (e.g. 110-04) you can now find the best option within the series available in that nozzle size. The ER/SR/MR/DR/UR series differ based on spray quality & drift reduction.

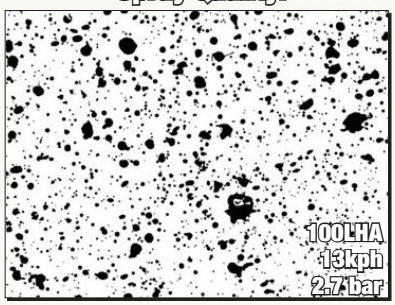
Example: MR110-04 + MR110-02
Spray Quality: Coarse*



Example: 2x SR110-03
Spray Quality: Coarse*



Single Tip Example: SR110-06
Spray Quality: Coarse*



***IMPORTANT: FOR PWM SPRAYERS (Pressure-drop through solenoid):** Depending on the solenoid used, for larger nozzle sizes (or cumulative nozzle sizes for double-down nozzles) there will be greater pressure drop. So, when considering spray quality for the smaller nozzles in a pair, verify the pressure drop for the cumulative size as it will differ from the nozzles individually. With the pressure drop factor, cross-reference the spray quality of the smaller nozzles in the pair for their more realistic spray quality (after pressure drop).

3. **STEP 3: Double Check** Just like the 'Quick-start guide to picking spray tips', refer to the extra information to qualify nozzles to ensure they will suit your application. Since the pair of nozzles are spraying a fraction of the total weight, there is some synergy between having one as a finer nozzle and the other coarser to produce a more meaningful mix of spray droplet sizes to get where they need to go.

   [ADVANCED] FOCUS ON: Spray % <141µ, Spray % <600µ, VMD (µ)
   The extra columns reinforce the different spray qualities between different series, but also give the ability to make a rough spray plan for managing real life spraying conditions.
   Spray % <141µ: % of total spray that can be considered driftable fines. If one nozzle is producing more driftable fines than the other, but when averaging based on the flow, you'd want to ensure you are still at a tolerable driftable fines % given the application.
   As speed, wind conditions & boom height increase, observed spray drift will increase substantially. This is especially the case with forward/backward facing nozzles.
   Spray % <600µ: % of total spray that can be considered small droplets. As % of these useful droplets lowers, coverage is reduced.
   Since you are splitting a single 'large' nozzle into two smaller nozzles, you should take advantage of getting a much higher %<600µ than possible with a single nozzle.
   VMD (µ): As VMD is the middle point in the distribution of spray, and a pair of nozzles will have a blended VMD when both are considered, simply qualify a tip based on acceptable spray quality first, and take note of the two nozzles and

EXAMPLE: 200LHA Glufosinate (Contact Herbicide), on 50cm spacing, traveling 19 kph, using a PWM spray system

STEP 1: Using Tip Wizard (or nozzle charts), a 110-125 nozzle size would suffice for travel speed and pressure range. The ER110-125 is shown as an example. With this 110-125 nozzle size, we know a nozzle pair adding to a ~110-125 would be suitable for the application rate. (e.g 110-06 + 110-06)
With this, split the nozzle size into portions and search for a '10 GPA' nozzle and '10GPA' nozzle for example, based on a fraction of total flow.
NOTE: There is extra pressure drop through a solenoid, so keep that in mind when selecting nozzles as the spray quality will differ from nozzles operating by themselves.

Combo-Jet® ER110-125
Part No: 40281-125 Color: Teal
Screen No: Not Required

Pressure (psi)	Speed Range (mph)	DC (%) @ 12 mph	Class	VMD (µ)	<141 (%)	<600 (%)
20	2.6-10.2	>100	XC	467µ	7	58
25	2.9-11.4	>100	XC	447µ	8	64
30	3.1-12.5	96	XC	430µ	8	68
35	3.4-13.5	89	XC	416µ	9	71
40	3.6-14.5	83	XC	403µ	9	73
45	3.8-15.3	78	XC	392µ	10	75
50	4.0-16.2	74	XC	383µ	10	77
55	4.2-17.0	71	VC	374µ	11	78
60	4.4-17.7	68	VC	366µ	11	79
65	4.6-18.4	65	VC	358µ	11	80

STEP 2: By chemical label, Glufosinate is to be applied as a ASABE medium spray quality or coarser. Qualify spray nozzles suitable for chemical label requirement.

STEP 3: Qualify nozzle pair based on spray quality, and pick based on most suitable % driftable fines (ideally <15%) and % coverage (ideally >90%)

Combo-Jet® SR110-06
Part No: 40287-06 Color: Grey
Screen No: Not Required

Pressure (psi)	Speed Range (mph)	DC (%) @ 12 mph	Class	VMD (µ)	<141 (%)	<600 (%)
25	2.7-11.0	>100	XC	466µ	3	76
30	3.0-12.0	100	VC	438µ	5	81
35	3.2-13.0	92	VC	414µ	6	84
40	3.5-13.9	86	C	393µ	7	87
45	3.7-14.7	82	C	375µ	8	88
50	3.9-15.5	77	C	358µ	9	90
55	4.1-16.3	74	C	344µ	10	91
60	4.2-17.0	71	C	330µ	11	92
65	4.4-17.7	68	C	318µ	11	93

Example Result:
Double-Down SR110-06 would provide upwards of 10%+ more volume made of small droplets, without increasing driftable fines.

The spray quality is within the 'coarse' spray quality, just outside MEDIUM spray quality. An ER series could be substituted to provide a mix of even finer spray into the dual nozzle setup.

Total flow would be the same as a 110-12, which would be nominally smaller than a 110-125.

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COMBO-JET ER Series Spray Tips

The ER series spray tip is a conventional flat fan nozzle, emphasizing consistent spray pattern with relatively fine spray. All ER nozzles are manufactured with a stainless steel tip.

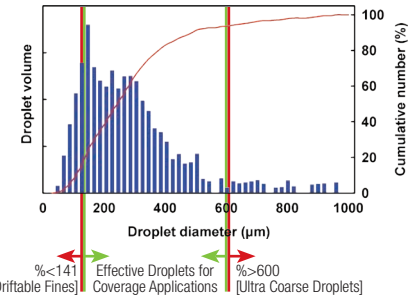
- Longer Lasting Stainless Tips
- Less Plugged Nozzles
- Perfect for PWM Sprayers
- Consistent Pattern at Lower PSI
- Solid Mass Spray Droplets
- Acid Resistant Nozzles

A DETAILED LOOK AT: **ER110-06**

Balance of Drift Control & Coverage

FINE COVERAGE — DRIFT REDUCTION

ER110-06 Droplet Distribution Example (40PSI)



ER series is designed to produce finer spray with a consistent pattern.

COMBO-JET® ER80° ASABE S572.1 Spray Quality Chart

Pressure (bar)	1.25	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6
ER80-01	F	F	F	F	F	F	F	F	F	F	F
ER80-015	F	F	F	F	F	F	F	F	F	F	F
ER80-02	F	F	F	F	F	F	F	F	F	F	F
ER80-025	M	M	F	F	F	F	F	F	F	F	F
ER80-03	M	M	F	F	F	F	F	F	F	F	F
ER80-04	M	M	M	M	F	F	F	F	F	F	F
ER80-05	C	C	M	M	M	M	M	M	F	F	F
ER80-06	C	C	C	C	C	M	M	M	M	M	M
ER80-08	XC	VC	C	M	M	F	F	F	F	F	F
ER80-10	XC	XC	XC	C	C	C	M	M	M	F	F
ER80-125		XC	XC	VC	C	C	C	C	C	M	M
ER80-15		XC	XC	XC	C	C	C	M	M	M	M
ER80-20		UC	XC	XC	XC	VC	C	C	C	C	M
ER80-25		UC	XC	XC	XC	VC	C	C	C	C	M
ER80-30		UC	UC	XC	XC	XC	XC	XC	VC	VC	C
ER80-40				XC	XC	XC	XC	XC	XC	VC	VC
ER80-50				XC	XC	XC	XC	XC	XC	VC	VC
ER80-60				XC	XC	XC	XC	XC	XC	VC	VC

COMBO-JET® ER110° ASABE S572.1 Spray Quality Chart

Pressure (bar)	1.25	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6
ER110-01	F	F	F	F	F	F	F	F	F	F	F
ER11-015	F	F	F	F	F	F	F	F	F	F	F
ER110-02	F	F	F	F	F	F	F	F	F	F	F
ER110-025	F	F	F	F	F	F	F	F	F	F	F
ER110-03	F	F	F	F	F	F	F	F	F	F	F
ER110-04	M	M	M	M	F	F	F	F	F	F	F
ER110-05	M	M	M	M	F	F	F	F	F	F	F
ER110-06	C	C	M	M	M	M	M	F	F	F	F
ER110-08	C	C	C	M	M	M	M	F	F	F	F
ER110-10	VC	C	C	C	C	M	M	M	M	F	F
ER110-125		XC	XC	XC	VC	C	C	C	C	C	C
ER110-15		XC	XC	XC	VC	C	C	C	C	C	C
ER110-20		UC	XC	XC	XC	XC	XC	VC	VC	C	C
ER110-25		UC	XC	XC	XC	XC	XC	VC	VC	C	C
ER110-30		UC	XC	XC	XC	XC	XC	XC	XC	VC	VC

COMBO-JET® ER Series Specifications

Approved for PWM Spray Systems
Compatible with all PWM Spray systems/Hz.

Operating Pressure
20-100PSI

Flat Fan Nozzle Type
Conventional Flat Fan

Nozzle Materials
Spray Tip: Stainless Steel
O-ring: FKM, 13mm x 3mm #40260-00 (viton avail.)
Cap: Glass-reinforced Polypropylene

ASABE Spray Classification

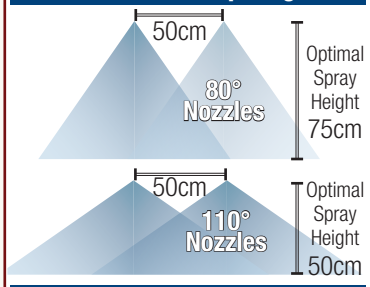
(ASABE S572.1 Standard)
Spray quality is categorized based on Dv0.1 and VMD droplet sizes. Objective testing data (by 3rd party), from spray spectrum recording equipment (without wind tunnel use), has been used to classify spray quality for this chart. Chart shown includes spray quality at tested data points as well as extrapolated data points.

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

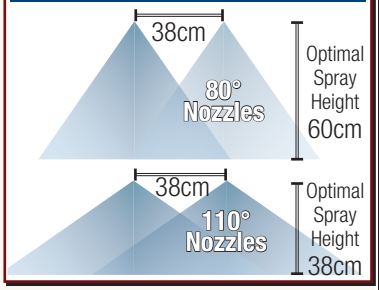
Tips sized up to 110-06 verified on Phase Doppler Particle Analyzer (PDPA); tips sized over 110-06 verified on Malvern.

Optimal Spray Tip Height

50cm Nozzle Spacing



38cm Nozzle Spacing



COMBO-JET SR Series Spray Tips

The SR series spray tip is a closed-chamber, pre-orifice drift reduction nozzle, emphasizing a first stage of drift reduction. The SR series balances excellent coverage spray with significant drift reduction upwards of 50%+.

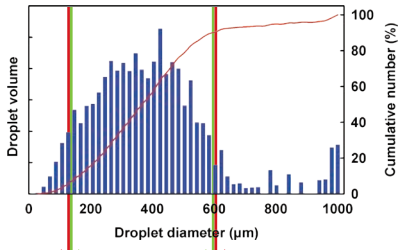
- Longer Lasting Stainless Tips
- Less Plugged Nozzles
- Perfect for PWM Sprayers
- Consistent Pattern at Lower PSI
- Solid Mass Spray Droplets
- Acid Resistant Nozzles

A DETAILED LOOK AT: **SR110-06**

Balance of Drift Control & Coverage

FINE COVERAGE — DRIFT REDUCTION

SR110-06 Droplet Distribution Example (40PSI)



%<141 [Driftable Fines] — Effective Droplets for Coverage Applications — %>600 [Ultra Coarse Droplets]

SR series droplet distribution balances excellent fine spray coverage while reducing driftable fines.

COMBO-JET® SR80° ASABE S572.1 Spray Quality Chart

Pressure (bar)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6
SR80-01	C	M	F	F	F	F	F	F	F	F
SR80-015	C	M	M	M	F	F	F	F	F	F
SR80-02	C	M	M	M	F	F	F	F	F	F
SR80-025	C	C	C	M	M	M	M	M	F	F
SR80-03	C	C	C	C	C	M	M	M	M	M
SR80-04	C	C	C	C	C	C	M	M	M	M
SR80-05	VC	C	C	C	C	C	C	C	M	M
SR80-06	XC	VC	VC	C	C	C	C	C	C	C
SR80-08	UC	UC	XC	XC	XC	XC	VC	VC	C	C
SR80-10	UC	UC	UC	XC	XC	XC	XC	XC	VC	VC
SR80-125	UC	UC	UC	XC	XC	XC	XC	XC	VC	VC
SR80-15	UC	UC	UC	UC	UC	XC	XC	XC	XC	XC
SR80-20	UC	UC	UC	UC	UC	XC	XC	XC	XC	XC
SR80-25	UC	UC	UC	XC	XC	XC	XC	XC	XC	XC
SR80-30		UC	UC	UC	XC	XC	XC	XC	XC	XC

COMBO-JET® SR110° ASABE S572.1 Spray Quality Chart

Pressure (bar)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6
SR11-015	M	M	F	F	F	F	F	F	F	F
SR110-02	M	M	F	F	F	F	F	F	F	F
SR110-025	M	M	M	M	F	F	F	F	F	F
SR110-03	C	C	C	C	M	M	M	M	F	F
SR110-04	C	C	C	C	M	M	M	M	M	M
SR110-05	VC	C	C	C	C	C	M	M	M	M
SR110-06	XC	VC	C	C	C	C	C	C	M	M
SR110-08	UC	XC	XC	XC	VC	C	C	C	C	C
SR110-10	UC	XC	XC	XC	XC	VC	C	C	C	C
SR110-125	UC	UC	XC	XC	XC	XC	VC	C	C	C
SR110-15	UC	UC	UC	UC	XC	XC	XC	XC	XC	XC
SR110-20	UC	UC	UC	XC	XC	XC	XC	XC	XC	VC
SR110-25	UC	UC	UC	XC	XC	XC	XC	XC	XC	VC

COMBO-JET® SR Series Specifications

Approved for PWM Spray Systems
Compatible with all PWM Spray systems/Hz.

Operating Pressure
25-100PSI

Flat Fan Nozzle Type
Closed-Chamber, Pre-Orifice Drift Reduction

Nozzle Materials
Spray Tip: Stainless Steel
O-ring: FKM, 13mm x 3mm #40260-00 (viton avail.)
Cap: Glass-reinforced Polypropylene

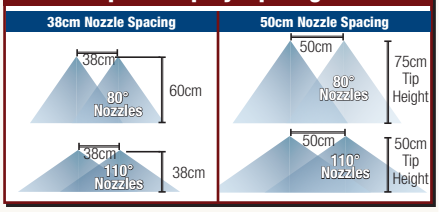
ASABE Spray Classification

(ASABE S572.1 Standard)
Spray quality is categorized based on Dv0.1 and VMD droplet sizes. Objective 3rd party testing data, from spray spectrum recording equipment (without wind tunnel use), has been used to classify spray quality for this chart. Chart shown includes spray quality at tested data points as well as extrapolated data points.

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

Tips sized up to 110-06 verified on Phase Doppler Particle Analyzer (PDPA); tips sized over 110-06 verified on Malvern.

Optimal Spray Tip Height



LERAP Ratings for SR Series

As of January 2021

SR110-05	★★★ 75% 1.0-1.5BAR	★★ 50% 1.6-3.0BAR

For the updated list of nozzles, visit www.wilger.net/LERAP
More information on LERAP certification, process, and the most up to date listing of approved nozzles and their ratings, is available from the Health and Safety Executive (HSE), also available online @
https://secure.pesticides.gov.uk/SprayEquipment

COMBO-JET® SR Pre-orifices - by nozzle size [Replacement Only]

-01	-015	-02	-025	-03	-04	-05	-06	-08	-10	-125	-15	-20	-25	-30
40285-01	40285-015	40285-01	40285-025	40285-03	40285-04	40285-05	40285-06	40285-08	40285-10	40285-125	40285-15	40285-20	40285-25	40285-30

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COMBO-JET MR Series Spray Tips

The MR series spray tip is a closed-chamber, pre-orifice drift reduction nozzle, emphasizing a second stage of drift reduction. The MR series balances great coverage spray with significant drift reduction upwards of 75%+.

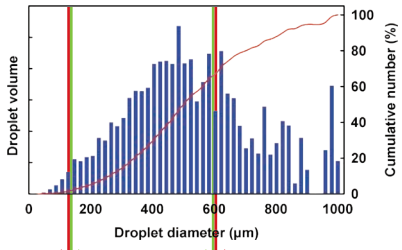
- Longer Lasting Stainless Tips
- Superior Drift Reduction
- Perfect for PWM Sprayers
- Consistent Pattern at Lower PSI
- Solid Mass Spray Droplets
- Acid Resistant Nozzles

A DETAILED LOOK AT: **MR110-06**

Balance of Drift Control & Coverage

FINE COVERAGE — DRIFT REDUCTION

MR110-06 Droplet Distribution Example (40PSI)



%<141 [Driftable Fines] — Effective Droplets for Coverage Applications — %>600 [Ultra Coarse Droplets]

MR series is designed to produce relatively coarse spray with minimal drift.

COMBO-JET® MR80° ASABE S572.1 Spray Quality Chart

Pressure (bar)	2	2.5	3	3.5	4	4.5	5	5.5	6
MR80-005	M	F	F	F	F	F	F	F	F
MR80-0067	F	F	F	F	F	F	F	F	F
MR80-01	M	F	F	F	F	F	F	F	F
MR80-015	C	C	C	M	M	M	M	F	F
MR80-02	C	C	C	C	M	M	M	M	M
MR80-025	VC	VC	C	C	C	C	C	C	C
MR80-03	VC	VC	C	C	C	C	C	C	C
MR80-04	VC	C	C	C	C	C	C	C	C
MR80-05	XC	XC	VC	VC	VC	C	C	C	C
MR80-06	XC	XC	XC	VC	VC	VC	VC	C	C
MR80-08	UC	UC	UC	XC	XC	XC	VC	VC	C
MR80-10	UC	UC	UC	UC	XC	XC	XC	XC	XC
MR80-125	UC	UC	UC	UC	UC	UC	XC	XC	XC
MR80-15	UC	UC	XC	XC	XC	XC	VC	VC	C
MR80-20	UC	UC	UC	UC	XC	XC	XC	XC	XC
MR80-25	UC	UC	UC	UC	UC	UC	UC	UC	XC
MR80-30	UC	UC	UC	UC	UC	UC	UC	UC	XC
MR80-40		UC	UC	UC	UC	XC	XC	XC	XC

COMBO-JET® MR110° ASABE S572.1 Spray Quality Chart

Pressure (bar)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6
MR11-015	C	C	C	M	M	M	F	F	F	F
MR110-02	C	C	C	M	M	M	M	F	F	F
MR110-025	C	C	C	C	C	C	M	M	M	M
MR110-03	VC	VC	C	C	C	C	C	C	C	M
MR110-04	XC	VC	C	C	C	C	C	C	C	M
MR110-05	XC	XC	VC	VC	VC	C	C	C	C	C
MR110-06	XC	XC	XC	XC	VC	VC	VC	VC	C	C
MR110-08	UC	UC	UC	XC	XC	XC	XC	XC	VC	C
MR110-10	UC	UC	UC	XC	XC	XC	XC	XC	VC	C
MR110-125	UC	UC	UC	UC	UC	UC	UC	UC	XC	XC
MR110-15	UC	UC	UC	UC	UC	UC	UC	UC	UC	UC
MR110-20	UC	UC	UC	UC	UC	UC	UC	UC	XC	XC

COMBO-JET® MR Series Specifications

Approved for PWM Spray Systems
Compatible with all PWM Spray systems/Hz.

Operating Pressure
30-100PSI

Flat Fan Nozzle Type
Closed-Chamber, Pre-Orifice Drift Reduction

Nozzle Materials
Spray Tip: Stainless Steel
Repl.O-ring: FKM, 13mm x 3mm #40260-00 (viton avail)
Cap: Glass-reinforced Polypropylene

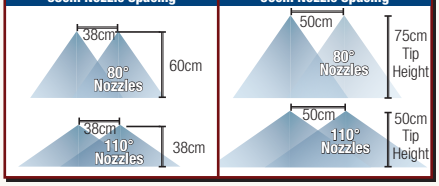
ASABE Spray Classification

(ASABE S572.1 Standard)
Spray quality is categorized based on Dv0.1 and VMD droplet sizes. Objective 3rd party testing data, from spray spectrum recording equipment (without wind tunnel use), has been used to classify spray quality for this chart. Chart shown includes spray quality at tested data points as well as extrapolated data points.

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

Tips sized up to 110-06 verified on Phase Doppler Particle Analyzer (PDPA); tips sized over 110-06 verified on Malvern.

Optimal Spray Tip Height



LERAP Ratings for MR Series

As of January 2021

MR110-04	★★★ 75% 1.0-2.5BAR	☆☆ 50% 2.6-3.5BAR
MR110-05	☆☆☆☆ 90% 1.0-1.5BAR	★★★ 75% 1.6-5.0BAR
MR110-06	☆☆☆☆ 90% 1.0-1.5BAR	★★★ 75% 1.6-5.0BAR

For the updated list of nozzles, visit www.wilger.net/LERAP
More information on LERAP certification, process, and the most up to date listing of approved nozzles and their ratings, is available from the Health and Safety Executive (HSE), also available online @
https://secure.pesticides.gov.uk/SprayEquipment

JKI Nozzle Ratings for MRs

Visit www.wilger.net for updated charts

COMBO-JET® MR Pre-orifices - by size [Replacement Only]

-005	-0067	-01	-015	-02	-025	-03	-04	-05	-06	-08	-10	-125	-15	-20	-25	-30	-40
40285-005	40285-007	40285-01	40285-015	40285-01	40285-025	40285-03	40285-04	40285-05	40285-06	40285-08	40285-10	40285-125	40285-15	40285-20	40285-25	40285-30	40285-40

COMBO-JET DR Series Spray Tips

The DR series spray tip is a closed-chamber, pre-orifice drift reduction nozzle, emphasizing a third stage of drift reduction. The DR series balances good coverage spray with extremely low driftable fines, upwards of a 90% reduction in driftable fines.

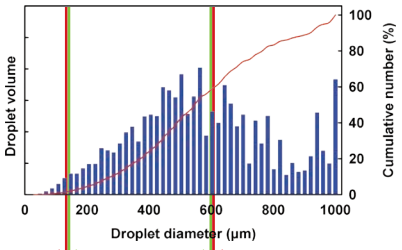
- Longer Lasting Stainless Tips
- Superior Drift Reduction
- Perfect for PWM Sprayers
- Consistent Pattern at Lower PSI
- Solid Mass Spray Droplets
- Acid Resistant Nozzles

A DETAILED LOOK AT: **DR110-06**

Balance of Drift Control & Coverage

FINE COVERAGE — DRIFT REDUCTION

DR110-06 Droplet Distribution Example (40PSI)



%<141 [Driftable Fines] — Effective Droplets for Coverage Applications — %>600 [Ultra Coarse Droplets]

DR series is designed to produce extremely coarse spray with very minimal drift.

COMBO-JET® DR80° ASABE S572.1 Spray Quality Chart

Pressure (bar)	2	2.5	3	3.5	4	4.5	5	5.5	6
DR80-005	C	M	M	F	F	F	F	F	F
DR80-0067	C	C	M	M	M	F	F	F	F
DR80-01	C	C	M	M	M	M	F	F	F
DR80-015	VC	VC	C	C	C	C	C	C	C
DR80-02	XC	VC	VC	VC	C	C	C	C	C
DR80-025	XC	VC	VC	VC	C	C	C	C	C
DR80-03	XC	XC	VC	VC	VC	C	C	C	C
DR80-04	XC	XC	XC	XC	XC	VC	VC	C	C
DR80-05	XC	XC	XC	XC	XC	XC	VC	VC	VC
DR80-06	XC	XC	XC	XC	XC	XC	XC	XC	VC
DR80-08	UC	UC	UC	UC	UC	UC	UC	UC	UC
DR80-10	UC	UC	UC	UC	UC	UC	UC	UC	UC
DR80-125	UC	UC	UC	UC	UC	UC	UC	UC	UC
DR80-15	UC	UC	UC	UC	UC	UC	UC	UC	UC
DR80-20	UC	UC	UC	UC	UC	UC	UC	UC	UC
DR80-25	UC	UC	UC	UC	UC	UC	UC	UC	UC
DR80-30	UC	UC	UC	UC	UC	UC	UC	UC	XC

COMBO-JET® DR110° ASABE S572.1 Spray Quality Chart

Pressure (bar)	2	2.5	3	3.5	4	4.5	5	5.5	6
DR11-015	C	C	C	C	C	C	M	M	M
DR110-02	VC	VC	C	C	C	C	C	C	C
DR110-025	VC	VC	C	C	C	C	C	C	C
DR110-03	XC	XC	VC	VC	C	C	C	C	C
DR110-04	XC	XC	VC	VC	VC	C	C	C	C
DR110-05	XC	XC	XC	XC	XC	XC	VC	VC	VC
DR110-06	XC	XC	XC	XC	XC	XC	XC	VC	VC
DR110-08	UC	UC	UC	UC	UC	UC	XC	XC	XC
DR110-10	UC	UC	UC	UC	UC	UC	UC	UC	UC
DR110-125	UC	UC	UC	UC	UC	UC	UC	UC	UC
DR110-15	UC	UC	UC	UC	UC	UC	UC	UC	UC

COMBO-JET® DR Pre-orifices - by tip size [Replacement Only]

-005	-0067	-01	-015	-02	-025	-03	-04	-05	-06	-08	-10	-125	-15	-20	-25	-30
40285-005	40285-007	40285-01	40285-015	40285-01	40285-025	40285-03	40285-04	40285-05	40285-06	40285-08	40285-10	40285-125	40285-15	40285-20	40285-25	40285-30

COMBO-JET® DR Series Specifications

Approved for PWM Spray Systems
Compatible with all PWM Spray systems/Hz.

Operating Pressure
30-100PSI

Flat Fan Nozzle Type
Closed-Chamber, Pre-Orifice Drift Reduction

Nozzle Materials
Spray Tip: Stainless Steel
Repl.O-ring: FKM, 13mm x 3mm #40260-00 (viton avail)
Cap: Glass-reinforced Polypropylene

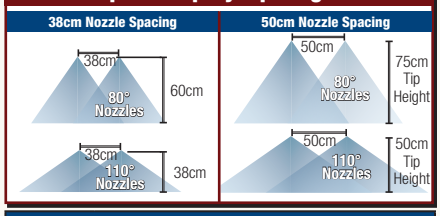
ASABE Spray Classification

(ASABE S572.1 Standard)
Spray quality is categorized based on Dv0.1 and VMD droplet sizes. Objective 3rd party testing data, from spray spectrum recording equipment (without wind tunnel use), has been used to classify spray quality for this chart. Chart shown includes spray quality at tested data points as well as extrapolated data points.

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

Tips sized up to 110-06 verified on Phase Doppler Particle Analyzer (PDPA); tips sized over 110-06 verified on Malvern.

Optimal Spray Tip Height



LERAP Ratings for DR Series
As of January 2021

DR110-025	★★★ 75% 1.0-2.5BAR	☆☆ 50% 2.6-3.5BAR	
DR110-03	☆☆☆☆ 90% 1.0-1.5BAR	★★★ 75% 1.6-2.5BAR	☆☆ 50% 2.6-3.5BAR
DR110-04	★★★ 75% 1.0-5.0BAR		
DR110-05	☆☆☆☆ 90% 1.0-1.5BAR	★★★ 75% 1.6-5.0BAR	
DR110-06	☆☆☆☆ 90% 1.0-3.0BAR	★★★ 75% 3.1-5.0BAR	

For the updated list of nozzles, visit www.wilger.net/LERAP
More information on LERAP certification, and the most up to date listing of tested nozzles, visit **https://secure.pesticides.gov.uk/SprayEquipment**

JKI Nozzle Ratings for DR Series
Visit www.wilger.net for updated charts

WWW.WILGER.NET

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COMBO-JET UR Series* Spray Tips

*U.S. Patent No. 10,603,681

The UR series spray tip is a dual-chamber, pre-orifice drift reduction nozzle, emphasizing the coarsest stage of drift reduction. The UR series is heavily suited to ultra-low driftable fines, emphasizing drift reduction over coverage.

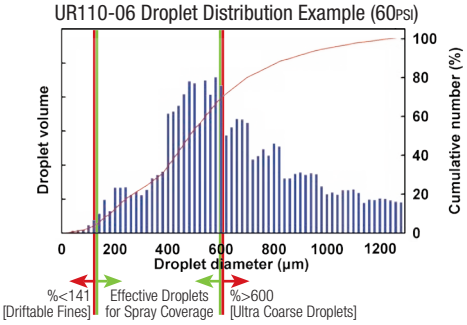
- Approved for Dicamba Mixes
- Ultra Low Spray Drift
- Perfect for PWM Sprayers
- Longer Lasting Stainless Tips
- Solid Mass Spray Droplets
- Acid Resistant Nozzles

A DETAILED LOOK AT: **UR110-06**

Balance of Drift Control & Coverage

FINE COVERAGE — DRIFT REDUCTION

UR110-06 Droplet Distribution Example (60PSI)



UR series is designed to produce ultra coarse spray with extremely little drift.

COMBO-JET® UR110° ASABE S572.1 Spray Quality Chart

Pressure (bar)	2	2.5	3	3.5	4	4.5	5	5.5	6
UR110-025	UC	UC	UC	UC	UC	XC	XC	XC	VC
UR110-03	UC	UC	UC	UC	UC	UC	UC	XC	XC
UR110-04	UC	UC	UC	UC	UC	UC	UC	UC	UC
UR110-05	UC	UC	UC	UC	UC	UC	UC	UC	UC
UR110-06	UC	UC	UC	UC	UC	UC	UC	UC	UC
UR110-08	UC	UC	UC	UC	UC	UC	UC	UC	UC
UR110-10	UC	UC	UC	UC	UC	UC	UC	UC	UC

COMBO-JET® UR Series* Pre-orifice Sets [Replacement only]

UR two-piece pre-orifices must be replaced with a new pair only. Correct orifices must be used for proper performance.

-025	-03	-04	-05	-06	-08	-10
40292-22	40292-23	40292-24	40292-25	40292-26	40292-28	40292-30

*U.S. Patent No. 10,603,681

COMBO-JET® UR Series Specifications

Approved for PWM Spray Systems
Compatible with all PWM Spray systems/Hz.

Operating Pressure
35-100PSI

Flat Fan Nozzle Type
Dual Closed-Chamber, Pre-Orifice Drift Reduction

Nozzle Materials
Spray Tip: Stainless Steel
Repl.O-ring: FKM, 13mm x 3mm #40260-00 (viton avail)
Cap: Glass-reinforced Polypropylene

ASABE Spray Classification

(ASABE S572.1 Standard)
Spray quality is categorized based on Dv0.1 and VMD droplet sizes. Objective 3rd party testing data, from spray spectrum recording equipment (without wind tunnel use), has been used to classify spray quality for this chart. Chart shown includes spray quality at tested data points as well as extrapolated data points.

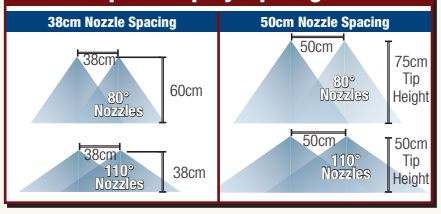
- Fine (F)
- Medium (M)
- Coarse (C)
- Very Coarse (VC)
- Extremely Coarse (XC)
- Ultra Coarse (UC)

UR Nozzles verified on Malvern.

JKI Ratings for UR Series
As of January 2021

UR110-04		75% 2.0-3.0BAR REF. G-2184	50% 4.0-6.0BAR REF. G-2184
UR110-05	90% 2.0BAR REF. G-2185	75% 3.0-6.0BAR REF. G-2185	
UR110-06	90% 2.0-3.0BAR REF. G-2189	75% 4.0-6.0BAR REF. G-2189	

Optimal Spray Tip Height



COMBO-JET 80° Spray Tips - Standard Sprayer Systems

Comprehensive rate & speed charts for any nozzle spacing/speed/rate is available on Tip Wizard. Try it today!

! Disclaimer: These charts are published for comparative purposes to demonstrate the differences in the series of Combo-Jet® spray tips. Data used to populate this chart is extrapolated from third party testing data from a controlled conditions test with water as the testing solution. Actual spray applications with active chemical ingredients may change the spray dynamics and spray tip performance specifications. Wilger is not liable for any misuse or misrepresentation of this information, leading to (but not limited to) incorrect spray application, crop damage, or any other harm. (Not limited to human, livestock or environmental). Always verify these charts with the most recent charts found on the www.wilger.net, and ALWAYS follow chemical label nozzle requirements.

Nozzle Size & Angle	Flow Rate L/min	Tip BAR	Application Rate in Litres/Hectare on 50cm Nozzle Spacing @ Sprayer Speed in km/h				VMD (Droplet Size in µ); %<141µ (Drift %); %<200µ (Drift %); %<600µ (Small Droplets)															
							ER80° Series				SR80° Series				MR80° Series				DR80° Series			
							Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600
80 -005 Nozzles	Flow L/min	Tip BAR	Application Speed (L/Ha on 50cm spacing) @ 20L/Ha	30L/Ha	40L/Ha	50L/Ha	ER80-005 Class	VMD	(40270-005) <141	<600	SR80-005 Class	VMD	(40288-005) <141	<600	MR80-005 Class	VMD	(40290-005) <141	<600	DR80-005 Class	VMD	(40280-005) <141	<600
	0.127	1.25	7.6	5.1	3.8	3.1	F	172	30%	100%												
	0.140	1.50	8.4	5.6	4.2	3.4	F	163	36%	100%					C	281	11%	100%	C	339	13%	100%
	0.161	2.00	9.7	6.4	4.8	3.9	F	150	45%	100%					M	240	16%	100%	C	282	15%	100%
	0.180	2.50	11.0	7.2	5.4	4.3	F	141	52%	100%					F	212	23%	100%	M	245	17%	100%
	0.197	3.00	12.0	7.9	5.9	4.7	F	133	58%	100%					F	192	28%	100%	M	218	22%	100%
	0.213	3.50	13.0	8.5	6.4	5.1	F	127	63%	100%					F	177	33%	100%	F	198	26%	100%
	0.228	4.00	14.0	9.1	6.8	5.5	F	122	67%	100%					F	164	38%	100%	F	181	30%	100%
	0.242	4.50	15.0	9.7	7.3	5.8	F	118	71%	100%					F	154	41%	100%	F	168	33%	100%
	0.255	5.00	15.0	10.0	7.6	6.1	F	115	74%	100%					F	145	45%	100%	F	157	36%	100%
	0.267	5.50	16.0	11.0	8.0	6.4	VF	112	77%	100%					F	138	48%	100%	F	148	38%	100%
	0.279	6.00	17.0	11.0	8.4	6.7	VF	109	80%	100%					F	131	51%	100%	F	140	41%	100%
80 -0067 Nozzles	Flow L/min	Tip BAR	Application Speed (L/Ha on 50cm spacing) @ 20L/Ha	30L/Ha	40L/Ha	50L/Ha	ER80-0067 Class	VMD	(40270-0067) <141	<600	SR80-0067 Class	VMD	(40288-0067) <141	<600	MR80-0067 Class	VMD	(40290-0067) <141	<600	DR80-0067 Class	VMD	(40280-0067) <141	<600
	0.171	1.25	10.0	6.8	5.1	4.1	F	207	18%	100%												
	0.187	1.50	11.0	7.5	5.6	4.5	F	193	24%	100%					M	249	13%	100%	C	360	11%	100%
	0.216	2.00	13.0	8.6	6.5	5.2	F	173	34%	100%					F	214	23%	100%	C	313	11%	100%
	0.241	2.50	14.0	9.7	7.2	5.8	F	159	41%	100%					F	191	30%	100%	C	280	12%	100%
	0.265	3.00	16.0	11.0	7.9	6.3	F	148	47%	100%					F	174	36%	100%	M	256	15%	100%
	0.286	3.50	17.0	11.0	8.6	6.9	F	140	53%	100%					F	161	41%	100%	M	237	17%	100%
	0.305	4.00	18.0	12.0	9.2	7.3	F	133	57%	100%					F	150	45%	100%	M	222	19%	100%
	0.324	4.50	19.0	13.0	9.7	7.8	F	127	61%	100%					F	141	49%	100%	F	209	21%	100%
	0.341	5.00	20.0	14.0	10.0	8.2	F	122	64%	100%					F	134	52%	100%	F	199	23%	100%
	0.358	5.50	21.0	14.0	11.0	8.6	F	118	68%	100%					F	127	55%	100%	F	190	24%	100%
	0.374	6.00	22.0	15.0	11.0	9.0	F	114	71%	100%					F	122	58%	100%	F	182	26%	100%
80 -01 Nozzles	Flow L/min	Tip BAR	Application Speed (L/Ha on 50cm spacing) @ 20L/Ha	30L/Ha	40L/Ha	50L/Ha	ER80-01 Class	VMD	(40270-01) <141	<600	SR80-01 Class	VMD	(40288-01) <141	<600	MR80-01 Class	VMD	(40290-01) <141	<600	DR80-01 Class	VMD	(40280-01) <141	<600
	0.255	1.25	15.0	10.0	7.6	6.1	F	181	26%	100%												
	0.279	1.50	17.0	11.0	8.4	6.7	F	171	31%	100%	C	279	29%	97%								
	0.322	2.00	19.0	13.0	9.7	7.7	F	158	40%	100%	M	238	29%	97%	M	222	22%	97%	C	316	9%	94%
	0.360	2.50	22.0	14.0	11.0	8.6	F	148	46%	100%	F	210	29%	97%	F	200	28%	97%	C	286	12%	95%
	0.395	3.00	24.0	16.0	12.0	9.5	F	140	52%	100%	F	190	29%	97%	F	184	32%	97%	M	264	15%	97%
	0.426	3.50	26.0	17.0	13.0	10.0	F	134	57%	100%	F	174	29%	98%	F	172	36%	97%	M	247	17%	98%
	0.456	4.00	27.0	18.0	14.0	11.0	F	129	61%	100%	F	162	29%	98%	F	161	40%	97%	M	233	19%	99%
	0.484	4.50	29.0	19.0	15.0	12.0	F	124	64%	100%	F	151	29%	98%	F	153	43%	97%	M	221	20%	100%
	0.510	5.00	31.0	20.0	15.0	12.0	F	121	67%	100%	F	143	29%	98%	F	146	45%	97%	F	211	22%	100%
	0.535	5.50	32.0	21.0	16.0	13.0	F	117	70%	100%	F	135	29%	98%	F	139	48%	97%	F	202	23%	100%
	0.558	6.00	34.0	22.0	17.0	13.0	F	115	73%	100%	F	129	29%	98%	F	134	50%	96%	F	194	24%	100%
80 -015 Nozzles	Flow L/min	Tip BAR	Application Speed (L/Ha on 50cm spacing) @ 35L/Ha	50L/Ha	60L/Ha	75L/Ha	ER80-015 Class	VMD	(40270-015) <141	<600	SR80-015 Class	VMD	(40288-015) <141	<600	MR80-015 Class	VMD	(40290-015) <141	<600	DR80-015 Class	VMD	(40280-015) <141	<600
	0.382	1.25	13.0	9.2	7.6	6.1	F	204	19%	100%												
	0.419	1.50	14.0	10.0	8.4	6.7	F	195	22%	100%	C	305	10%	94%								
	0.484	2.00	17.0	12.0	9.7	7.7	F	181	28%	100%	M	267	16%	95%	C	328	10%	94%	VC	422	4%	86%
	0.541	2.50	19.0	13.0	11.0	8.6	F	171	32%	100%	M	240	20%	96%	C	296	13%	96%	VC	392	5%	89%
	0.592	3.00	20.0	14.0	12.0	9.5	F	163	36%	100%	M	221	24%	96%	C	273	15%	97%	C	369	6%	91%
	0.640	3.50	22.0	15.0	13.0	10.0	F	157	39%	100%	F	206	27%	97%	M	254	17%	98%	C	351	7%	92%
	0.684	4.00	23.0	16.0	14.0	11.0	F	152	42%	100%	F	194	29%	97%	M	239	19%	98%	C	336	8%	93%
	0.725	4.50	25.0	17.0	15.0	12.0	F	147	44%	100%	F	183	32%	98%	M	227	21%	98%	C	323	8%	94%
	0.765	5.00	26.0	18.0	15.0	12.0	F	144	46%	100%	F	175	34%	98%	M	216	22%	99%	C	312	9%	95%
	0.802	5.50	27.0	19.0	16.0	13.0	F	140	48%	100%	F	167	36%	98%	F	207	23%	99%	C	303	10%	95%
	0.838	6.00	29.0	20.0	17.0	13.0	F	137	50%	100%	F	160	37%	98%	F	199	25%	99%	C	294	10%	96%
80 -02 Nozzles	Flow L/min	Tip BAR	Application Speed (L/Ha on 50cm spacing) @ 40L/Ha	50L/Ha	60L/Ha	70L/Ha	ER80-02 Class	VMD	(40270-02) <141	<600	SR80-02 Class	VMD	(40288-02) <141	<600	MR80-02 Class	VMD	(40290-02) <141	<600	DR80-02 Class	VMD	(40280-02) <141	<600
	0.510	1.25	15.0	12.0	10.0	8.7	F	188	26%	100%												
	0.558	1.50	17.0	13.0	11.0	9.6	F	181	29%	100%	C	287	10%	93%								
	0.645	2.00	19	15.0	13.0	11.0	F	172	34%	100%	M	260	15%	95%	C	329	8%	94%	XC	459	3%	80%
	0.721	2.50	22	17.0	14.0	12.0	F	164	37%	100%	M	241	19%	96%	C	307	10%	94%	VC	431	4%	83%
	0.790	3.00	24	19.0	16.0	14.0	F	159	40%	100%	M	227	22%	97%	C	290	12%	94%	VC	410	5%	85%
	0.853	3.50	26	20.0	17.0	15.0	F	154	42%	100%	F	215	24%	97%	C	276	14%	95%	VC	392	5%	87%
	0.912	4.00	27	22.0	18.0	16.0	F	150	44%	100%	F	206	27%	97%	M	265	15%	95%	C	378	6%	88%
	0.967	4.50	29	23.0	19.0	17.0	F	147	46%	100%	F	198	29%	98%	M	255	17%	95%	C	366	6%	89%
	1.019	5.00	31	24.0	20.0	17.0	F	144	47%	100%	F	191	30%	98%	M	247	18%	95%	C	355	7%	90%
	1.069	5.50	32	26.0	21.0	18.0	F	142	49%	100%	F	185	32%	98%	M	239	19%	95%	C	346	7%	91%
	1.117	6.00	34	27.0	22.0	19.0	F	139	50%	100%	F	179	33%	98%	M	233	20%	96%	C	338	8%	91%
80 -025 Nozzles	Flow L/min	Tip BAR	Application Speed (L/Ha on 50cm spacing) @ 50L/Ha	60L/Ha	70L/Ha	80L/Ha	ER80-025 Class	VMD	(40270-025) <141	<600	SR80-025 Class	VMD	(40288-025) <141	<600	MR80-025 Class	VMD	(40290-025) <141	<600	DR80-025 Class	VMD	(40280-025) <141	<600
	0.637	1.25	15	13.0	11.0	9.6	M	238	16%	100%												
	0.698	1.50	17	14.0	12.0	10.0	M	227	18%	100%	C	331	7%	90%								
	0.806	2.00	19	16.0	14.0	12.0	F	211	23%	100%	C	299	11%	92%	VC	430	4%	80%	XC	463	3%	77%
	0.901	2.50	22	18.0	15.0	14.0	F	199	26%	100%	C	277	14%	94%	VC	396	6%	83%	VC	440	4%	80%
	0.987	3.00	24	20.0	17.0	15.0	F	189	29%	100%	M	260	16%	95%	C	371	7%	86%	VC	421	5%	82%
	1.066	3.50	26	21	18.0	16.0	F	182	32%	100%	M	247	18%	95%	C	351	8%	87%	VC	406	5%	83%
	1.140	4.00	27	23	20.0	17.0	F	175	34%	100%	M	236	20%	96%	C	334	9%	88%	C	394	6%	84%
	1.209	4.50	29	24	21.0	18.0	F	170	36%	100%	M	226	21%	96%	C	320	10%	89%	C	383	6%	85%
	1.274	5.00	31	25	22.0	19.0	F	165	37%	100%	M	218	23%	97%	C	308	10%	90%	C	373	7%	86%
	1.336	5.50	32	27	23.0	20.0	F	161	39%	100%	F	211	24%	97%	C	298	11%	91%	C	365	7%	87%
	1.396	6.00	34	28	24	21.0	F	158	40%	100%	F	205	25%	97%	C	289	12%	91%	C	358	8%	88%

NOTE: [1]SR, MR, DR, UR spray tips include pre-orifice(s). Pre-orifices are not interchangeable between different spray tips of different series. [2]Shown application information is based on water @ 80°F in a controlled environment and should not be considered actual. Information is provided for comparison to other Combo-Jet® spray tips, for educational purposes only. Repeat testing results can vary.

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COMBO-JET 80° Spray Tips - Standard Sprayer Systems

Comprehensive rate & speed charts for any nozzle spacing/speed/rate is available on Tip Wizard. Try it today!

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.

Nozzle Size & Angle	Flow Rate L/min	Tip BAR	Application Rate in Litres/Hectare on 50cm Nozzle Spacing @ Sprayer Speed in km/h				VMD (Droplet Size in µ); %<141µ (Drift %); %<200µ (Drift %); %<600µ (Small Droplets)															
							ER80° Series				SR80° Series				MR80° Series				DR80° Series			
							Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600
	Flow L/min	Tip BAR	Application Speed (L/Ha on 50cm spacing) @ 60L/Ha	75L/Ha	100L/Ha	120L/Ha	ER80-03		(40270-03)		SR80-03		(40288-03)		MR80-03		(40290-03)		DR80-03		(40280-03)	
							Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600
80 -03 Nozzles	0.765	1.25	15	12.0	9.2	7.6	M	238	16%	99%												
	0.838	1.50	17	13.0	10.0	8.4	M	229	18%	99%	C	388	6%	87%								
	0.967	2.00	19	15	12.0	9.7	F	215	22%	99%	C	349	9%	89%	VC	437	4%	80%	XC	485	3%	71%
	1.081	2.50	22	17	13.0	11.0	F	205	25%	99%	C	321	11%	90%	VC	404	6%	84%	XC	458	4%	75%
	1.184	3.00	24	19	14.0	12.0	F	197	27%	99%	C	300	13%	91%	C	378	7%	86%	VC	437	5%	78%
	1.279	3.50	26	20	15.0	13.0	F	191	29%	99%	C	283	15%	92%	C	358	8%	88%	VC	420	5%	80%
	1.368	4.00	27	22	16	14.0	F	186	31%	99%	M	269	16%	93%	C	341	9%	89%	VC	406	6%	82%
	1.451	4.50	29	23	17	15.0	F	181	33%	99%	M	258	18%	93%	C	327	10%	90%	C	394	6%	84%
	1.529	5.00	31	24	18	15.0	F	177	34%	99%	M	248	19%	93%	C	315	10%	91%	C	384	7%	85%
	1.604	5.50	32	26	19	16.0	F	174	35%	99%	M	239	20%	94%	C	304	11%	92%	C	374	7%	86%
	1.675	6.00	34	27	20	17	F	170	36%	99%	M	232	21%	94%	C	295	12%	92%	C	366	8%	87%
	Flow L/min	Tip BAR	Application Speed (L/Ha on 50cm spacing) @ 75L/Ha	100L/Ha	125L/Ha	150L/Ha	ER80-04		(40270-04)		SR80-04		(40288-04)		MR80-04		(40290-04)		DR80-04		(40280-04)	
							Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600
80 -04 Nozzles	1.02	1.25	16	12	9.8	8.2	M	256	15%	99%												
	1.12	1.50	18	13	11.0	8.9	M	246	17%	99%	C	385	4%	84%								
	1.29	2.00	21	15	12	10.0	M	232	20%	99%	C	352	7%	87%	VC	424	5%	80%	XC	547	2%	61%
	1.44	2.50	23	17	14	12.0	M	221	23%	99%	C	327	9%	88%	C	397	7%	83%	XC	519	3%	66%
	1.58	3.00	25	19	15	13.0	F	212	25%	99%	C	306	11%	90%	C	376	8%	85%	XC	497	3%	70%
	1.71	3.50	27	20	16	14	F	205	26%	99%	C	289	12%	91%	C	359	9%	86%	XC	479	4%	72%
	1.82	4.00	29	22	18	15	F	200	28%	99%	C	274	13%	91%	C	345	10%	87%	XC	463	4%	75%
	1.93	4.50	31	23	19	15	F	195	29%	99%	M	260	14%	92%	C	333	11%	88%	VC	451	5%	76%
	2.04	5.00	33	24	20	16	F	190	30%	99%	M	248	15%	93%	C	322	11%	89%	VC	439	5%	78%
	2.14	5.50	34	26	21	17	F	187	31%	99%	M	238	16%	93%	C	313	12%	90%	C	429	5%	79%
	2.23	6.00	36	27	21	18	F	183	32%	99%	M	228	17%	93%	C	305	13%	91%	C	421	5%	80%
	Flow L/min	Tip BAR	Application Speed (L/Ha on 50cm spacing) @ 100L/Ha	125L/Ha	150L/Ha	175L/Ha	ER80-05		(40270-05)		SR80-05		(40288-05)		MR80-05		(40290-05)		DR80-05		(40280-05)	
							Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600
80 -05 Nozzles	1.27	1.25	15	12	10	8.7	C	303	10%	95%												
	1.40	1.50	17	13	11	9.6	C	290	12%	95%	VC	429	4%	79%								
	1.61	2.00	19	15	13	11	M	269	16%	95%	C	391	7%	82%	XC	508	3%	67%	XC	579	2%	55%
	1.80	2.50	22	17	14	12	M	254	19%	95%	C	362	9%	85%	XC	478	4%	71%	XC	550	2%	60%
	1.97	3.00	24	19	16	14	M	243	21%	95%	C	338	11%	86%	VC	455	5%	75%	XC	528	3%	64%
	2.13	3.50	26	20	17	15	M	234	23%	95%	C	318	12%	88%	VC	436	5%	77%	XC	510	3%	67%
	2.28	4.00	27	22	18	16	M	226	24%	95%	C	300	13%	89%	VC	421	6%	79%	XC	495	3%	69%
	2.42	4.50	29	23	19	17	M	219	26%	95%	C	285	14%	89%	C	407	6%	81%	XC	482	4%	71%
	2.55	5.00	31	24	20	17	F	214	27%	95%	C	271	15%	90%	C	396	7%	82%	VC	471	4%	73%
	2.67	5.50	32	26	21	18	F	208	28%	95%	M	259	16%	91%	C	386	7%	83%	VC	461	4%	74%
	2.79	6.00	34	27	22	19	F	204	29%	95%	M	247	17%	91%	C	376	7%	84%	VC	452	4%	75%
	Flow L/min	Tip BAR	Application Speed (L/Ha on 50cm spacing) @ 125L/Ha	150L/Ha	175L/Ha	200L/Ha	ER80-06		(40270-06)		SR80-06		(40288-06)		MR80-06		(40290-06)		DR80-06		(40280-06)	
							Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600
80 -06 Nozzles	1.53	1.25	15	12	10	9	C	328	11%	92%												
	1.68	1.50	16	13	11	10	C	316	13%	92%	XC	456	3%	76%								
	1.93	2.00	19	15	13	12	C	298	16%	91%	VC	423	5%	80%	XC	530	2%	63%	XC	600	1%	51%
	2.16	2.50	21	17	15	13	C	285	19%	91%	VC	400	6%	83%	XC	504	3%	68%	XC	575	2%	55%
	2.37	3.00	23	19	16	14	C	275	21%	91%	C	381	7%	85%	XC	483	4%	71%	XC	555	2%	58%
	2.56	3.50	25	20	18	15	M	266	22%	90%	C	367	8%	86%	VC	466	4%	74%	XC	538	2%	61%
	2.74	4.00	26	22	19	16	M	259	24%	90%	C	354	9%	88%	VC	452	5%	76%	XC	524	3%	63%
	2.90	4.50	28	23	20	17	M	253	25%	90%	C	344	9%	89%	VC	440	5%	77%	XC	512	3%	65%
	3.06	5.00	29	24	21	18	M	247	26%	90%	C	334	10%	89%	VC	429	5%	79%	XC	502	3%	66%
	3.21	5.50	31	26	22	19	M	243	27%	90%	C	326	10%	90%	C	420	6%	80%	XC	492	3%	68%
	3.35	6.00	32	27	23	20	M	238	28%	89%	C	319	11%	91%	C	411	6%	81%	VC	484	4%	69%
	Flow L/min	Tip BAR	Application Speed (L/Ha on 50cm spacing) @ 150L/Ha	200L/Ha	250L/Ha	300L/Ha	ER80-08		(40270-08)		SR80-08		(40288-08)		MR80-08		(40290-08)		DR80-08		(40280-08)	
							Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600
80 -08 Nozzles	2.04	1.25	16	12	10	8	XC	380	11%	85%												
	2.23	1.50	18	13	11	9	VC	356	13%	87%	UC	536	6%	49%								
	2.58	2.00	21	15	12	10	C	321	17%	90%	UC	495	7%	58%	UC	545	6%	63%	UC	623	3%	51%
	2.88	2.50	23	17	14	12	M	296	19%	92%	XC	463	9%	64%	UC	513	7%	67%	UC	596	4%	56%
	3.16	3.00	25	19	15	13	M	277	22%	93%	XC	437	10%	68%	UC	488	8%	71%	UC	575	4%	59%
	3.41	3.50	27	20	16	14	F	262	24%	94%	XC	414	10%	71%	XC	468	9%	73%	UC	557	5%	62%
	3.65	4.00	29	22	18	15	F	250	25%	95%	XC	395	11%	73%	XC	452	10%	75%	UC	543	5%	64%
	3.87	4.50	31	23	19	15	F	239	27%	95%	VC	378	12%	75%	XC	438	11%	77%	UC	530	5%	66%
	4.08	5.00	33	24	20	16	F	231	28%	96%	VC	363	12%	77%	VC	426	11%	79%	UC	519	6%	68%
	4.28	5.50	34	26	21	17	F	223	29%	96%	C	350	13%	78%	VC	415	12%	80%	UC	509	6%	69%
	4.47	6.00	36	27	21	18	F	216	30%	96%	C	337	13%	80%	C	405	12%	81%	UC	500	6%	70%
	Flow L/min	Tip BAR	Application Speed (L/Ha on 50cm spacing) @ 200L/Ha	250L/Ha	300L/Ha	350L/Ha	ER80-10		(40270-10)		SR80-10		(40288-10)		MR80-10		(40290-10)		DR80-10		(40280-10)	
							Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600
80 -10 Nozzles	2.55	1.25	15	12	10	9	XC	472	8%	77%												
	2.79	1.50	17	13	11	10	XC	446	9%	79%	UC	556	5%	45%								
	3.22	2.00	19	15	13	11	XC	409	12%	81%	UC	516	6%	54%	UC	550	5%	62%	UC	615	4%	52%
	3.60	2.50	22	17	14	12	C	382	13%	83%	UC	485	7%	60%	UC	524	6%	66%	UC	592	5%	56%
	3.95	3.00	24	19	16	14	C	361	15%	85%	XC	460	8%	65%	UC	504	6%	68%	UC	574	5%	58%
	4.26	3.50	26	20	17	15	C	345	16%	86%	XC	439	9%	68%	UC	487	7%	70%	UC	560	6%	61%
	4.56	4.00	27	22	18	16	M	331	17%	87%	XC	420	9%	70%	XC	473	7%	72%	UC	547	6%	63%
	4.84	4.50	29	23	19	17	M	319	18%	88%	XC	404	10%	72%	XC	461	8%	73%	UC	536	7%	64%
	5.10	5.00	31	24	20	17	M	309	19%	88%	XC	389	10%	74%	XC	451	8%	75%	UC	527	7%	65%
	5.35	5.50	32	26	21	18	F	300	20%	89%	VC	376	11%	76%	XC	441	9%	76%	UC	519	7%	67%
	5.58	6.00	34	27	22	19	F	293	21%	89%	VC	364	11%	77%	XC	433	9%	77%	UC	511	7%	68%

NOTE: [1]SR, MR, DR, UR spray tips include pre-orifice(s). Pre-orifices are not interchangeable between different spray tips of different series. [2]Shown application information is based on water @ 80°F in a controlled environment and should not be considered actual. Information is provided for comparison to other Combo-Jet® spray tips, for educational purposes only. Repeat testing results can vary.

COMBO-JET 80° Spray Tips - Standard Sprayer Systems

Nozzle Size & Angle	Flow Rate L/min	Tip BAR	Application Rate in Litres/Hectare on 50cm Nozzle Spacing @ Sprayer Speed in km/h				VMD (Droplet Size in µ); %<141µ (Drift %); %<200µ (Drift %); %<600µ (Small Droplets)																	
							ER80° Series				SR80° Series				MR80° Series				DR80° Series			
							Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600
80 -125 Nozzles	Flow	Tip	Application Speed (L/Ha on 50cm spacing) @				ER80-125		(40270-125)		SR80-125		(40288-125)		MR80-125		(40290-125)		DR80-125		(40280-125)	
	L/min	BAR	250L/Ha	300L/Ha	350L/Ha	400L/Ha	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600
	3.49	1.50	17	14	12	10	XC	448	10%	77%	UC	548	5%	48%								
	4.03	2.00	19	16	14	12	XC	416	11%	80%	UC	513	7%	54%	UC	588	5%	55%	UC	628	4%	49%
	4.51	2.50	22	18	15	14	VC	393	12%	82%	UC	486	8%	59%	UC	566	6%	59%	UC	605	4%	53%
	4.94	3.00	24	20	17	15	C	375	13%	84%	XC	464	8%	62%	UC	548	7%	61%	UC	587	5%	55%
	5.33	3.50	26	21	18	16	C	360	14%	85%	XC	446	9%	65%	UC	534	7%	63%	UC	572	5%	57%
	5.70	4.00	27	23	20	17	C	348	15%	86%	XC	429	10%	67%	UC	522	8%	65%	UC	560	6%	59%
	6.04	4.50	29	24	21	18	C	337	16%	87%	XC	415	10%	69%	UC	511	8%	67%	UC	549	6%	61%
	6.37	5.00	31	25	22	19	C	328	16%	88%	XC	403	11%	71%	XC	502	8%	68%	UC	539	6%	62%
	6.68	5.50	32	27	23	20	M	320	17%	88%	VC	391	11%	72%	XC	493	9%	69%	UC	531	6%	63%
	6.98	6.00	34	28	24	21	M	313	17%	89%	VC	381	12%	73%	XC	486	9%	70%	UC	523	7%	64%
80 -15 Nozzles	Flow	Tip	Application Speed (L/Ha on 50cm spacing) @				ER80-15		(40270-15)		SR80-15		(40288-15)		MR80-15		(40290-15)		DR80-15		(40280-15)	
	L/min	BAR	300L/Ha	400L/Ha	450L/Ha	500L/Ha	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600
	4.19	1.50	17	13	11	10	XC	452	8%	77%	UC	592	5%	40%								
	4.84	2.00	19	15	13	12	XC	416	10%	79%	UC	558	6%	47%	UC	517	7%	66%	UC	641	3%	47%
	5.41	2.50	22	16	14	13	XC	390	12%	80%	UC	531	6%	51%	UC	491	8%	69%	UC	616	3%	51%
	5.92	3.00	24	18	16	14	C	370	13%	81%	UC	509	6%	55%	XC	471	9%	71%	UC	596	3%	54%
	6.40	3.50	26	19	17	15	C	354	14%	82%	UC	491	7%	58%	XC	455	10%	73%	UC	580	4%	57%
	6.84	4.00	27	21	18	16	C	340	15%	83%	XC	475	7%	60%	XC	441	10%	75%	UC	566	4%	59%
	7.25	4.50	29	22	19	17	M	329	16%	84%	XC	460	7%	62%	XC	429	11%	76%	UC	554	4%	61%
	7.65	5.00	31	23	20	18	M	319	17%	84%	XC	448	8%	64%	VC	419	11%	77%	UC	544	5%	62%
	8.02	5.50	32	24	21	19	M	310	18%	85%	XC	436	8%	65%	VC	410	12%	78%	UC	534	5%	63%
	8.38	6.00	34	25	22	20	M	302	18%	85%	XC	426	8%	67%	C	402	12%	79%	UC	526	5%	64%
80 -20 Nozzles	Flow	Tip	Application Speed (L/Ha on 50cm spacing) @				ER80-20		(40270-20)		SR80-20		(40288-20)		MR80-20		(40290-20)		DR80-20		(40280-20)	
	L/min	BAR	400L/Ha	500L/Ha	600L/Ha	700L/Ha	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600
	5.58	1.50	17	13	11	10	UC	500	7%	68%	UC	592	5%	40%								
	6.45	2.00	19	15	13	11	XC	464	9%	73%	UC	555	5%	47%	UC	569	5%	58%	UC	633	3%	50%
	7.21	2.50	22	17	14	12	XC	438	10%	75%	UC	527	6%	52%	UC	537	6%	62%	UC	601	3%	54%
	7.90	3.00	24	19	16	14	XC	418	11%	77%	UC	504	6%	56%	UC	512	6%	65%	UC	575	4%	58%
	8.53	3.50	26	20	17	15	VC	402	12%	79%	UC	485	7%	59%	UC	492	7%	68%	UC	554	4%	61%
	9.12	4.00	27	22	18	16	C	388	13%	80%	XC	468	7%	61%	XC	476	8%	70%	UC	537	5%	63%
	9.67	4.50	29	23	19	17	C	376	13%	81%	XC	453	7%	63%	XC	461	8%	72%	UC	522	5%	65%
	10.19	5.00	31	24	20	17	C	366	14%	82%	XC	440	7%	65%	XC	449	8%	73%	UC	509	5%	67%
	10.69	5.50	32	26	21	18	C	357	15%	83%	XC	428	8%	66%	XC	438	9%	74%	UC	498	5%	68%
	11.17	6.00	34	27	22	19	M	349	15%	84%	XC	417	8%	67%	XC	428	9%	75%	UC	488	6%	69%
80 -25 Nozzles	Flow	Tip	Application Speed (L/Ha on 50cm spacing) @				ER80-25		(40270-25)		SR80-25		(40288-25)		MR80-25		(40290-25)		DR80-25		(40280-25)	
	L/min	BAR	500L/Ha	600L/Ha	700L/Ha	800L/Ha	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600
	6.98	1.50	17	14	12	10	UC	504	8%	69%	UC	547	5%	48%								
	8.06	2.00	19	16	14	12	XC	466	9%	72%	UC	515	5%	53%	UC	608	4%	54%	UC	662	2%	45%
	9.01	2.50	22	18	15	14	XC	439	11%	74%	UC	490	6%	57%	UC	579	4%	58%	UC	630	3%	50%
	9.87	3.00	24	20	17	15	XC	418	12%	76%	XC	470	7%	60%	UC	556	5%	61%	UC	605	3%	54%
	10.66	3.50	26	21	18	16	VC	401	13%	77%	XC	453	7%	62%	UC	537	5%	63%	UC	585	3%	57%
	11.40	4.00	27	23	20	17	C	387	13%	78%	XC	438	7%	64%	UC	521	5%	65%	UC	567	4%	59%
	12.09	4.50	29	24	21	18	C	374	14%	79%	XC	425	8%	66%	UC	508	6%	67%	UC	553	4%	61%
	12.74	5.00	31	25	22	19	C	364	15%	80%	XC	413	8%	67%	UC	496	6%	68%	UC	540	4%	63%
	13.36	5.50	32	27	23	20	C	355	15%	81%	XC	402	8%	68%	UC	486	6%	69%	UC	528	4%	64%
	13.96	6.00	34	28	24	21	M	347	16%	81%	XC	393	8%	69%	XC	477	6%	70%	UC	518	4%	66%
80 -30 Nozzles	Flow	Tip	Application Speed (L/Ha on 50cm spacing) @				ER80-30		(40270-30)		SR80-30		(40288-30)		MR80-30		(40290-30)		DR80-30		(40280-30)	
	L/min	BAR	600L/Ha	700L/Ha	800L/Ha	900L/Ha	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600
	8.38	1.50	17	14	13	11	UC	526	4%	65%	UC	550	4%	48%								
	9.67	2.00	19	17	15	13	UC	485	5%	69%	UC	513	5%	53%	UC	595	4%	54%	UC	661	2%	46%
	10.81	2.50	22	19	16	14	XC	456	7%	71%	UC	485	5%	57%	UC	567	4%	59%	UC	616	2%	52%
	11.84	3.00	24	20	18	16	XC	434	8%	73%	XC	464	6%	60%	UC	546	5%	62%	UC	581	3%	56%
	12.79	3.50	26	22	19	17	XC	416	8%	75%	XC	447	6%	62%	UC	528	5%	64%	UC	553	3%	60%
	13.68	4.00	27	23	21	18	XC	401	9%	76%	XC	433	6%	64%	UC	514	5%	66%	UC	530	3%	62%
	14.51	4.50	29	25	22	19	XC	388	10%	77%	XC	421	7%	66%	UC	501	5%	68%	UC	511	3%	65%
	15.29	5.00	31	26	23	20	VC	377	10%	78%	XC	410	7%	67%	UC	490	6%	69%	UC	494	4%	67%
	16.04	5.50	32	27	24	21	VC	367	11%	79%	XC	401	7%	69%	UC	480	6%	71%	UC	479	4%	68%
	16.75	6.00	34	29	25	22	C	358	11%	80%	XC	392	7%	70%	XC	471	6%	72%	XC	466	4%	70%

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COMBO-JET 110° Spray Tips - Standard Sprayer Systems

Comprehensive rate & speed charts for any nozzle spacing/speed/rate is available on Tip Wizard. Try it today!

! Disclaimer: These charts are published for comparative purposes to demonstrate the differences in the series of Combo-Jet® spray tips. Data used to populate this chart is extrapolated from third party testing data from a controlled conditions test with water as the testing solution. Actual spray applications with active chemical ingredients may change the spray dynamics and spray tip performance specifications. Wilger is not liable for any misuse or misrepresentation of this information, leading to (but not limited to) incorrect spray application, crop damage, or any other harm. (Not limited to human, livestock or environmental). Always verify these charts with the most recent charts found on the www.wilger.net, and ALWAYS follow chemical label nozzle requirements.

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.

Nozzle Size & Angle	Flow Rate L/min	Tip psi	Application Rate in Litres/Hectare on 50cm Nozzle Spacing @ Sprayer Speed in km/h				VMD (Droplet Size in µ); %<141µ (Drift %); %<600µ (Small Droplets)																	
							ER110° Series				SR110° Series				MR110° Series				DR110° Series					
							Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600		
	Flow L/min	Tip BAR	Application Speed (L/Ha on 50cm spacing) @ 20L/Ha	30L/Ha	40L/Ha	50L/Ha	ER110-01 Class	VMD	(40281-01) <141	<600														
110 -01 Nozzles	0.255	1.25	15.0	10.0	7.6	6.1	F	151	43%	100%														
	0.279	1.50	17.0	11.0	8.4	6.7	F	147	46%	100%														
	0.322	2.00	19.0	13.0	9.7	7.7	F	140	51%	100%														
	0.360	2.50	22.0	14.0	11.0	8.6	F	135	54%	100%														
	0.395	3.00	24.0	16.0	12.0	9.5	F	131	57%	100%														
	0.426	3.50	26.0	17.0	13.0	10.0	F	128	60%	100%														
	0.456	4.00	27.0	18.0	14.0	11.0	F	125	62%	100%														
	0.484	4.50	29.0	19.0	15.0	12.0	F	122	64%	100%														
	0.510	5.00	31.0	20.0	15.0	12.0	F	120	65%	100%														
	0.535	5.50	32.0	21.0	16.0	13.0	F	118	67%	100%														
	0.558	6.00	34.0	22.0	17.0	13.0	F	116	68%	100%														
	Flow L/min	Tip BAR	Application Speed (L/Ha on 50cm spacing) @ 35L/Ha	50L/Ha	60L/Ha	75L/Ha	ER110-015 Class	VMD	(40281-015) <141	<600	SR110-015 Class	VMD	(40287-015) <141	<600	MR110-015 Class	VMD	(40291-015) <141	<600	DR110-015 Class	VMD	(40286-015) <141	<600		
110 -015 Nozzles	0.382	1.25	13.0	9.2	7.6	6.1	F	155	39%	100%														
	0.419	1.50	14.0	10.0	8.4	6.7	F	151	42%	100%	F	233	19%	98%	C	379	6%	87%	VC	414	4%	88%		
	0.484	2.00	17.0	12.0	9.7	7.7	F	145	46%	100%	F	217	23%	98%	M	327	11%	94%	C	371	7%	91%		
	0.541	2.50	19.0	13.0	11.0	8.6	F	141	50%	100%	F	205	27%	98%	M	291	14%	97%	C	340	9%	93%		
	0.592	3.00	20.0	14.0	12.0	9.5	F	137	53%	100%	F	195	30%	98%	M	266	17%	98%	M	318	11%	94%		
	0.640	3.50	22.0	15.0	13.0	10.0	F	134	55%	100%	F	186	32%	98%	M	245	20%	99%	M	299	12%	95%		
	0.684	4.00	23.0	16.0	14.0	11.0	F	132	58%	100%	F	179	34%	98%	F	229	22%	99%	M	284	13%	96%		
	0.725	4.50	25.0	17.0	15.0	12.0	F	129	60%	100%	F	173	36%	98%	F	215	24%	99%	M	272	15%	96%		
	0.765	5.00	26.0	18.0	15.0	12.0	F	127	61%	100%	F	167	37%	98%	F	204	26%	99%	M	261	16%	97%		
	0.802	5.50	27.0	19.0	16.0	13.0	F	125	63%	100%	F	162	39%	98%	F	194	28%	100%	M	252	17%	97%		
	0.838	6.00	29.0	20.0	17.0	13.0	F	124	64%	100%	F	157	40%	98%	F	186	29%	100%	M	243	17%	97%		
	Flow L/min	Tip BAR	Application Speed (L/Ha on 50cm spacing) @ 40L/Ha	50L/Ha	60L/Ha	70L/Ha	ER110-02 Class	VMD	(40281-02) <141	<600	SR110-02 Class	VMD	(40287-02) <141	<600	MR110-02 Class	VMD	(40291-02) <141	<600	DR110-02 Class	VMD	(40286-02) <141	<600		
110 -02 Nozzles	0.510	1.25	15.0	12.0	10.0	8.7	F	176	30%	99%														
	0.558	1.50	17.0	13.0	11.0	9.6	F	170	33%	100%	F	233	19%	99%	C	361	7%	93%	VC	475	3%	75%		
	0.645	2.00	19	15.0	13.0	11.0	F	161	39%	100%	F	220	22%	99%	M	320	11%	95%	VC	436	4%	82%		
	0.721	2.50	22	17.0	14.0	12.0	F	154	43%	100%	F	210	25%	99%	M	291	14%	96%	VC	405	6%	86%		
	0.790	3.00	24	19.0	16.0	14.0	F	148	46%	100%	F	202	27%	99%	M	269	17%	97%	C	380	7%	88%		
	0.853	3.50	26	20.0	17.0	15.0	F	143	49%	100%	F	195	29%	99%	M	252	19%	98%	C	359	8%	90%		
	0.912	4.00	27	22.0	18.0	16.0	F	139	52%	100%	F	189	30%	99%	M	238	21%	98%	C	341	9%	91%		
	0.967	4.50	29	23.0	19.0	17.0	F	135	54%	100%	F	184	32%	99%	F	227	22%	98%	M	325	10%	92%		
	1.019	5.00	31	24.0	20.0	17.0	F	132	56%	100%	F	179	33%	99%	F	217	24%	98%	M	310	10%	93%		
	1.069	5.50	32	26.0	21.0	18.0	F	129	58%	100%	F	175	34%	99%	F	208	25%	99%	M	297	11%	94%		
	1.117	6.00	34	27.0	22.0	19.0	F	126	59%	100%	F	171	35%	99%	F	201	26%	99%	M	286	12%	94%		
	Flow L/min	Tip BAR	Application Speed (L/Ha on 50cm spacing) @ 50L/Ha	60L/Ha	70L/Ha	80L/Ha	ER110-025 Class	VMD	(40281-025) <141	<600	SR110-025 Class	VMD	(40287-025) <141	<600	MR110-025 Class	VMD	(40291-025) <141	<600	DR110-025 Class	VMD	(40286-025) <141	<600	UR110-025 Class	VMD
110 -025 Nozzles	0.637	1.25	15	13.0	11.0	9.6	F	196	28%	100%													(40292-025)	
	0.698	1.50	17	14.0	12.0	10.0	F	192	29%	100%	M	251	16%	98%										
	0.806	2.00	19	16.0	14.0	12.0	F	187	29%	100%	M	237	19%	98%	C	354	8%	90%	VC	438	5%	79%	UC	595
	0.901	2.50	22	18.0	15.0	14.0	F	182	30%	100%	F	227	22%	98%	M	330	10%	92%	VC	410	6%	84%	UC	557
	0.987	3.00	24	20.0	17.0	15.0	F	179	30%	100%	F	218	24%	98%	M	311	12%	94%	C	387	7%	87%	UC	527
	1.066	3.50	26	21	18.0	16.0	F	176	30%	100%	F	211	25%	98%	M	295	14%	95%	C	368	8%	90%	UC	502
	1.140	4.00	27	23	20.0	17.0	F	174	31%	100%	F	204	27%	98%	M	281	15%	96%	C	351	9%	91%	UC	480
	1.209	4.50	29	24	21.0	18.0	F	171	31%	100%	F	199	28%	98%	M	268	16%	96%	M	337	9%	92%	XC	460
	1.274	5.00	31	25	22.0	19.0	F	169	31%	100%	F	194	29%	98%	M	257	17%	97%	M	323	10%	93%	XC	443
	1.336	5.50	32	27	23.0	20.0	F	167	31%	100%	F	189	30%	98%	M	247	18%	97%	M	311	11%	94%	XC	427
	1.396	6.00	34	28	24	21.0	F	166	31%	100%	F	185	31%	98%	M	238	19%	97%	M	301	11%	95%	VC	412
	Flow L/min	Tip BAR	Application Speed (L/Ha on 50cm spacing) @ 60L/Ha	75L/Ha	100L/Ha	120L/Ha	ER110-03 Class	VMD	(40281-03) <141	<600	SR110-03 Class	VMD	(40287-03) <141	<600	MR110-03 Class	VMD	(40291-03) <141	<600	DR110-03 Class	VMD	(40286-03) <141	<600	UR110-03 Class	VMD
110 -03 Nozzles	0.765	1.25	15	12.0	9.2	7.6	F	201	25%	100%													(40292-03)	
	0.838	1.50	17	13.0	10.0	8.4	F	195	28%	100%	M	331	8%	93%										
	0.967	2.00	19	15	12.0	9.7	F	185	31%	100%	M	306	11%	95%	C	399	6%	86%	VC	484	3%	73%	UC	644
	1.081	2.50	22	17	13.0	11.0	F	177	34%	100%	M	287	14%	96%	C	371	8%	89%	VC	455	4%	78%	UC	606
	1.184	3.00	24	19	14.0	12.0	F	170	36%	100%	M	272	16%	96%	C	350	9%	91%	VC	432	5%	82%	UC	575
	1.279	3.50	26	20	15.0	13.0	F	165	37%	100%	M	258	17%	97%	M	331	10%	93%	VC	412	6%	84%	UC	549
	1.368	4.00	27	22	16	14.0	F	160	39%	100%	M	247	19%	97%	M	315	11%	94%	C	395	6%	86%	UC	527
	1.451	4.50	29	23	17	15.0	F	156	40%	100%	M	237	20%	97%	M	301	12%	95%	C	380	7%	88%	UC	507
	1.529	5.00	31	24	18	15.0	F	152	42%	100%	F	228	21%	98%	M	288	13%	96%	C	367	7%	89%	UC	489
	1.604	5.50	32	26	19	16.0	F	149	43%	100%	F	220	22%	98%	M	276	14%	96%	C	355	8%	90%	XC	473
	1.675	6.00	34	27	20	17	F	146	44%	100%	F	212	23%	98%	M	266	14%	96%	C	344	8%	91%	XC	458

NOTE: [1]SR, MR, DR, UR spray tips include pre-orifice(s). Pre-orifices are not interchangeable between different spray tips of different series. [2]Shown application information is based on water @ 80°F in a controlled environment and should not be considered actual. Information is provided for comparison to other Combo-Jet® spray tips, for educational purposes only. Repeat testing results can vary.

COMBO-JET 110° Spray Tips - Standard Sprayer Systems

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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.

Nozzle Size & Angle	Flow Rate L/min	Tip psi	Application Rate in Litres/Hectare on 50cm Nozzle Spacing @ Sprayer Speed in km/h				VMD (Droplet Size in µ); %<141µ (Drift %); %<600µ (Small Droplets)																	
							ER110° Series				SR110° Series				MR110° Series				DR110° Series					
							Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600		
	Flow L/min	Tip BAR	Application Speed (L/Ha on 50cm spacing) @ 75L/Ha	100L/Ha	125L/Ha	150L/Ha	ER110-04 Class	VMD	<141	<600	SR110-04 Class	VMD	<141	<600	MR110-04 Class	VMD	<141	<600	DR110-04 Class	VMD	<141	<600	UR110-04 Class	VMD
110 -04 Nozzles	1.019	1.25	16	12	9.8	8.2	M	244	17%	100%													(40292-04)	
	1.117	1.50	18	13	11.0	8.9	M	237	19%	100%	C	342	8%	92%										
	1.289	2.00	21	15	12	10.0	M	227	22%	100%	M	317	11%	94%	VC	421	5%	84%	XC	514	3%	68%	UC	650
	1.442	2.50	23	17	14	12.0	M	218	23%	100%	M	297	13%	95%	C	390	6%	88%	VC	483	4%	73%	UC	616
	1.579	3.00	25	19	15	13.0	F	211	25%	100%	M	281	14%	95%	C	365	7%	90%	VC	458	4%	77%	UC	588
	1.706	3.50	27	20	16	14	F	206	26%	100%	M	267	16%	96%	C	344	8%	92%	VC	436	5%	80%	UC	565
	1.824	4.00	29	22	18	15	F	201	28%	100%	M	256	17%	96%	M	326	9%	94%	VC	417	6%	82%	UC	545
	1.934	4.50	31	23	19	15	F	196	29%	100%	M	245	18%	97%	M	310	10%	94%	C	400	6%	84%	UC	526
	2.039	5.00	33	24	20	16	F	192	29%	100%	M	236	19%	97%	M	296	11%	95%	C	386	6%	85%	UC	511
	2.138	5.50	34	26	21	17	F	189	30%	100%	F	228	20%	97%	M	282	11%	96%	C	372	7%	87%	UC	496
	2.233	6.00	36	27	21	18	F	186	31%	100%	F	220	21%	97%	M	271	12%	96%	C	360	7%	87%	UC	483
110 -05 Nozzles	Flow L/min	Tip BAR	Application Speed (L/Ha on 50cm spacing) @ 100L/Ha	125L/Ha	150L/Ha	175L/Ha	ER110-05 Class	VMD	<141	<600	SR110-05 Class	VMD	<141	<600	MR110-05 Class	VMD	<141	<600	DR110-05 Class	VMD	<141	<600	UR110-05 Class	VMD
	1.27	1.25	15	12	10	8.7	M	253	17%	95%													(40292-05)	
	1.40	1.50	17	13	11	9.6	M	244	19%	95%	C	392	5%	88%										
	1.61	2.00	19	15	13	11	M	230	22%	95%	C	359	8%	91%	VC	491	3%	71%	XC	533	2%	62%	UC	664
	1.80	2.50	22	17	14	12	M	219	25%	95%	M	333	10%	93%	VC	459	4%	76%	XC	512	3%	66%	UC	633
	1.97	3.00	24	19	16	14	F	210	27%	95%	M	312	12%	94%	VC	432	5%	80%	VC	495	3%	69%	UC	610
	2.13	3.50	26	20	17	15	F	202	28%	95%	M	294	13%	95%	VC	410	6%	82%	VC	481	3%	72%	UC	590
	2.28	4.00	27	22	18	16	F	196	30%	95%	M	279	14%	96%	C	391	6%	84%	VC	469	3%	74%	UC	574
	2.42	4.50	29	23	19	17	F	190	31%	95%	M	265	16%	96%	C	374	7%	86%	VC	457	4%	75%	UC	560
	2.55	5.00	31	24	20	17	F	185	32%	95%	M	253	17%	97%	C	359	7%	87%	VC	448	4%	77%	UC	547
	2.67	5.50	32	26	21	18	F	180	33%	95%	M	242	17%	97%	C	345	8%	88%	VC	439	4%	78%	UC	536
	2.79	6.00	34	27	22	19	F	176	34%	95%	F	232	18%	97%	M	332	8%	89%	VC	431	4%	79%	UC	527
110 -06 Nozzles	Flow L/min	Tip BAR	Application Speed (L/Ha on 50cm spacing) @ 125L/Ha	150L/Ha	175L/Ha	200L/Ha	ER110-06 Class	VMD	<141	<600	SR110-06 Class	VMD	<141	<600	MR110-06 Class	VMD	<141	<600	DR110-06 Class	VMD	<141	<600	UR110-06 Class	VMD
	1.53	1.25	15	12	10	9	C	287	13%	94%													(40292-06)	
	1.68	1.50	16	13	11	10	C	278	15%	94%	VC	466	3%	76%										
	1.93	2.00	19	15	13	12	M	263	17%	94%	VC	421	6%	83%	XC	511	3%	67%	XC	569	2%	56%	UC	679
	2.16	2.50	21	17	15	13	M	251	19%	94%	C	386	8%	87%	VC	485	4%	72%	XC	541	2%	62%	UC	647
	2.37	3.00	23	19	16	14	M	242	21%	95%	C	358	9%	90%	VC	464	4%	76%	XC	518	3%	65%	UC	622
	2.56	3.50	25	20	18	15	M	234	22%	95%	M	334	10%	92%	VC	447	4%	78%	VC	499	3%	68%	UC	601
	2.74	4.00	26	22	19	16	M	227	24%	95%	M	314	12%	93%	VC	431	5%	80%	VC	482	3%	71%	UC	584
	2.90	4.50	28	23	20	17	F	221	25%	95%	M	295	13%	94%	VC	418	5%	82%	VC	468	3%	72%	UC	569
	3.06	5.00	29	24	21	18	F	216	26%	95%	M	279	14%	95%	VC	405	5%	84%	VC	454	4%	74%	UC	556
	3.21	5.50	31	26	22	19	F	211	27%	95%	M	264	14%	95%	C	394	6%	85%	VC	442	4%	75%	UC	545
	3.35	6.00	32	27	23	20	F	206	27%	95%	M	251	15%	96%	C	384	6%	86%	VC	432	4%	77%	UC	534
110 -08 Nozzles	Flow L/min	Tip BAR	Application Speed (L/Ha on 50cm spacing) @ 150L/Ha	200L/Ha	250L/Ha	300L/Ha	ER110-08 Class	VMD	<141	<600	SR110-08 Class	VMD	<141	<600	MR110-08 Class	VMD	<141	<600	DR110-08 Class	VMD	<141	<600	UR110-08 Class	VMD
	2.04	1.25	16	12	10	8	C	336	13%	90%													(40292-08)	
	2.23	1.50	18	13	11	9	C	319	15%	91%	VC	502	4%	56%										
	2.58	2.00	21	15	12	10	C	293	17%	93%	VC	458	6%	66%	XC	537	4%	52%	XC	620	3%	40%	UC	709
	2.88	2.50	23	17	14	12	M	273	19%	94%	VC	423	7%	72%	VC	499	5%	58%	XC	585	3%	45%	UC	668
	3.16	3.00	25	19	15	13	M	257	21%	95%	C	396	8%	76%	VC	470	5%	63%	XC	556	4%	49%	UC	637
	3.41	3.50	27	20	16	14	M	243	22%	95%	C	372	9%	79%	VC	444	6%	67%	XC	532	4%	52%	UC	612
	3.65	4.00	29	22	18	15	M	231	23%	96%	C	351	10%	81%	VC	422	6%	70%	XC	511	4%	54%	UC	591
	3.87	4.50	31	23	19	15	F	220	24%	96%	M	333	10%	83%	C	402	7%	72%	VC	493	5%	56%	UC	573
	4.08	5.00	33	24	20	16	F	211	25%	97%	M	317	11%	85%	C	385	7%	74%	VC	476	5%	58%	UC	557
	4.28	5.50	34	26	21	17	F	202	26%	97%	M	302	11%	86%	C	369	8%	76%	VC	461	5%	60%	UC	543
	4.47	6.00	36	27	21	18	F	194	27%	97%	M	289	12%	87%	C	355	8%	77%	VC	448	5%	61%	UC	531
110 -10 Nozzles	Flow L/min	Tip BAR	Application Speed (L/Ha on 50cm spacing) @ 200L/Ha	250L/Ha	300L/Ha	350L/Ha	ER110-10 Class	VMD	<141	<600	SR110-10 Class	VMD	<141	<600	MR110-10 Class	VMD	<141	<600	DR110-10 Class	VMD	<141	<600	UR110-10 Class	VMD
	2.55	1.25	15	12	10	9	VC	371	9%	87%													(40292-10)	
	2.79	1.50	17	13	11	10	C	354	11%	89%	XC	522	5%	51%										
	3.22	2.00	19	15	13	11	C	328	14%	90%	VC	476	6%	61%	XC	529	4%	52%	XC	612	5%	59%	UC	717
	3.60	2.50	22	17	14	12	C	307	16%	91%	VC	439	7%	68%	VC	493	5%	57%	XC	593	5%	56%	UC	675
	3.95	3.00	24	19	16	14	C	290	17%	92%	VC	410	8%	72%	VC	464	5%	61%	XC	577	5%	53%	UC	643
	4.26	3.50	26	20	17	15	M	276	19%	93%	C	385	9%	76%	VC	439	6%	64%	XC	564	6%	51%	UC	617
	4.56	4.00	27	22	18	16	M	264	20%	93%	C	363	9%	78%	VC	418	6%	67%	XC	553	6%	49%	UC	595
	4.84	4.50	29	23	19	17	M	253	21%	94%	C	344	10%	80%	C	400	6%	69%	XC	543	6%	47%	UC	577
	5.10	5.00	31	24	20	17	M	243	22%	94%	M	327	10%	82%	C	383	7%	71%	XC	534	6%	45%	UC	561
	5.35	5.50	32	26	21	18	F	234	23%	94%	M	312	11%	83%	C	368	7%	72%	XC	526	6%	43%	UC	546
	5.58	6.00	34	27	22	19	F	226	24%	95%	M	298	11%	84%	C	354	7%	73%	XC	518	6%	42%	UC	534
110 -125 Nozzles	Flow L/min	Tip BAR	Application Speed (L/Ha on 50cm spacing) @ 250L/Ha	300L/Ha	350L/Ha	400L/Ha	ER110-125 Class	VMD	<141	<600	SR110-125 Class	VMD	<141	<600	MR110-125 Class	VMD	<141	<600	DR110-125 Class	VMD	<141	<600		
	3.49	1.50	17	14	12	10	XC	430	8%	68%														
	4.03	2.00	19	16	14	12	XC	413	9%	71%	XC	524	4%	51%										
	4.51	2.50	22	18	15	14	XC	387	10%	76%	VC	476	5%	61%	XC	623	4%	38%	XC	651	3%	34%		
	4.94	3.00	24	20	17	15	VC	366	11%	79%	VC	439	6%	67%	XC	587	4%	44%	XC	626	4%	37%		
	5.33	3.50	26	21	18	16	C	349	12%	81%	VC	409	6%	71%	XC	558	5%	49%	XC	607	4%	40%		
	5.70	4.00	27	23	20	17	C	335	12%	83%	C	383	7%	75%	XC	533	5%	52%	XC	590	4%	42%		
	6.04	4.50	29	24	21	18	C	323	13%	84%	C	361	7%	77%	XC	511	5%	55%	XC	575	5%	44%		
	6.37	5.00	31	25	22	19	C	312	13%	86%	C	341	8%	79%	VC	492	5%	57%	XC	562	5%	45%		
	6.68	5.50	32	27	23	20	C	302	14%	86%	M	323	8%	81%	VC	475	6%	59%	XC	551	5%	47%		
	6.98	6.00	34	28	24	21	C	293	14%	87%	M	307	8%	82%	VC	460	6%	61%	XC	541	5%	48%		

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COMBO-JET 110° Spray Tips - Standard Sprayer Systems

Comprehensive rate & speed charts for any nozzle spacing/speed/rate is available on Tip Wizard. Try it today!

! Disclaimer: These charts are published for comparative purposes to demonstrate the differences in the series of Combo-Jet® spray tips. Data used to populate this chart is extrapolated from third party testing data from a controlled conditions test with water as the testing solution. Actual spray applications with active chemical ingredients may change the spray dynamics and spray tip performance specifications. Wilger is not liable for any misuse or misrepresentation of this information, leading to (but not limited to) incorrect spray application, crop damage, or any other harm. (Not limited to human, livestock or environmental). Always verify these charts with the most recent charts found on the www.wilger.net, and ALWAYS follow chemical label nozzle requirements.

Nozzle Size & Angle	Flow Rate L/min	Tip psi	Application Rate in Litres/Hectare on 50cm Nozzle Spacing @ Sprayer Speed in km/h				VMD (Droplet Size in µ); %<141µ (Drift %); %<600µ (Small Droplets)															
							ER110° Series				SR110° Series				MR110° Series				DR110° Series			
							Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600
110 -15 Nozzles	Flow L/min	Tip BAR	Application Speed (L/Ha on 50cm spacing) @ 300L/Ha	400L/Ha	450L/Ha	500L/Ha	ER110-15		(40281-15)		SR110-15		(40287-15)		MR110-15		(40291-15)		DR110-15		(40286-15)	
	L/min	BAR					Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600
	4.19	1.50	17	13	11	10	XC	429	9%	66%												
	4.84	2.00	19	15	13	12	XC	401	10%	71%	XC	543	5%	50%	XC	612	4%	40%				
	5.41	2.50	22	16	14	13	XC	379	11%	74%	XC	510	5%	56%	XC	586	4%	44%	XC	636	4%	44%
	5.92	3.00	24	18	16	14	VC	361	12%	77%	VC	483	6%	60%	XC	564	5%	47%	XC	614	4%	47%
	6.40	3.50	26	19	17	15	C	346	13%	79%	VC	460	6%	64%	XC	546	5%	49%	XC	595	4%	50%
	6.84	4.00	27	21	18	16	C	333	14%	80%	VC	441	7%	67%	XC	530	5%	51%	XC	579	4%	52%
	7.25	4.50	29	22	19	17	C	322	14%	82%	VC	423	7%	69%	XC	517	5%	53%	XC	565	4%	54%
	7.65	5.00	31	23	20	18	C	311	15%	83%	VC	407	7%	71%	XC	504	5%	54%	XC	552	4%	56%
	8.02	5.50	32	24	21	19	C	302	15%	84%	C	393	8%	72%	VC	493	5%	56%	XC	540	5%	57%
	8.38	6.00	34	25	22	20	C	294	16%	84%	C	380	8%	74%	VC	483	5%	57%	XC	530	5%	59%
110 -20 Nozzles	Flow L/min	Tip BAR	Application Speed (L/Ha on 50cm spacing) @ 400L/Ha	500L/Ha	600L/Ha	700L/Ha	ER110-20		(40281-20)		SR110-20		(40287-20)		MR110-20		(40291-20)					
	L/min	BAR					Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600				
	5.58	1.50	17	13	11	10	UC	488	7%	58%												
	6.45	2.00	19	15	13	11	XC	457	8%	63%	XC	522	6%	54%	XC	598	4%	42%				
	7.21	2.50	22	17	14	12	XC	433	8%	67%	VC	492	6%	60%	XC	569	5%	46%				
	7.90	3.00	24	19	16	14	XC	413	9%	70%	VC	467	7%	64%	XC	547	5%	49%				
	8.53	3.50	26	20	17	15	XC	397	9%	72%	VC	446	7%	67%	XC	527	6%	52%				
	9.12	4.00	27	22	18	16	XC	383	10%	74%	VC	428	8%	70%	XC	511	6%	54%				
	9.67	4.50	29	23	19	17	VC	370	10%	75%	VC	412	8%	72%	VC	496	6%	56%				
	10.19	5.00	31	24	20	17	VC	359	10%	76%	C	398	8%	74%	VC	483	6%	57%				
	10.69	5.50	32	26	21	18	C	348	11%	78%	C	385	8%	75%	VC	471	7%	59%				
	11.17	6.00	34	27	22	19	C	339	11%	79%	C	373	9%	77%	VC	460	7%	60%				
110 -25 Nozzles	Flow L/min	Tip BAR	Application Speed (L/Ha on 50cm spacing) @ 500L/Ha	600L/Ha	700L/Ha	800L/Ha	ER110-25		(40281-25)		SR110-25		(40287-25)									
	L/min	BAR					Class	VMD	<141	<600	Class	VMD	<141	<600								
	6.98	1.50	17	14	12	10	UC	486	6%	57%												
	8.06	2.00	19	16	14	12	XC	456	7%	64%	XC	507	6%	55%								
	9.01	2.50	22	18	15	14	XC	433	7%	69%	VC	480	6%	60%								
	9.87	3.00	24	20	17	15	XC	414	8%	72%	VC	458	7%	64%								
	10.66	3.50	26	21	18	16	XC	397	8%	75%	VC	439	7%	66%								
	11.40	4.00	27	23	20	17	XC	383	8%	77%	VC	423	8%	68%								
	12.09	4.50	29	24	21	18	VC	371	8%	78%	VC	408	8%	70%								
	12.74	5.00	31	25	22	19	VC	360	8%	80%	C	396	8%	72%								
	13.36	5.50	32	27	23	20	C	350	8%	81%	C	384	8%	73%								
	13.96	6.00	34	28	24	21	C	341	9%	82%	C	373	9%	74%								
110 -30 Nozzles	Flow L/min	Tip BAR	Application Speed (L/Ha on 50cm spacing) @ 600L/Ha	700L/Ha	800L/Ha	900L/Ha	ER110-30		(40281-30)													
	L/min	BAR					Class	VMD	<141	<600												
	8.38	1.50	17	14	13	11	UC	498	5%	56%												
	9.67	2.00	19	17	15	13	XC	469	6%	61%												
	10.81	2.50	22	19	16	14	XC	447	7%	64%												
	11.84	3.00	24	20	18	16	XC	429	7%	66%												
	12.79	3.50	26	22	19	17	XC	413	8%	68%												
	13.68	4.00	27	23	21	18	XC	400	8%	70%												
	14.51	4.50	29	25	22	19	XC	388	9%	71%												
	15.29	5.00	31	26	23	20	XC	377	9%	72%												
	16.04	5.50	32	27	24	21	VC	368	9%	73%												
	16.75	6.00	34	29	25	22	VC	359	10%	74%												

COMBO-JET 80° Spray Tips - PWM Spray Systems

Comprehensive rate & speed charts for any nozzle spacing/speed/rate is available on Tip Wizard. Try it today!

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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.

Nozzle Size & Angle	Flow Rate L/min	Boom BAR	Tip BAR	Application Rate - Litres/Hectare on 50cm Spacing w/ PWM Sprayer System @ Sprayer Speed (25%-100% Duty Cycle) - kph				Spray Classification; VMD (Droplet Size in µ); %<141µ (Drift %); %<600µ (Small Droplets)															
								ER80° Series				SR80° Series				MR80° Series				DR80° Series			
								Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600
80 -005 Nozzles	Flow L/min	Boom BAR	Tip BAR	Application Speed (L/Ha on 50cm spacing) @ 20L/Ha	30L/Ha	40L/Ha	50L/Ha	ER80-005 (40270-005)				SR80-005 (40288-005)				MR80-005 (40290-005)				DR80-005 (40280-005)			
								Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600
	0.127	1.25	1.25	1.9-7.6	1.3-5.1	1-3.8	0.8-3.1	F	172	30%	100%												
	0.140	1.50	1.50	2.1-8.4	1.4-5.6	1.1-4.2	0.9-3.4	F	163	36%	100%												
	0.161	2.00	2.00	2.4-9.7	1.6-6.4	1.2-4.8	1-3.9	F	150	45%	100%					M	240	16%	100%	C	282	10%	100%
	0.180	2.50	2.50	2.8-11	1.8-7.2	1.4-5.4	1.1-4.3	F	141	52%	100%					F	212	23%	100%	M	245	17%	100%
	0.197	3.00	3.00	3-12	2-7.9	1.5-5.9	1.2-4.7	F	133	58%	100%					F	192	28%	100%	M	218	22%	100%
	0.213	3.50	3.50	3.3-13	2.1-8.5	1.6-6.4	1.3-5.1	F	127	63%	100%					F	177	33%	100%	F	198	26%	100%
	0.228	4.00	4.00	3.5-14	2.3-9.1	1.7-6.8	1.4-5.5	F	122	67%	100%					F	164	38%	100%	F	181	30%	100%
	0.242	4.50	4.50	3.8-15	2.4-9.7	1.8-7.3	1.5-5.8	F	118	71%	100%					F	154	41%	100%	F	168	33%	100%
	0.255	5.00	5.00	3.8-15	2.5-10	1.9-7.6	1.5-6.1	F	115	74%	100%					F	145	45%	100%	F	157	36%	100%
	0.267	5.50	5.50	4-16	2.8-11	2-8	1.6-6.4	F	112	77%	100%					F	138	48%	100%	F	148	38%	100%
	0.279	6.00	6.00	4.3-17	2.8-11	2.1-8.4	1.7-6.7	F	109	80%	100%					F	131	51%	100%	F	140	41%	100%
80 -0067 Nozzles	Flow L/min	Boom BAR	Tip BAR	Application Speed (L/Ha on 50cm spacing) @ 20L/Ha	30L/Ha	40L/Ha	50L/Ha	ER80-0067 (40270-0067)				SR80-0067 (40288-0067)				MR80-0067 (40290-0067)				DR80-0067 (40280-0067)			
								Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600
	0.171	1.25	1.25	2.5-10	1.7-6.8	1.3-5.1	1-4.1	F	207	18%	100%												
	0.187	1.50	1.50	2.8-11	1.9-7.5	1.4-5.6	1.1-4.5	F	193	24%	100%												
	0.216	2.00	2.00	3.3-13	2.2-8.6	1.6-6.5	1.3-5.2	F	173	34%	100%					F	214	23%	100%	C	313	8%	100%
	0.241	2.50	2.50	3.5-14	2.4-9.7	1.8-7.2	1.5-5.8	F	159	41%	100%					F	191	30%	100%	C	280	12%	100%
	0.265	3.00	3.00	4-16	2.8-11	2-7.9	1.6-6.3	F	148	47%	100%					F	174	36%	100%	M	256	15%	100%
	0.286	3.50	3.50	4.3-17	2.8-11	2.2-8.6	1.7-6.9	F	140	53%	100%					F	161	41%	100%	M	237	17%	100%
	0.305	4.00	4.00	4.5-18	3-12	2.3-9.2	1.8-7.3	F	133	57%	100%					F	150	45%	100%	M	222	19%	100%
	0.324	4.50	4.50	4.8-19	3.3-13	2.4-9.7	2-7.8	F	127	61%	100%					F	141	49%	100%	F	209	21%	100%
	0.341	5.00	5.00	5-20	3.5-14	2.5-10	2.1-8.2	F	122	64%	100%					F	134	52%	100%	F	199	23%	100%
	0.358	5.50	5.50	5.3-21	3.5-14	2.8-11	2.2-8.6	F	118	68%	100%					F	127	55%	100%	F	190	24%	100%
	0.374	6.00	6.00	5.5-22	3.8-15	2.8-11	2.3-9	F	114	71%	100%					F	122	58%	100%	F	182	26%	100%
80 -01 Nozzles	Flow L/min	Boom BAR	Tip BAR	Application Speed (L/Ha on 50cm spacing) @ 20L/Ha	30L/Ha	40L/Ha	50L/Ha	ER80-01 (40270-01)				SR80-01 (40288-01)				MR80-01 (40290-01)				DR80-01 (40280-01)			
								Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600
	0.254	1.25	1.25	3.8-15	2.5-10	1.9-7.6	1.5-6.1	F	181	25%	100%												
	0.279	1.50	1.49	4.3-17	2.8-11	2.1-8.4	1.7-6.7	F	171	31%	100%												
	0.322	2.00	1.99	4.8-19	3.3-13	2.4-9.7	1.9-7.7	F	158	40%	100%	M	238	29%	97%	M	222	22%	97%	C	317	9%	94%
	0.360	2.50	2.49	5.5-22	3.5-14	2.8-11	2.2-8.6	F	148	46%	100%	F	210	29%	97%	F	201	27%	97%	C	287	12%	95%
	0.394	3.00	2.99	6-24	4-16	3-12	2.4-9.5	F	140	52%	100%	F	190	29%	97%	F	184	32%	97%	M	265	15%	97%
	0.426	3.50	3.49	6.5-26	4.3-17	3.3-13	2.5-10	F	134	56%	100%	F	174	29%	98%	F	172	36%	97%	M	247	17%	98%
	0.455	4.00	3.98	6.8-27	4.5-18	3.5-14	2.8-11	F	129	60%	100%	F	162	29%	98%	F	162	39%	97%	M	233	19%	99%
	0.483	4.50	4.48	7.3-29	4.8-19	3.5-14	3-12	F	125	64%	100%	F	152	29%	98%	F	153	42%	97%	M	221	20%	100%
	0.509	5.00	4.98	7.8-31	5-20	3.8-15	3-12	F	121	67%	100%	F	143	29%	98%	F	146	45%	97%	F	211	22%	101%
	0.534	5.50	5.48	8-32	5.3-21	4-16	3.3-13	F	118	70%	100%	F	136	29%	98%	F	140	48%	97%	F	202	23%	102%
	0.557	6.00	5.98	8.3-33	5.5-22	4.3-17	3.3-13	F	115	73%	100%	F	129	29%	98%	F	134	50%	96%	F	195	24%	102%
80 -015 Nozzles	Flow L/min	Boom BAR	Tip BAR	Application Speed (L/Ha on 50cm spacing) @ 35L/Ha	50L/Ha	60L/Ha	75L/Ha	ER80-015 (40270-015)				SR80-015 (40288-015)				MR80-015 (40290-015)				DR80-015 (40280-015)			
								Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600
	0.381	1.25	1.24	3.3-13	3.8-15	1.9-7.6	1.5-6.1	F	205	19%	100%												
	0.417	1.50	1.49	3.5-14	2.5-10	2.1-8.3	1.7-6.7	F	195	22%	100%	C	306	10%	94%								
	0.481	2.00	1.98	4.3-17	3-12	2.4-9.6	1.9-7.7	F	182	28%	100%	M	268	15%	95%	C	329	10%	94%	VC	424	4%	86%
	0.538	2.50	2.48	4.5-18	3.3-13	2.8-11	2.2-8.6	F	172	32%	100%	M	241	20%	96%	C	298	13%	96%	VC	394	5%	89%
	0.590	3.00	2.97	5-20	3.5-14	3-12	2.4-9.4	F	164	36%	100%	M	222	23%	96%	C	274	15%	97%	C	371	6%	91%
	0.637	3.50	3.47	5.5-22	3.8-15	3.3-13	2.5-10	F	158	39%	100%	F	207	26%	97%	M	255	17%	97%	C	352	7%	92%
	0.681	4.00	3.96	5.8-23	4-16	3.5-14	2.8-11	F	152	42%	100%	F	194	29%	97%	M	240	19%	98%	C	337	8%	93%
	0.722	4.50	4.46	6.3-25	4.3-17	3.5-14	3-12	F	148	44%	100%	F	184	31%	97%	M	228	21%	98%	C	324	8%	94%
	0.761	5.00	4.96	6.5-26	4.5-18	3.8-15	3-12	F	144	46%	100%	F	175	34%	98%	M	217	22%	99%	C	313	9%	95%
	0.798	5.50	5.45	6.8-27	4.8-19	4-16	3.3-13	F	140	48%	100%	F	168	35%	98%	F	208	23%	99%	C	303	10%	95%
	0.834	6.00	5.95	7.3-29	5-20	4.3-17	3.3-13	F	137	50%	100%	F	161	37%	98%	F	200	24%	99%	C	295	10%	96%
80 -02 Nozzles	Flow L/min	Boom BAR	Tip BAR	Application Speed (L/Ha on 50cm spacing) @ 40L/Ha	50L/Ha	60L/Ha	70L/Ha	ER80-02 (40270-02)				SR80-02 (40288-02)				MR80-02 (40290-02)				DR80-02 (40280-02)			
								Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600
	0.505	1.25	1.23	3.8-15	3-12	2.5-10	2.2-8.7	F	188	26%	100%												
	0.554	1.50	1.47	4.3-17	3.3-13	2.8-11	2.4-9.5	F	182	29%	100%	C	288	10%	93%								
	0.639	2.00	1.97	4.8-19	3.8-15	3.3-13	2.8-11	F	172	33%	100%	M	261	15%	95%	C	331	8%	93%	XC	461	3%	80%
	0.715	2.50	2.46	5.3-21	4.3-17	3.5-14	3-12	F	165	37%	100%	M	242	19%	96%	C	309	10%	94%	VC	433	4%	83%
	0.783	3.00	2.95	5.8-23	4.8-19	4-16	3.3-13	F	159	39%	100%	M	228	22%	97%	C	291	12%	94%	VC	412	5%	85%
	0.846	3.50	3.44	6.3-25	5-20	4.3-17	3.5-14	F	155	42%	100%	M	216	24%	97%	C	277	14%	95%	VC	394	5%	87%
	0.904	4.00	3.93	6.8-27	5.5-22	4.5-18	3.8-15	F	151	44%	100%	F	207	26%	97%	M	266	15%	95%	C	380	6%	88%
	0.959	4.50	4.42	7.3-29	5.8-23	4.8-19	4-16	F	148	46%	99%	F	199	28%	98%	M	256	16%	95%	C	368	6%	89%
	1.011	5.00	4.92	7.5-30	6-24	5-20	4.3-17	F	145	47%	99%	F	192	30%	98%	M	248	18%	95%	C	357	7%	90%
	1.060	5.50	5.41	8-32	6.3-25	5.3-21	4.5-18	F	142	49%	99%	F	186	32%	98%	M	241	19%	95%	C	348	7%	90%
	1.107	6.00	5.90	8.3-33	6.8-27	5.5-22	4.8-19	F	140	50%	99%	F	180	33%	98%	M	234	19%	95%	C	339	8%	91%

NOTE: [1]SR, MR, DR, UR spray tips include pre-orifice(s). Pre-orifices are not interchangeable between different spray tips of different series. [2]Shown application information is based on water @ 80°F in a controlled environment and should not be considered actual. Information is provided for comparison to other Combo-Jet® spray tips, for educational purposes only. Repeat testing results can vary.

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COMBO-JET 80° Spray Tips - PWM Spray Systems

Nozzle Size & Angle	Flow Rate L/min	Boom BAR	Tip BAR	Application Rate - Litres/Hectare on 50cm Spacing w/ PWM Sprayer System @ Sprayer Speed (25%-100% Duty Cycle) - kph				Spray Classification; VMD (Droplet Size in µ); %<141µ (Drift %); %<600µ (Small Droplets)															
								ER80° Series				SR80° Series				MR80° Series				DR80° Series			
								Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600
80 -025 Nozzles	Flow L/min	Boom BAR	Tip BAR	Application Speed (L/Ha on 50cm spacing) @ 50L/Ha	60L/Ha	70L/Ha	80L/Ha	ER80-025 Class	VMD	(40270-025) <141	<600	SR80-025 Class	VMD	(40288-025) <141	<600	MR80-025 Class	VMD	(40290-025) <141	<600	DR80-025 Class	VMD	(40280-025) <141	<600
	0.629	1.25	1.22	3.8-15	3.3-13	2.8-11	2.4-9.4	M	240	15%	100%												
	0.689	1.50	1.46	4.3-17	3.5-14	3-12	2.5-10	M	229	18%	100%	C	334	7%	90%								
	0.796	2.00	1.95	4.8-19	4-16	3.5-14	3-12	F	212	23%	100%	C	302	11%	92%	VC	434	4%	80%	XC	466	3%	76%
	0.890	2.50	2.44	5.3-21	4.5-18	3.8-15	3.3-13	F	200	26%	100%	C	280	14%	94%	VC	400	6%	83%	VC	442	4%	79%
	0.974	3.00	2.92	5.8-23	4.8-19	4.3-17	3.8-15	F	191	29%	100%	M	263	16%	95%	C	374	7%	85%	VC	424	5%	81%
	1.053	3.50	3.41	6.3-25	5.3-21	4.5-18	4-16	F	183	31%	100%	M	249	18%	95%	C	354	8%	87%	VC	409	5%	83%
	1.125	4.00	3.90	6.8-27	5.8-23	4.8-19	4.3-17	F	177	33%	100%	M	238	20%	96%	C	337	9%	88%	VC	396	6%	84%
	1.193	4.50	4.39	7.3-29	6-24	5-20	4.5-18	F	171	35%	100%	M	228	21%	96%	C	323	10%	89%	C	385	6%	85%
	1.258	5.00	4.87	7.5-30	6.3-25	5.5-22	4.8-19	F	167	37%	100%	M	220	22%	97%	C	311	10%	90%	C	376	7%	86%
	1.319	5.50	5.36	8-32	6.5-26	5.8-23	5-20	F	162	38%	99%	F	213	24%	97%	C	301	11%	91%	C	367	7%	87%
	1.378	6.00	5.85	8.3-33	7-28	6-24	5.3-21	F	159	40%	99%	F	207	25%	97%	C	291	11%	91%	C	360	8%	87%
80 -03 Nozzles	Flow L/min	Boom BAR	Tip BAR	Application Speed (L/Ha on 50cm spacing) @ 60L/Ha	75L/Ha	100L/Ha	120L/Ha	ER80-03 Class	VMD	(40270-03) <141	<600	SR80-03 Class	VMD	(40288-03) <141	<600	MR80-03 Class	VMD	(40290-03) <141	<600	DR80-03 Class	VMD	(40280-03) <141	<600
	0.751	1.25	1.21	3.8-15	3-12	2.3-9	1.9-7.5	M	240	16%	99%												
	0.822	1.50	1.45	4-16	3.3-13	2.5-9.9	2.1-8.2	M	231	18%	99%	VC	393	5%	87%								
	0.950	2.00	1.93	4.8-19	3.8-15	2.8-11	2.4-9.5	M	217	22%	99%	C	353	9%	89%	VC	443	4%	80%	XC	489	3%	70%
	1.062	2.50	2.41	5.3-21	4.3-17	3.3-13	2.8-11	F	207	25%	99%	C	325	11%	90%	VC	409	6%	83%	XC	462	4%	75%
	1.163	3.00	2.89	5.8-23	4.8-19	3.5-14	3-12	F	199	27%	99%	C	304	13%	91%	C	383	7%	86%	VC	441	4%	78%
	1.256	3.50	3.38	6.3-25	5-20	3.8-15	3.3-13	F	193	29%	99%	C	287	15%	92%	C	362	8%	87%	VC	424	5%	80%
	1.343	4.00	3.86	6.8-27	5.3-21	4-16	3.3-13	F	187	31%	99%	C	273	16%	92%	C	346	9%	89%	VC	410	6%	82%
	1.424	4.50	4.34	7-28	5.8-23	4.3-17	3.5-14	F	183	32%	99%	M	261	17%	93%	C	331	10%	90%	C	398	6%	83%
	1.502	5.00	4.82	7.5-30	6-24	4.5-18	3.8-15	F	179	34%	99%	M	251	18%	93%	C	319	10%	91%	C	387	7%	84%
	1.575	5.50	5.30	7.8-31	6.3-25	4.8-19	4-16	F	175	35%	99%	M	243	19%	94%	C	308	11%	91%	C	378	7%	85%
	1.645	6.00	5.79	8.3-33	6.5-26	5-20	4-16	F	172	36%	99%	M	235	20%	94%	C	299	11%	92%	C	370	8%	86%
80 -04 Nozzles	Flow L/min	Boom BAR	Tip BAR	Application Speed (L/Ha on 50cm spacing) @ 75L/Ha	100L/Ha	125L/Ha	150L/Ha	ER80-04 Class	VMD	(40270-04) <141	<600	SR80-04 Class	VMD	(40288-04) <141	<600	MR80-04 Class	VMD	(40290-04) <141	<600	DR80-04 Class	VMD	(40280-04) <141	<600
	0.99	1.25	1.17	4-16	3-12	2.4-9.5	2.2-7.9	M	260	15%	99%												
	1.08	1.50	1.41	4.3-17	3.3-13	2.5-10	2.2-8.6	M	250	17%	99%	C	393	3%	83%								
	1.25	2.00	1.87	5-20	3.8-15	3-12	2.5-10	M	235	20%	99%	C	360	6%	86%	VC	433	5%	79%	XC	556	2%	59%
	1.40	2.50	2.34	5.5-22	4.3-17	3.3-13	2.8-11	M	224	22%	99%	C	334	8%	88%	VC	405	6%	82%	XC	527	2%	65%
	1.53	3.00	2.81	6-24	4.5-18	3.8-15	3-12	F	215	24%	99%	C	314	10%	89%	C	383	7%	84%	XC	504	3%	68%
	1.65	3.50	3.28	6.5-26	5-20	4-16	3.3-13	F	208	25%	99%	C	296	11%	90%	C	366	8%	86%	XC	486	4%	71%
	1.77	4.00	3.75	7-28	5.3-21	4.3-17	3.5-14	F	202	27%	99%	C	281	13%	91%	C	351	9%	87%	XC	471	4%	74%
	1.87	4.50	4.22	7.5-30	5.5-22	4.5-18	3.8-15	F	197	28%	99%	M	268	14%	92%	C	339	10%	88%	XC	458	4%	75%
	1.97	5.00	4.69	8-32	6-24	4.8-19	4-16	F	193	29%	99%	M	256	15%	92%	C	329	11%	89%	VC	446	5%	77%
	2.07	5.50	5.15	8.3-33	6.3-25	5-20	4.3-17	F	189	30%	99%	M	245	16%	93%	C	319	12%	90%	VC	436	5%	78%
	2.16	6.00	5.62	8.8-35	6.5-26	5.3-21	4.3-17	F	186	31%	99%	M	235	17%	93%	C	311	12%	90%	C	427	5%	79%
80 -05 Nozzles	Flow L/min	Boom BAR	Tip BAR	Application Speed (L/Ha on 50cm spacing) @ 100L/Ha	125L/Ha	150L/Ha	175L/Ha	ER80-05 Class	VMD	(40270-05) <141	<600	SR80-05 Class	VMD	(40288-05) <141	<600	MR80-05 Class	VMD	(40290-05) <141	<600	DR80-05 Class	VMD	(40280-05) <141	<600
	1.21	1.25	1.13	3.8-15	3-12	2.4-9.7	2.1-8.3	C	311	9%	95%												
	1.33	1.50	1.36	4-16	3.3-13	2.8-11	2.3-9.1	C	297	11%	95%	VC	442	3%	78%								
	1.53	2.00	1.81	4.5-18	3.8-15	3-12	2.8-11	C	276	15%	95%	VC	404	6%	81%								
	1.72	2.50	2.26	5.3-21	4-16	3.5-14	3-12	M	261	17%	95%	C	375	8%	84%	XC	491	3%	70%	XC	563	2%	58%
	1.88	3.00	2.72	5.8-23	4.5-18	3.8-15	3.3-13	M	249	20%	95%	C	351	10%	85%	VC	467	4%	73%	XC	540	2%	62%
	2.03	3.50	3.17	6-24	4.8-19	4-16	3.5-14	M	240	21%	95%	C	331	11%	87%	VC	448	5%	76%	XC	522	3%	65%
	2.17	4.00	3.62	6.5-26	5.3-21	4.3-17	3.8-15	M	232	23%	95%	C	313	12%	88%	VC	432	5%	78%	XC	506	3%	67%
	2.30	4.50	4.08	7-28	5.5-22	4.5-18	4-16	M	225	24%	95%	C	298	14%	89%	VC	418	6%	79%	XC	493	3%	70%
	2.43	5.00	4.53	7.3-29	5.8-23	4.8-19	4.3-17	M	219	26%	95%	C	284	15%	89%	C	407	6%	81%	XC	482	4%	71%
	2.54	5.50	4.98	7.8-31	6-24	5-20	4.3-17	F	214	27%	95%	C	272	15%	90%	C	396	7%	82%	VC	471	4%	73%
	2.66	6.00	5.43	8-32	6.5-26	5.3-21	4.5-18	F	209	28%	95%	M	260	16%	91%	C	387	7%	83%	VC	462	4%	74%
80 -06 Nozzles	Flow L/min	Boom BAR	Tip BAR	Application Speed (L/Ha on 50cm spacing) @ 125L/Ha	150L/Ha	175L/Ha	200L/Ha	ER80-06 Class	VMD	(40270-06) <141	<600	SR80-06 Class	VMD	(40288-06) <141	<600	MR80-06 Class	VMD	(40290-06) <141	<600	DR80-06 Class	VMD	(40280-06) <141	<600
	1.43	1.25	1.09	3.5-14	2.8-11	2.5-9.8	2.2-8.6	C	338	10%	92%												
	1.56	1.50	1.30	3.8-15	3-12	2.8-11	2.4-9.4	C	326	12%	92%												
	1.80	2.00	1.74	4.3-17	3.5-14	3-12	2.8-11	C	307	15%	91%	VC	439	4%	78%								
	2.02	2.50	2.17	4.8-19	4-16	3.5-14	3-12	C	293	17%	91%	VC	414	5%	81%	XC	520	3%	65%	XC	591	2%	52%
	2.21	3.00	2.61	5.3-21	4.5-18	3.8-15	3.3-13	C	283	19%	91%	C	395	6%	83%	XC	499	3%	69%	XC	570	2%	56%
	2.39	3.50	3.04	5.8-23	4.8-19	4-16	3.5-14	C	274	21%	91%	C	380	7%	85%	XC	481	4%	71%	XC	553	2%	59%
	2.55	4.00	3.48	6-24	5-20	4.3-17	3.8-15	M	266	22%	90%	C	367	8%	86%	VC	467	4%	74%	XC	539	2%	61%
	2.71	4.50	3.91	6.5-26	5.5-22	4.8-19	4-16	M	260	23%	90%	C	356	9%	87%	VC	454	5%	75%	XC	526	3%	63%
	2.85	5.00	4.35	6.8-27	5.8-23	5-20	4.3-17	M	254	25%	90%	C	347	9%	88%	VC	443	5%	77%	XC	516	3%	64%
	2.99	5.50	4.78	7.3-29	6-24	5.3-21	4.5-18	M	250	26%	90%	C	338	10%	89%	VC	433	5%	78%	XC	506	3%	66%
	3.12	6.00	5.22	7.5-30	6.3-25	5.3-21	4.8-19	M	245	27%	90%	C	331	10%	90%	VC	425	6%	79%	XC	498	3%	67%
80 -08 Nozzles	Flow L/min	Boom BAR	Tip BAR	Application Speed (L/Ha on 50cm spacing) @ 150L/Ha	200L/Ha	250L/Ha	300L/Ha	ER80-08 Class	VMD	(40270-08) <141	<600	SR80-08 Class	VMD	(40288-08) <141	<600	MR80-08 Class	VMD	(40290-08) <141	<600	DR80-08 Class	VMD	(40280-08) <141	<600
	2.29	2.00	1.58	4.5-18	3.5-14	2.8-11	2.3-9.2	C	349	14%	88%	UC	529	6%	51%								
	2.56	2.50	1.97	5.3-21	3.8-15	3-12	2.5-10	C	322	16%	90%	UC	497	7%	58%	UC	546	6%	62%	UC	625	3%	51%
	2.81	3.00	2.37	5.5-22	4.3-17	3.3-13	2.8-11	M	302	19%	91%	XC	470	8%	62%	UC	520	7%	66%	UC	603	3%	55%
	3.03	3.50	2.76	6-24	4.5-18	3.8-15	3-12	M	285	21%	93%	XC	448	9%	66%	UC	499	8%	69%	UC	584	4%	58%
	3.24	4.00	3.16	6.5-26	4.8-19	4-16	3.3-13	M	272	22%	93%	XC	429	10%	69%	UC	482	9%	72%	UC	569	4%	60%
	3.44	4.50	3.55	7-28	5.3-21	4.3-17	3.5-14	F	261	24%	94%	XC	412	10%	71%	XC	467	9%	74%	UC	556	5%	62%
	3.62	5.00	3.95	7.3-29	5.5-22	4.3-17	3.5-14	F	251	25%	95%	XC	397	11%	73%	XC	454	10%	75%	UC	544	5%	64%
	3.80	5.50	4.34	7.5-30	5.8-23	4.5-18	3.8-15	F	243	26%	95%	XC	383	11%	75%	XC	442	10%	77%	UC	534	5%	66%
	3.97	6.00	4.74	8-32	6-24	4.8-19	4-16	F	235	27%	95%	VC	371	12%	76%	XC	432	11%	78%	UC	525	6%	67%
80 -10 Nozzles	Flow L/min	Boom BAR	Tip BAR	Application Speed (L/Ha on 50cm spacing) @ 200L/Ha	250L/Ha	300L/Ha	350L/Ha	ER80-10 Class	VMD	(40270-10) <141	<600	SR80-10 Class	VMD	(40288-10) <141	<600	MR80-10 Class	VMD	(40290-10) <141	<600	DR80-10 Class	VMD	(40280-10) <141	<600
	3.03	2.50	1.77	4.5-18	3.8-15	3-12	2.5-10	XC	425	11%	80%												
	3.32	3.00	2.12	5-20	4-16	3.3-13	2.8-11	XC	402	12%	82%	UC	508	7%	56%	UC	543	5%	63%	UC	609	4%	53%
	3.58	3.50	2.47	5.5-22	4.3-17	3.5-14	3-12	VC	383	13%	83%	UC	487	7%	60%	UC	525	6%	65%	UC	593	5%	55%
	3.83	4.00	2.82	5.8-23	4.5-18	3.8-15	3.3-13	C	368	14%	84%	XC	468	8%	63%	UC	510	6%	67%	UC	580	5%	57%
	4.06	4.50	3.18	6-24	5-20	4-16	3.5-14	C	355	15%	85%	XC	452	8%	66%	UC	497	7%	69%	UC	569	6%	59%
	4.28	5.00	3.53	6.5-26	5.3-21	4.3-17	3.8-15	C	344	16%	86%	XC	437	9%	68%	UC	486	7%	70%	UC	559	6%	61%
	4.49	5.50	3.88	6.8-27	5.5-22	4.5-18	3.8-15	M	334	17%	87%	XC	424	9%	70%	XC	476	7%	72%	UC	550	6%	62%
	4.69	6.00	4.24	7-28	5.8-23	4.8-19	4-16	M	325	18%	87%	XC	412	10%	71%	XC	467	8%	73%	UC	542	6%	63%

NOTE: [1]SR, MR, DR, UR spray tips include pre-orifice(s). Pre-orifices are not interchangeable between different spray tips of different series. [2]Shown application information is based on water @ 80°F in a controlled environment and should not be considered actual. Information is provided for comparison to other Combo-Jet® spray tips, for educational purposes only. Repeat testing results can vary.

COMBO-JET 80° Spray Tips - PWM Spray Systems

Comprehensive rate & speed charts for any nozzle spacing/speed/rate is available on Tip Wizard. Try it today!

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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.

Nozzle Size & Angle	Flow Rate L/min	Boom BAR	Tip BAR	Application Rate - Litres/Hectare on 50cm Spacing w/ PWM Sprayer System				Spray Classification; VMD (Droplet Size in µ); %<141µ (Drift %); %<600µ (Small Droplets)															
								ER80° Series				SR80° Series				MR80° Series				DR80° Series			
				@ Sprayer Speed (25%-100% Duty Cycle) - kph				Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600
80 -125 Nozzles	Flow L/min	Boom BAR	Tip BAR	Application Speed (L/Ha on 50cm spacing) @				ER80-125		(40270-125)		SR80-125		(40288-125)		MR80-125		(40290-125)		DR80-125		(40280-125)	
				250L/Ha	300L/Ha	350L/Ha	400L/Ha	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600
	3.51	2.50	1.52	4.3-17	3.5-14	3-12	2.8-11	XC	447	10%	77%	UC	546	6%	48%								
	3.84	3.00	1.82	4.5-18	3.8-15	3.3-13	3-12	XC	427	11%	79%	UC	525	6%	52%								
	4.15	3.50	2.12	5-20	4.3-17	3.5-14	3-12	XC	410	11%	81%	UC	506	7%	56%	UC	582	5%	56%	UC	622	4%	50%
	4.44	4.00	2.42	5.3-21	4.5-18	3.8-15	3.3-13	VC	396	12%	82%	UC	490	8%	58%	UC	569	6%	58%	UC	608	4%	52%
	4.71	4.50	2.73	5.8-23	4.8-19	4-16	3.5-14	VC	384	13%	83%	XC	476	8%	61%	UC	557	6%	60%	UC	596	5%	54%
	4.96	5.00	3.03	6-24	5-20	4.3-17	3.8-15	C	374	13%	84%	XC	463	9%	63%	UC	547	7%	62%	UC	586	5%	55%
	5.20	5.50	3.33	6.3-25	5.3-21	4.5-18	4-16	C	365	14%	85%	XC	451	9%	64%	UC	538	7%	63%	UC	577	5%	57%
	5.43	6.00	3.64	6.5-26	5.5-22	4.8-19	4-16	C	357	14%	86%	XC	441	9%	66%	UC	530	7%	64%	UC	569	5%	58%
80 -15 Nozzles	Flow L/min	Boom BAR	Tip BAR	Application Speed (L/Ha on 50cm spacing) @				ER80-15		(40270-15)		SR80-15		(40288-15)		MR80-15		(40290-15)		DR80-15		(40280-15)	
				300L/Ha	400L/Ha	450L/Ha	500L/Ha	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600
	4.26	3.00	1.55	4.3-17	3.3-13	2.8-11	2.5-10	XC	448	8%	77%	UC	588	5%	41%								
	4.60	3.50	1.81	4.5-18	3.5-14	3-12	2.8-11	XC	428	9%	78%	UC	570	5%	44%								
	4.91	4.00	2.07	5-20	3.8-15	3.3-13	3-12	XC	412	10%	79%	UC	554	6%	47%	UC	513	7%	66%	UC	637	3%	48%
	5.21	4.50	2.32	5.3-21	4-16	3.5-14	3.3-13	XC	398	11%	80%	UC	540	6%	50%	UC	499	8%	68%	UC	624	3%	50%
	5.49	5.00	2.58	5.5-22	4-16	3.8-15	3.3-13	VC	386	12%	81%	UC	527	6%	52%	UC	487	8%	69%	UC	612	3%	52%
	5.76	5.50	2.84	5.8-23	4.3-17	3.8-15	3.5-14	VC	376	13%	81%	UC	516	6%	54%	XC	477	9%	71%	UC	602	3%	54%
	6.02	6.00	3.10	6-24	4.5-18	4-16	3.5-14	C	366	13%	82%	UC	505	7%	56%	XC	467	9%	72%	UC	593	4%	55%
80 -20 Nozzles	Flow L/min	Boom BAR	Tip BAR	Application Speed (L/Ha on 50cm spacing) @				ER80-20		(40270-20)		SR80-20		(40288-20)		MR80-20		(40290-20)		DR80-20		(40280-20)	
				400L/Ha	500L/Ha	600L/Ha	700L/Ha	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600
	5.59	4.00	1.50	4.3-17	3.3-13	2.8-11	2.4-9.6	UC	500	7%	68%												
	5.92	4.50	1.69	4.5-18	3.5-14	3-12	2.5-10	UC	485	8%	70%	UC	577	5%	43%								
	6.24	5.00	1.88	4.8-19	3.8-15	3-12	2.8-11	XC	472	8%	72%	UC	563	5%	46%								
	6.55	5.50	2.06	5-20	4-16	3.3-13	2.8-11	XC	461	9%	73%	UC	551	5%	48%	UC	564	5%	58%	UC	629	3%	50%
	6.84	6.00	2.25	5.3-21	4-16	3.5-14	3-12	XC	450	9%	74%	UC	540	6%	50%	UC	552	5%	60%	UC	616	3%	52%
80 -25 Nozzles	Flow L/min	Boom BAR	Tip BAR	Application Speed (L/Ha on 50cm spacing) @				ER80-25		(40270-25)		SR80-25		(40288-25)		MR80-25		(40290-25)		DR80-25		(40280-25)	
				500L/Ha	600L/Ha	700L/Ha	800L/Ha	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600
	6.71	5.00	1.39	4-16	3.3-13	3-12	2.5-10	UC	514	7%	68%												
	7.04	5.50	1.53	4.3-17	3.5-14	3-12	2.8-11	UC	501	8%	69%												
	7.36	6.00	1.67	4.5-18	3.8-15	3.3-13	2.8-11	UC	490	8%	70%	UC	535	5%	50%								

NOTE: [1]SR, MR, DR, UR spray tips include pre-orifice(s). Pre-orifices are not interchangeable between different spray tips of different series. [2]Shown application information is based on water @ 80°F in a controlled environment and should not be considered actual. Information is provided for comparison to other Combo-Jet® spray tips, for educational purposes only. Repeat testing results can vary.

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COMBO-JET 110° Spray Tips - PWM Spray Systems

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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.

Nozzle Size & Angle	Max Flow Rate L/min	Boom BAR	Tip psi	Application Rate - Litres/Hectare on 50cm Spacing w/ PWM Sprayer System				Spray Classification; VMD (Droplet Size in µ); %<141µ (Drift %); %<600µ (Small Droplets)																	
								ER110° Series				SR110° Series				MR110° Series				DR110° Series				UR Series	
				@ Sprayer Speed - kph (25-100% Duty Cycle)				Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD
110 -01 Nozzles	Flow L/min	Boom BAR	Tip BAR	Application Speed (L/Ha on 50cm spacing) @				ER110-01		(40281-01)															
				20L/Ha	30L/Ha	40L/Ha	50L/Ha	Class	VMD	<141	<600														
	0.254	1.25	1.25	3.8-15	2.5-10	1.9-7.6	1.5-6.1	F	151	43%	100%														
	0.279	1.50	1.49	4.3-17	2.8-11	2.1-8.4	1.7-6.7	F	147	46%	100%														
	0.322	2.00	1.99	4.8-19	3.3-13	2.4-9.7	1.9-7.7	F	140	50%	100%														
	0.360	2.50	2.49	5.5-22	3.5-14	2.8-11	2.2-8.6	F	135	54%	100%														
	0.394	3.00	2.99	6-24	4-16	3-12	2.4-9.5	F	131	57%	100%														
	0.426	3.50	3.49	6.5-26	4.3-17	3.3-13	2.5-10	F	128	59%	100%														
	0.455	4.00	3.98	6.8-27	4.5-18	3.5-14	2.8-11	F	125	62%	100%														
	0.483	4.50	4.48	7.3-29	4.8-19	3.5-14	3-12	F	122	63%	100%														
	0.509	5.00	4.98	7.8-31	5-20	3.8-15	3-12	F	120	65%	100%														
	0.534	5.50	5.48	8-32	5.3-21	4-16	3.3-13	F	118	67%	100%														
	0.557	6.00	5.98	8.3-33	5.5-22	4.3-17	3.3-13	F	116	68%	100%														
110 -015 Nozzles	Flow L/min	Boom BAR	Tip BAR	Application Speed (L/Ha on 50cm spacing) @				ER110-015		(40281-015)		SR110-015		(40287-015)		MR110-015		(40291-015)		DR110-015		(40286-015)			
				35L/Ha	50L/Ha	60L/Ha	75L/Ha	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600		
	0.381	1.25	1.24	3.3-13	3.8-15	1.9-7.6	1.5-6.1	F	155	39%	100%														
	0.417	1.50	1.49	3.5-14	2.5-10	2.1-8.3	1.7-6.7	F	151	42%	100%	M	233	19%	98%	C	355	8%	91%	VC	394	5%	90%		
	0.481	2.00	1.98	4.3-17	3-12	2.4-9.6	1.9-7.7	F	145	46%	100%	M	217	23%	98%	C	323	11%	94%	C	368	7%	92%		
	0.538	2.50	2.48	4.5-18	3.3-13	2.8-11	2.2-8.6	F	141	50%	100%	F	205	27%	98%	C	298	14%	96%	C	346	8%	93%		
	0.590	3.00	2.97	5-20	3.5-14	3-12	2.4-9.4	F	137	53%	100%	F	195	30%	98%	C	279	16%	97%	C	329	10%	94%		
	0.637	3.50	3.47	5.5-22	3.8-15	3.3-13	2.5-10	F	134	55%	100%	F	186	32%	98%	M	262	18%	98%	C	315	11%	95%		
	0.681	4.00	3.96	5.8-23	4-16	3.5-14	2.8-11	F	132	57%	100%	F	179	34%	98%	M	248	20%	98%	C	302	12%	95%		
	0.722	4.50	4.46	6.3-25	4.3-17	3.5-14	3-12	F	129	59%	100%	F	173	36%	98%	M	226	23%	99%	C	282	14%	96%		
	0.761	5.00	4.96	6.5-26	4.5-18	3.8-15	3-12	F	127	61%	100%	F	167	37%	98%	F	217	24%	99%	C	273	15%	96%		
	0.798	5.50	5.45	6.8-27	4.8-19	4-16	3.3-13	F	125	63%	100%	F	162	39%	98%	F	209	25%	99%	M	265	15%	97%		
	0.834	6.00	5.95	7.3-29	5-20	4.3-17	3.3-13	F	124	64%	100%	F	157	40%	98%	F	195	27%	100%	M	252	17%	97%		
110 -02 Nozzles	Flow L/min	Boom BAR	Tip BAR	Application Speed (L/Ha on 50cm spacing) @				ER110-02		(40281-02)		SR110-02		(40287-02)		MR110-02		(40291-02)		DR110-02		(40286-02)			
				40L/Ha	50L/Ha	60L/Ha	70L/Ha	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600		
	0.505	1.25	1.23	3.8-15	3-12	2.5-10	2.2-8.7	F	177	30%	99%														
	0.554	1.50	1.47	4.3-17	3.3-13	2.8-11	2.4-9.5	F	171	33%	100%	M	233	19%	99%										
	0.639	2.00	1.97	4.8-19	3.8-15	3.3-13	2.8-11	F	161	39%	100%	M	220	22%	99%	C	317	11%	95%	VC	433	5%	82%		
	0.715	2.50	2.46	5.3-21	4.3-17	3.5-14	3-12	F	154	43%	100%	F	210	25%	99%	C	297	13%	96%	VC	412	6%	85%		
	0.783	3.00	2.95	5.8-23	4.8-19	4-16	3.3-13	F	148	46%	100%	F	202	27%	99%	C	281	15%	97%	VC	394	6%	87%		
	0.846	3.50	3.44	6.3-25	5-20	4.3-17	3.5-14	F	144	49%	100%	F	195	29%	99%	M	267	17%	97%	C	378	7%	88%		
	0.904	4.00	3.93	6.8-27	5.5-22	4.5-18	3.8-15	F	139	52%	100%	F	189	30%	99%	M	256	18%	97%	C	364	8%	90%		
	0.959	4.50	4.42	7.3-29	5.8-23	4.8-19	4-16	F	136	54%	100%	F	184	32%	99%	M	237	21%	98%	C	339	9%	91%		
	1.011	5.00	4.92	7.5-30	6-24	5-20	4.3-17	F	132	56%	100%	F	179	33%	99%	M	229	22%	98%	C	328	10%	92%		
	1.060	5.50	5.41	8-32	6.3-25	5.3-21	4.5-18	F	129	57%	100%	F	175	34%	99%	M	222	23%	98%	C	318	10%	93%		
	1.107	6.00	5.90	8.3-33	6.8-27	5.5-22	4.8-19	F	126	59%	100%	F	171	35%	99%	F	210	25%	99%	C	299	11%	94%		
110 -025 Nozzles	Flow L/min	Boom BAR	Tip BAR	Application Speed (L/Ha on 50cm spacing) @				ER110-025		(40281-025)		SR110-025		(40287-025)		MR110-025		(40291-025)		DR110-025		(40286-025)		UR110-025	
				50L/Ha	60L/Ha	70L/Ha	80L/Ha	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD
	0.629	1.25	1.22	3.8-15	3.3-13	2.8-11	2.4-9.4	F	196	28%	100%														(40292-025)
	0.689	1.50	1.46	4.3-17	3.5-14	3-12	2.5-10	F	193	28%	100%	M	251	16%	98%										
	0.796	2.00	1.95	4.8-19	4-16	3.5-14	3-12	F	187	29%	100%	M	237	19%	98%	C	353	8%	90%	VC	437	5%	79%	UC	657
	0.890	2.50	2.44	5.3-21	4.5-18	3.8-15	3.3-13	F	183	30%	100%	M	227	22%	98%	C	337	10%	92%	VC	418	6%	83%	UC	564
	0.974	3.00	2.92	5.8-23	4.8-19	4.3-17	3.8-15	F	179	30%	100%	M	218	24%	98%	C	322	11%	93%	VC	401	6%	86%	UC	541
	1.053	3.50	3.41	6.3-25	5.3-21	4.5-18	4-16	F	177	30%	100%	F	211	25%	98%	C	310	12%	94%	C	386	7%	88%	UC	522
	1.125	4.00	3.90	6.8-27	5.8-23	4.8-19	4.3-17	F	174	31%	100%	F	204	27%	98%	C	299	13%	95%	C	373	8%	89%	UC	504
	1.193	4.50	4.39	7.3-29	6-24	5-20	4.5-18	F	172	31%	100%	F	199	28%	98%	C	280	15%	96%	C	350	9%	91%	XC	474
	1.258	5.00	4.87	7.5-30	6.3-25	5.5-22	4.8-19	F	170	31%	100%	F	194	29%	98%	C	271	16%	96%	C	340	9%	92%	XC	461
	1.319	5.50	5.36	8-32	6.5-26	5.8-23	5-20	F	168	31%	100%	F	189	30%	98%	M	263	16%	96%	C	331	10%	93%	XC	448
	1.378	6.00	5.85	8.3-33	7-28	6-24	5.3-21	F	166	31%	100%	F	185	31%	98%	M	249	18%	97%	C	314	10%	94%	XC	426
110 -03 Nozzles	Flow L/min	Boom BAR	Tip BAR	Application Speed (L/Ha on 50cm spacing) @				ER110-03		(40281-03)		SR110-03		(40287-03)		MR110-03		(40291-03)		DR110-03		(40286-03)		UR110-03	
				60L/Ha	75L/Ha	100L/Ha	120L/Ha	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD
	0.751	1.25	1.21	3.8-15	3-12	2.3-9	1.9-7.5	F	203	25%	99%														(40292-03)
	0.822	1.50	1.45	4-16	3.3-13	2.5-9.9	2.1-8.2	F	196	27%	99%	C	331	8%	93%										
	0.950	2.00	1.93	4.8-19	3.8-15	2.8-11	2.4-9.5	F	186	30%	99%	C	306	11%	95%	VC	403	6%	85%	XC	488	3%	72%	UC	644
	1.062	2.50	2.41	5.3-21	4.3-17	3.3-13	2.8-11	F	178	33%	98%	C	287	14%	96%	C	376	8%	89%	XC	460	4%	77%	UC	606
	1.163	3.00	2.89	5.8-23	4.8-19	3.5-14	3-12	F	172	35%	98%	C	272	16%	96%	C	354	9%	91%	VC	437	5%	81%	UC	575
	1.256	3.50	3.38	6.3-25	5-20	3.8-15	3.3-13	F	166	37%	98%	M	258	17%	97%	C	335	10%	93%	VC	417	6%	84%	UC	549
	1.343	4.00	3.86	6.8-27	5.3-21	4-16	3.3-13	F	161	39%	97%	M	247	19%	97%	C	319	11%	94%	VC	400	6%	86%	UC	527
	1.424	4.50	4.34	7-28	5.8-23	4.3-17	3.5-14	F	157	40%	97%	M	237	20%	97%	C	305	12%	95%	C	385	7%	87%	UC	507
	1.502	5.00	4.82	7.5-30	6-24	4.5-18	3.8-15	F	153	41%	97%	M	228	21%	98%	C	292	13%	95%	C	372	7%	88%	UC	489
	1.575	5.50	5.30	7.8-31	6.3-25	4.8-19	4-16	F	150	42%	97%	F	220	22%	98%	C	281	14%	96%	C	359	8%	89%	XC	473
	1.645	6.00	5.79	8.3-33	6.5-26	5-20	4-16	F	147	43%	96%	F	212	23%	98%	M	270	14%	96%	C	348	8%	90%	XC	458

NOTE: [1]SR, MR, DR, UR spray tips include pre-orifice(s). Pre-orifices are not interchangeable between different spray tips of different series. [2]Shown application information is based on water @ 80°F in a controlled environment and should not be considered actual. Information is provided for comparison to other Combo-Jet® spray tips, for educational purposes only. Repeat testing results can vary.

COMBO-JET 110° Spray Tips - PWM Spray Systems

Comprehensive rate & speed charts for any nozzle spacing/speed/rate is available on Tip Wizard. Try it today!

Nozzle Size & Angle	Flow Rate L/min	Boom BAR	Tip psi	Application Rate - Litres/Hectare on 50cm Spacing w/ PWM Sprayer System @ Sprayer Speed - kph (25-100% Duty Cycle)				Spray Classification; VMD (Droplet Size in µ); %<141µ (Drift %); %<600µ (Small Droplets)																	
								ER110° Series				SR110° Series				MR110° Series				DR110° Series				UR Series	
								Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD
110 -04 Nozzles	Flow L/min	Boom BAR	Tip BAR	Application Speed (L/Ha on 50cm spacing) @				ER110-04		(40281-04)		SR110-04		(40287-04)		MR110-04		(40291-04)		DR110-04		(40286-04)		UR110-04	
				75L/Ha	100L/Ha	125L/Ha	150L/Ha	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD
	1.081	1.50	1.41	4.3-17	3.3-13	2.5-10	2.2-8.6	M	240	19%	97%														(40292-04)
	1.248	2.00	1.87	5-20	3.8-15	3-12	2.5-10	M	229	21%	97%	C	317	11%	94%	VC	429	4%	82%	XC	524	3%	66%		
	1.396	2.50	2.34	5.5-22	4.3-17	3.3-13	2.8-11	M	221	23%	97%	C	297	13%	95%	VC	399	6%	87%	XC	492	4%	72%	UC	616
	1.529	3.00	2.81	6-24	4.5-18	3.8-15	3-12	F	214	24%	96%	C	281	14%	95%	C	374	7%	90%	VC	467	4%	76%	UC	588
	1.651	3.50	3.28	6.5-26	5-20	4-16	3.3-13	F	208	26%	96%	M	268	16%	96%	C	353	8%	92%	VC	445	5%	79%	UC	565
	1.765	4.00	3.75	7-28	5.3-21	4.3-17	3.5-14	F	203	27%	96%	M	256	17%	96%	C	335	9%	93%	VC	426	5%	81%	UC	544
	1.872	4.50	4.22	7.5-30	5.5-22	4.5-18	3.8-15	F	199	28%	96%	M	246	18%	97%	C	319	10%	94%	VC	410	6%	83%	UC	527
	1.974	5.00	4.69	8-32	6-24	4.8-19	4-16	F	195	29%	96%	M	236	19%	97%	C	304	10%	95%	C	395	6%	85%	UC	510
	2.070	5.50	5.15	8.3-33	6.3-25	5-20	4.3-17	F	191	30%	95%	M	228	20%	97%	C	291	11%	95%	C	381	7%	86%	UC	496
	2.162	6.00	5.62	8.8-35	6.5-26	5.3-21	4.3-17	F	188	30%	95%	M	220	21%	97%	C	280	11%	96%	C	369	7%	87%	UC	483
110 -05 Nozzles	Flow L/min	Boom BAR	Tip BAR	Application Speed (L/Ha on 50cm spacing) @				ER110-05		(40281-05)		SR110-05		(40287-05)		MR110-05		(40291-05)		DR110-05		(40286-05)		UR110-05	
				100L/Ha	125L/Ha	150L/Ha	175L/Ha	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD
	1.33	1.50	1.36	4-16	3.3-13	2.8-11	2.3-9.1	M	249	18%	95%														(40292-05)
	1.53	2.00	1.81	4.5-18	3.8-15	3-12	2.8-11	M	234	21%	95%	C	359	8%	91%										
	1.72	2.50	2.26	5.3-21	4-16	3.5-14	3-12	M	224	23%	95%	C	334	10%	93%	XC	473	4%	74%	XC	522	2%	65%	UC	633
	1.88	3.00	2.72	5.8-23	4.5-18	3.8-15	3.3-13	F	215	26%	95%	C	312	12%	94%	VC	447	5%	78%	XC	505	3%	68%	UC	610
	2.03	3.50	3.17	6-24	4.8-19	4-16	3.5-14	F	207	27%	95%	C	295	13%	95%	VC	424	5%	81%	XC	490	3%	70%	UC	590
	2.17	4.00	3.62	6.5-26	5.3-21	4.3-17	3.8-15	F	201	29%	95%	C	279	14%	96%	VC	405	6%	83%	XC	478	3%	72%	UC	574
	2.30	4.50	4.08	7-28	5.5-22	4.5-18	4-16	F	195	30%	95%	M	265	16%	96%	C	388	7%	84%	XC	467	3%	74%	UC	560
	2.43	5.00	4.53	7.3-29	5.8-23	4.8-19	4.3-17	F	190	31%	95%	M	253	17%	97%	C	373	7%	86%	VC	457	4%	75%	UC	547
	2.54	5.50	4.98	7.8-31	6-24	5-20	4.3-17	F	185	32%	95%	M	242	17%	97%	C	359	7%	87%	VC	448	4%	77%	UC	536
	2.66	6.00	5.43	8-32	6.5-26	5.3-21	4.5-18	F	181	33%	95%	M	232	18%	97%	C	346	8%	88%	VC	440	4%	78%	UC	527
110 -06 Nozzles	Flow L/min	Boom BAR	Tip BAR	Application Speed (L/Ha on 50cm spacing) @				ER110-06		(40281-06)		SR110-06		(40287-06)		MR110-06		(40291-06)		DR110-06		(40286-06)		UR110-06	
				125L/Ha	150L/Ha	175L/Ha	200L/Ha	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD
	1.56	1.50	1.30	3.8-15	3-12	2.8-11	2.4-9.4	C	285	13%	94%														(40292-06)
	1.80	2.00	1.74	4.3-17	3.5-14	3-12	2.8-11	M	270	16%	94%	VC	421	6%	83%										
	2.02	2.50	2.17	4.8-19	4-16	3.5-14	3-12	M	258	18%	94%	C	387	8%	87%	XC	502	3%	69%	XC	559	2%	58%		
	2.21	3.00	2.61	5.3-21	4.5-18	3.8-15	3.3-13	M	249	20%	94%	C	358	9%	90%	XC	481	4%	73%	XC	536	2%	63%	UC	622
	2.39	3.50	3.04	5.8-23	4.8-19	4-16	3.5-14	M	241	21%	95%	C	334	10%	92%	VC	463	4%	76%	XC	517	3%	66%	UC	601
	2.55	4.00	3.48	6-24	5-20	4.3-17	3.8-15	M	234	22%	95%	C	314	12%	93%	VC	447	4%	78%	XC	500	3%	68%	UC	584
	2.71	4.50	3.91	6.5-26	5.5-22	4.8-19	4-16	M	228	23%	95%	C	295	13%	94%	VC	434	5%	80%	XC	485	3%	70%	UC	569
	2.85	5.00	4.35	6.8-27	5.8-23	5-20	4.3-17	M	223	24%	95%	C	279	14%	95%	VC	422	5%	82%	XC	472	3%	72%	UC	556
	2.99	5.50	4.78	7.3-29	6-24	5.3-21	4.5-18	F	218	25%	95%	M	264	14%	95%	VC	411	5%	83%	XC	460	3%	73%	UC	545
	3.12	6.00	5.22	7.5-30	6.3-25	5.3-21	4.8-19	F	213	26%	95%	M	251	15%	96%	C	400	5%	84%	VC	449	4%	75%	UC	534
110 -08 Nozzles	Flow L/min	Boom BAR	Tip BAR	Application Speed (L/Ha on 50cm spacing) @				ER110-08		(40281-08)		SR110-08		(40287-08)		MR110-08		(40291-08)		DR110-08		(40286-08)		UR110-08	
				150L/Ha	200L/Ha	250L/Ha	300L/Ha	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD
	1.98	1.50	1.18	4-16	3-12	2.4-9.5	2-7.9	C	341	12%	89%														(40292-08)
	2.29	2.00	1.58	4.5-18	3.5-14	2.8-11	2.3-9.2	C	315	15%	92%	XC	458	6%	66%										
	2.56	2.50	1.97	5.3-21	3.8-15	3-12	2.5-10	C	295	17%	93%	XC	424	7%	72%										
	2.81	3.00	2.37	5.5-22	4.3-17	3.3-13	2.8-11	C	278	19%	94%	XC	396	8%	76%	UC	509	5%	57%	UC	593	3%	44%	UC	637
	3.03	3.50	2.76	6-24	4.5-18	3.8-15	3-12	M	264	20%	95%	VC	372	9%	79%	UC	483	5%	61%	UC	569	4%	47%	UC	612
	3.24	4.00	3.16	6.5-26	4.8-19	4-16	3.3-13	M	252	21%	95%	C	351	10%	81%	XC	461	6%	65%	UC	548	4%	50%	UC	591
	3.44	4.50	3.55	7-28	5.3-21	4.3-17	3.5-14	M	241	22%	96%	C	333	10%	83%	XC	441	6%	67%	UC	530	4%	52%	UC	573
	3.62	5.00	3.95	7.3-29	5.5-22	4.3-17	3.5-14	M	232	23%	96%	C	317	11%	85%	XC	424	6%	69%	UC	513	4%	54%	UC	557
	3.80	5.50	4.34	7.5-30	5.8-23	4.5-18	3.8-15	F	223	24%	96%	C	302	11%	86%	XC	408	7%	71%	UC	498	4%	56%	UC	543
	3.97	6.00	4.74	8-32	6-24	4.8-19	4-16	F	215	25%	96%	C	289	12%	87%	XC	394	7%	73%	UC	485	5%	57%	UC	531
110 -10 Nozzles	Flow L/min	Boom BAR	Tip BAR	Application Speed (L/Ha on 50cm spacing) @				ER110-10		(40281-10)		SR110-10		(40287-10)		MR110-10		(40291-10)		DR110-10		(40286-10)		UR110-10	
				200L/Ha	250L/Ha	300L/Ha	350L/Ha	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD
	2.71	2.00	1.41	4-16	3.3-13	2.8-11	2.3-9.3	VC	360	10%	88%														(40292-10)
	3.03	2.50	1.77	4.5-18	3.8-15	3-12	2.5-10	C	339	12%	90%	XC	440	7%	68%										
	3.32	3.00	2.12	5-20	4-16	3.3-13	2.8-11	C	322	14%	91%	XC	410	8%	72%	UC	520	4%	53%	UC	607	5%	58%		
	3.58	3.50	2.47	5.5-22	4.3-17	3.5-14	3-12	C	308	16%	91%	XC	385	9%	76%	UC	495	5%	57%	UC	594	5%	56%	UC	617
	3.83	4.00	2.82	5.8-23	4.5-18	3.8-15	3.3-13	C	296	17%	92%	VC	363	9%	78%	XC	474	5%	60%	UC	582	5%	54%	UC	595
	4.06	4.50	3.18	6-24	5-20	4-16	3.5-14	C	285	18%	92%	C	344	10%	80%	XC	455	5%	62%	UC	572	5%	52%	UC	577
	4.28	5.00	3.53	6.5-26	5.3-21	4.3-17	3.8-15	M	275	19%	93%	C	327	10%	82%	XC	438	6%	65%	UC	563	6%	51%	UC	561
	4.49	5.50	3.88	6.8-27	5.5-22	4.5-18	3.8-15	M	266	20%	93%	C	312	11%	83%	XC	423	6%	66%	UC	555	6%	49%	UC	546
	4.69	6.00	4.24	7-28	5.8-23	4.8-19	4-16	M	258	21%	94%	C	298	11%	84%	XC	409	6%	68%	UC	548	6%	48%	UC	534
110 -125 Nozzles	Flow L/min	Boom BAR	Tip BAR	Application Speed (L/Ha on 50cm spacing) @				ER110-125		(40281-125)		SR110-125		(40287-125)		MR110-125		(40291-125)		DR110-125		(40286-125)			
				250L/Ha	300L/Ha	350L/Ha	400L/Ha	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600		
	3.51	2.50	1.52	4.3-17	3.5-14	3-12	2.8-11	XC	433	8%	67%														
	3.84	3.00	1.82	4.5-18	3.8-15	3.3-13	3-12	XC	412	9%	71%	XC	439	6%	67%										
	4.15	3.50	2.12	5-20	4.3-17	3.5-14	3-12	XC	395	10%	74%	XC	409	6%	71%	UC	638	4%	36%	UC	661	3%	33%		
	4.44	4.00	2.42	5.3-21	4.5-18	3.8-15	3.3-13	XC	381	10%	77%	XC	383	7%	75%	UC	614	4%	40%	UC	645	3%	35%		
	4.71	4.50	2.73	5.8-23	4.8-19	4-16	3.5-14	VC	369	11%	79%	VC	361	7%	77%	UC	592	4%	44%	UC	630	4%	37%		
	4.96	5.00	3.03	6-24	5-20	4.3-17	3.8-15	VC	358	11%	80%	C	341	8%	79%	UC	573	4%	46%	UC	617	4%	39%		
	5.20	5.50	3.33	6.3-25	5.3-21	4.5-18	4-16	C	348	12%	81%	C	323	8%	81%	UC	556	5%	49%	UC	606	4%	40%		
	5.43	6.00	3.64	6.5-26	5.5-22	4.8-19	4-16	C	339	12%	83%	C	308	8%	82%	UC	541	5%	51%	UC	595	4%	41%		
110 -15 Nozzles	Flow L/min	Boom BAR	Tip BAR	Application Speed (L/Ha on 50cm spacing) @				ER110-15		(40281-15)		SR110-15		(40287-15)		MR110-15		(40291-15)		DR110-15		(40286-15)			
				300L/Ha	400L/Ha	450L/Ha	500L/Ha	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600		
	4.26	3.00	1.55	4.3-17	3.3-13	2.8-11	2.5-10	XC	426	9%	66%														
	4.60	3.50	1.81	4.5-18	3.5-14	3-12	2.8-11	XC	411	10%	69%	XC	460	6%	64%										
	4.91	4.00	2.07	5-20	3.8-15	3.3-13	3-12	XC	398	10%	71%	XC	441	7%	67%	UC	608	4%	40%	UC	660	3%	40%		
	5.21	4.50	2.32	5.3-21	4-16	3.5-14	3.3-13	XC	386	11%	73%	XC	423	7%	69%	UC	594	4%	42%	UC	645	4%	42%		
	5.49	5.00	2.58	5.5-22	4-16	3.8-15	3.3-13	XC	376	12%	75%	XC	407	7%	71%	UC	582	4%	44%	UC	632	4%	44%		
	5.76	5.50	2.84	5.8-23	4.3-17	3.8-15	3.5-14	VC	367	12%	76%	XC	393	8%	72%	UC	571	5%	46%	UC	621	4%	46%		
	6.02	6.00	3.10	6-24	4.5-18	4-16	3.5-14	VC	358	12%	77%	XC	380	8%	74%	UC	560	5%	47%	UC	610	4%	48%		
110 -20 Nozzles	Flow L/min	Boom BAR	Tip BAR	Application Speed (L/Ha on 50cm spacing) @				ER110-20		(40281-20)		SR110-20		(40287-20)		MR110-20		(40291-20)							
				400L/Ha	500L/Ha	600L/Ha	700L/Ha	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600						
	5.22	3.50	1.31	4-16	3.3-13	2.5-10	2.3-9	UC	502	6%	55%														
	5.59	4.00	1.50	4.3-17	3.3-13	2.8-11	2.4-9.6	UC	488	7%	57%														
	5.92	4.50	1.69	4.5-18	3.5-14	3-12	2.5-10	XC	475	7%	60%	XC	412	8%	72%										
	6.24	5.00	1.88	4.8-19	3.8-15	3-12	2.8-11	XC	464	8%	62%	XC	398	8%	74%										
	6.55	5.50	2.06	5-20	4-16	3.3-13	2.8-11	XC	454	8%	64%	XC	385	8%	75%	UC	594	4%	42%						
	6.84	6.00	2.25	5.3-21	4-16	3.5-14	3-12	XC	444	8%	65%	VC	373	9%	77%	UC	583	5%	44%						

Nozzle size limitations for PWM: PWM solenoids will have a level of pressure loss through the solenoid, so nozzle sizes larger than a -15 will generally be less feasible.

NOTE: [1]SR, MR, DR, UR spray tips include pre-orifice(s). Pre-orifices are not interchangeable between different spray tips of different series. [2]Shown application information is based on water @ 80°F in a controlled environment and should not be considered actual. Information is provided for comparison to other Combo-Jet® spray tips, for educational purposes only. Repeat testing results can vary.

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NEW

COMBO-JET® Narrow-Angle Nozzles for Specialty/Spot Spraying

A full selection of narrow angle spray nozzles for use in specialty applications that require a narrow, but thick pattern. These nozzles are fully compatible with PWM spray systems, and other optical spray systems. Contact factory for availability.

What is optical spot spraying?

Optical spraying systems, or spot spraying based on optical feedback is used for a variety of purposes and with different mode of actions.

Spray on Green

Optics identify 'green' targets in field, and sprays them.

Examples include:

- Spraying herbicides to clear out established weeds before planting.
- Spraying Fungicide in-crop to any plants in field, skipping bare ground.
- Use more expensive modes of actions to manage resistant weeds.
- Foliar fertilizer applications on plant only

Green on Green

Optics & computer differentiate plants in field and spray target plants only.

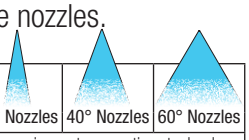
Examples include:

- Spraying weeds ONLY with herbicide, avoiding planted crop.
- Spraying crop with fungicide, ignoring weeds or non-target plants.

While the potential benefits of **Green on Green** provide a great deal of flexibility & means to use cost-prohibitive herbicide regimens, the means to differentiate plants at application time and development of the computing power and learning mechanisms are continually under development.

COMBO-JET® ER & DX Series of 20°, 40° & 60° Narrow-Angle Spray Nozzles for Spot Spraying

A new series of **DX** drift reduction, narrow angle nozzles.



Nozzle Size & Angle	Flow Rate L/min	Boom BAR	Application Rate in Litres/Hectare on 25cm Nozzle Spacing @ Sprayer Speed in km/h					20° Nozzles	40° Nozzles	60° Nozzles
For smaller sizes of nozzles in narrow-angle varieties, please contact Wilger. As spot-spraying systems continue to develop, Wilger expects to have a variety of nozzles developed in turn to support the new improvements to maximize effectiveness.										
-04 Nozzles	Flow L/min	Boom BAR	Application Speed (L/Ha on 25cm spacing) @ 150L/Ha	200L/Ha	250L/Ha	275L/Ha	300L/Ha	20-04	40-04	60-04
	1.289	2.00	21	15	12	11	10	Drift Reduction DX20-04	Drift Reduction DX40-04	Drift Reduction DX60-04
	1.442	2.50	23	17	14	13	12			
	1.579	3.00	25	19	15	14	13			
	1.824	4.00	29	22	18	16	15	Fine Spray ER20-04	Fine Spray ER40-04	Fine Spray ER60-04
	2.039	5.00	33	24	20	18	16			
-05 Nozzles	Flow L/min	Boom BAR	Application Speed (L/Ha on 25cm spacing) @ 175L/Ha	200L/Ha	250L/Ha	300L/Ha	350L/Ha	20-05	40-05	60-05
	1.61	2.00	22	19	15	13	11	Drift Reduction DX20-05	Drift Reduction DX40-05	Drift Reduction DX60-05
	1.80	2.50	25	22	17	14	12			
	1.97	3.00	27	24	19	16	14			
	2.28	4.00	31	27	22	18	16	Fine Spray ER20-05	Fine Spray ER40-05	Fine Spray ER60-05
	2.55	5.00	35	31	24	20	17			
-06 Nozzles	Flow L/min	Boom BAR	Application Speed (L/Ha on 25cm spacing) @ 200L/Ha	250L/Ha	300L/Ha	350L/Ha	400L/Ha	20-06	40-06	60-06
	1.93	2.00	23	19	15	13	12	Drift Reduction DX20-06	Drift Reduction DX40-06	Drift Reduction DX60-06
	2.16	2.50	26	21	17	15	13			
	2.37	3.00	28	23	19	16	14			
	2.74	4.00	33	26	22	19	16	Fine Spray ER20-06	Fine Spray ER40-06	Fine Spray ER60-06
	3.06	5.00	37	29	24	21	18			
-08 Nozzles	Flow L/min	Boom BAR	Application Speed (L/Ha on 25cm spacing) @ 300L/Ha	350L/Ha	400L/Ha	450L/Ha	500L/Ha	20-08	40-08	60-08
	2.58	2.00	21	18	15	14	12	Drift Reduction DX20-08	Drift Reduction DX40-08	Drift Reduction DX60-08
	2.88	2.50	23	20	17	15	14			
	3.16	3.00	25	22	19	17	15			
	3.65	4.00	29	25	22	19	18	Fine Spray ER20-08	Fine Spray ER40-08	Fine Spray ER60-08
	4.08	5.00	33	28	24	22	20			
-10 Nozzles	Flow L/min	Boom BAR	Application Speed (L/Ha on 25cm spacing) @ 400L/Ha	450L/Ha	500L/Ha	600L/Ha	650L/Ha	20-10	40-10	60-10
	3.22	2.00	19	17	15	13	12	Drift Reduction DX20-10	Drift Reduction DX40-10	Drift Reduction DX60-10
	3.60	2.50	22	19	17	14	13			
	3.95	3.00	24	21	19	16	15			
	4.56	4.00	27	24	22	18	17	Fine Spray ER20-10	Fine Spray ER40-10	Fine Spray ER60-10
	5.10	5.00	31	27	24	20	19			
-125 Nozzles	Flow L/min	Boom BAR	Application Speed (L/Ha on 25cm spacing) @ 500L/Ha	600L/Ha	700L/Ha	800L/Ha	900L/Ha	20-125	40-125	60-125
	4.03	2.00	19	16	14	12	11	Drift Reduction DX20110	Drift Reduction DX40110	Drift Reduction DX60110
	4.51	2.50	22	18	15	14	12			
	4.94	3.00	24	20	17	15	13			
	5.70	4.00	27	23	20	17	15	Fine Spray ER20110	Fine Spray ER40110	Fine Spray ER60110
	6.37	5.00	31	25	22	19	17			
For larger sizes of nozzles in narrow-angle varieties, please contact Wilger. As spot-spraying systems continue to develop, Wilger expects to have a variety of nozzles developed in turn to support the new improvements to maximize effectiveness.										

What is the DX series of spray tip?

Effectively through development of the narrow angle nozzles, there seems to be a relative sweet spot for consistent coverage and maintaining a reasonable level of driftable fines.

Since optical/spot sprayers are commonly sharing a maximum speed and narrow spacing, it is easier to consolidate what Wilger finds as a good middle ground to offer a single drift reduction nozzle.

That being said, if you have a significant need for a coarser option than the DX nozzle, by all means contact Wilger and we would likely have something that might be made available to you.

Other uses for narrow-angle nozzles

Narrow angle spray nozzles are also key in improving some non-standard broadcast field spraying.

Narrower angle nozzles can be used in applications that specifically target certain parts of the plant where application to the rest of the plant is waste.

There are also cropping applications that might be continually cropping into **high stubble**, where traditional wide angle nozzles will result in significant spray catch and run-off in the stubble.

It is important to recognize narrow angle nozzles are not to be used strictly as replacements for nozzles that are intended for your sprayer (e.g. 80° or 110°). They are only an option to further isolate and target a spray target to achieve better spray efficiency and minimize chemical waste.

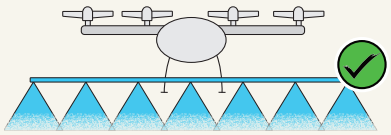
Are they still PWM-compatible?

PWM APPROVED

Absolutely!

The narrow angles use the same drift reduction design that is completely compatible with optical spray systems that are typically driven by PWM solenoids. The consistent thickness of the narrow angles make the key choices for optical spot sprayers for both compatibility and performance.

Are DX nozzles used on Drone Sprayers?



UAV sprayer applicators are able to use DX nozzles for targeted spray applications, but often due to boom constraints or UAV sprayer outfitting, wider angle nozzles like the MR110° nozzles might be used. In specialty circumstances that require a narrow full pattern spray can take advantage of the DX series of narrow-angle nozzles.

DX nozzles can be used on UAV sprayers, but they would likely be specialty applications or on sprayers that require very narrow spacing.

Contact WILGER offices for smaller sizes of DX nozzles for Drone applications.

LERAP Drift Reduction Star Rating for COMBO-JET Spray Nozzles [For UK applicators]

Local Environmental Risk Assessments for Pesticides (LERAP) certification is completed in the UK to provide applications a means to qualify a local drift reduction assessment based on the nozzles used for an application. Stay tuned for further LERAP nozzle testing for more nozzles.

LERAP RATING	Nozzle	Pressure Range
**** 90% Drift Reduction	DR110-03	1.0 - 1.5 BAR
	DR110-05	1.0 - 1.5 BAR
	DR110-06	1.0 - 3.0 BAR
	MR110-05	1.0 - 1.5 BAR
	MR110-06	1.0 - 1.5 BAR

The 4-star LERAP rating is a new rating that illustrates the highest classification for drift reduction within the standard certification. (List updated January 2021)

LERAP RATING	Nozzle	Pressure Range
*** 75% Drift Reduction	DR110-025	1.0 - 2.5 BAR
	DR110-03	1.6 - 3.0 BAR
	DR110-04	1.0 - 5.0 BAR
	DR110-05	1.6 - 5.0 BAR
	DR110-06	3.1 - 5.0 BAR
	MR110-04	1.0 - 2.5 BAR
	MR110-05	1.6 - 5.0 BAR
	MR110-06	1.6 - 5.0 BAR
	SR110-05	1.0 - 1.5 BAR

LERAP RATING	Nozzle	Pressure Range
** 50% Drift Reduction	DR110-025	2.6 - 3.5 BAR
	DR110-03	3.1 - 5.0 BAR
	MR110-04	2.6 - 3.5 BAR
	SR110-05	1.6 - 3.0 BAR

For the updated list on COMBO-JET nozzles, visit www.wilger.net/LERAP

More information on LERAP certification, process, and the most up to date listing of approved nozzles and their ratings, is available from the Health and Safety Executive (HSE), also available online @ **https://secure.pesticides.gov.uk/SprayEquipment**

COMBO-JET® Cap Adapters

Order #####-V0 for viton o-ring assemblies

Wilger manufacturers a variety of adapters to adapt Wilger nozzles to other brands of nozzle bodies (e.g. Teejet, Hypro, Arag, etc) and vice versa. All adapters self-align cap to common nozzle offset.

Square Lug to *COMBO-JET*

40204-00
Converts Square Lug (e.g. Teejet/Hypro) Outlet to COMBO-JET
-TWISTLOCK-

COMBO-JET to Square Lug

40203-00
Converts COMBO-JET Outlet to Square Lug (e.g. Teejet/Hypro)
-Quarter Turn-

HARDI to *COMBO-JET*

40202-00
Converts HARDI Outlet to COMBO-JET
-Semi-permanent snap on adapter-

AGRIFAC to *COMBO-JET*

40205-00
Converts Agrifac Outlet to COMBO-JET
-Easy nozzle sleeve-
snap into any Combo-Jet nozzle

Square Lug to *DOUBLE-DOWN*

40206-00
Converts Square Lug Outlet (e.g. Teejet/Hypro) to COMBO-JET Double-Down Outlets
-TWISTLOCK-

JACTO to *COMBO-JET*

40207-00
Converts Jacto Outlet to *COMBO-JET*
-Quarter Turn-

Radialock Slotted Caps (Compatible with *COMBO-JET* outlets)

Wilger manufacturers a variety of caps for accepting flanged spray tips onto any Combo-Jet or Combo-Rate nozzle outlets. These caps require a spray tip gasket to seal, which is sold separately.

Gasket for Slotted Caps

40160-00
EPDM Rubber Gasket for Flanged Tips & Radialock slotted caps
Order 40160-V0 for viton gasket

3/8" Slot

40269-05
For 3/8" Teejet/Hypro spray tips

1/2" Round Slot

40271-05
For 1/2" round spray tips

Available in colors: Grey (-09), Orange (-08), Brown (-07), Blue (-06), Black (-05), Yellow (-04), Green (-03), White (-02), Red (-01)

7/16" Wide Slot

40276-05
For larger Teejet/Hypro spray tips

HARDI Tip Slot

40275-05
For HARDI brand spray tips

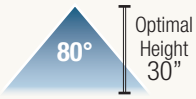
Available in colors*: Black (-05), Yellow (-04), Green (-03), White (-02), Red (-01) *Check factory availability of non-black colors.

Conventional Flat Fan Flanged Spray Tips (3/8" slot)

Wilger manufacturers a variety of sizes of flanged stainless steel spray tips inserted permanently into a flanged spray tip assembly. These would correspond to Combo-Jet ER series of spray nozzle, as they are a conventional flat fan tip.

ER 80° Flanged Tips

40170-04



ER 110° Flanged Tips

40169-04

Stainless Steel Insert

Color-coded to flow rate & stamped for easy identification

Tip Size	-005	-0067	-01	-015	-02	-025	-03	-04	-05	-06	-08
80° ER Tip	ER80-005	ER80-007	ER80-01	ER80-015	ER80-02	ER80-025	ER80-03	ER80-04	ER80-05	ER80-06	ER80-08
Part #	40170-005	40170-007	40170-01	40170-015	40170-02	40170-025	40170-03	40170-04	40170-05	40170-06	40170-08
110° ER Tip	-	-	ER110-01	ER110-015	ER110-02	ER110-025	ER110-03	ER110-04	ER110-05	ER110-06	ER110-08
Part #	-	-	40169-01	40169-015	40169-02	40169-025	40169-03	40169-04	40169-05	40169-06	40169-08

For flow rate charts, spray quality, and more information on flanged spray tips, reference the 80° and 110° spray nozzle charts.

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COMBO-JET® Caps, Adapters & Strainers

Wilger manufacturers a variety of caps that are used for metering flow rates (through hose barb, push-in tube, or streamer caps) or used as accessories for other spraying or plumbing functions.

Plug Caps

Caps unused Combo-Jet nozzle body outlets

40272-B5

Plug Cap	
Assembled Plug	Cap Only
40272-B5	40272-05

Double Nozzle Spraying Adapters

Be sure to read the 'Tip Selection Guide for Double Nozzle Spraying

Y-Adapter or 'Double-Down' mode?

To split up a high volume, coarse spray nozzle into two more meaningful spray qualities. Y-adapter is excellent for vertical growing targets, double-down is better into thick canopies.

PWM-Ready Double Nozzle Spraying

Just add the two nozzle sizes together for your PWM nozzle flow*

For example: MR110-04 + SR110-06 = 110-10

*PWM solenoid pressure drop would be based on -10 size

Threaded Outlet Adapters

Threaded adapter caps can be used for any application that would require a threaded fitting.

Threaded Outlet Caps		
Thread Size	FKM O-ring Assy	Cap Only
1/8" NPT-F	40277-B5	40277-05
1/4" NPT-F	40273-B5	40273-05
45° 1/4" NPT-F	40274-B5	40274-05

Y Splitter [60° Forward/Back]

Spray forward and backward for high volume and fungicide spray applications.

40440-00

Y Splitter Cap (60° forward, 60° backward)		
Cap ONLY	w/ FKM O-ring	w/ viton O-ring
40440-01	40440-00	40440-V0

Double-Down Adapter

New

Splitter used to spray with two nozzles to make more effective spray quality

40441-00

Double-Down Adapter Cap		
Cap ONLY	w/ FKM O-ring	w/ viton O-ring
40441-01	40441-00	40441-V0

Hose Barb Caps

Hose barb caps can be used as manifold plumbing parts or for metering flow.

Hose Barb Caps		
Barb Size	FKM O-ring Assy	Cap Only
1/8"	40420-B5	40420-05
1/4"	40422-B5	40422-05
3/8"	40424-B5	40424-05
1/2"	40426-B5	40426-05

To use cap for metering, order CAP ONLY, with o-ring and 40285-## metering orifice.

Push-in-Tube Caps

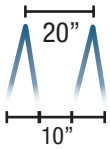
Quick connect tube caps seal on the outside diameter of a tube, and used as manifold plumbing parts or for metering flow.

Quick Connect/Push-in-tube Caps		
Tube Size (O.D.)	FKM O-ring Assy	Cap Only
1/4"	40435-B5	40435-05
5/16"	40437-B5	40437-05
3/8"	40436-B5	40436-05

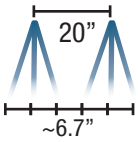
To use cap for metering, order CAP ONLY, with o-ring and 40285-## metering orifice.

2-Hole & 3-Hole Streamer Caps

2-hole streamer caps are used to stream liquid fertilizer for 10" coverage



3-hole streamer caps are used to stream liquid fertilizer for ~6.67" coverage



Drilled Fertilizer Streamer Caps [CAP ONLY]			
Cap Size	Flow Range	2-Hole Cap	3-Hole Cap
Small	0.05 - 0.4 us gpm	40432-047	40433-047
Medium	0.2 - 1.0 us gpm	40432-086	40433-067
Large	0.5 - 3.0 us gpm	40432-104	40433-104

COMBO-JET Cap O-rings

40260-00
FKM

13mm x 3mm o-ring for *COMBO-JET®* Caps & Spray Tips

40260-V0
viton

40261-00

Adapter for non-metering caps Seal adapter is used to keep o-ring in place if metering orifice is NOT used

'-B5' Assembly Breakdown - For non-metering apps

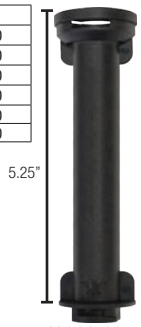
For applications that do not required liquid metering orifices (e.g. plumbing manifolds), the -B5 is an assembly that includes an o-ring (#40260-00), seal adapter (#40261-00 in lieu of orifice), and cap.

New Hose Drop & Extension Caps

Hose Drop Caps are used to feed or spray down below a canopy to minimize crop contact.

Outlet	Length	Part #
Combo-Jet to Combo-Jet	2"	40210-00
	5"	40211-00
Combo-Jet Cap to 1/4" NPT-M	16"	22026-00
	24"	22036-00
	36"	22038-00
	48"	22048-00

40210-00
2" Combo-Jet Cap Extension



40211-00
5" Combo-Jet Cap Extension

22021-00

Other styles of Hose Drop Assemblies using threaded inlets are also available. Find them in the DRY BOOMS section of the catalog.

Ordering [Drilled] Streamer Caps

For drilled streamer cap assembly, order:

1. Metering Orifice (40285-## series)*
2. Streamer cap (2 or 3 hole, sized to flow range)
3. O-ring seal (40260-00 or 40260-V0)
4. [Optional] Slotted Strainer

For selecting metering orifices to fit your application, use Tip Wizard, consult flow charts, or use other tools available at www.wilger.net.

COMBO-JET Snap-in Strainers

Combo-jet strainers snap into the metering orifice or seal adapter for a 'one-piece'-handling cap

Stainless Steel for Chemical Spraying

Slotted Plastic Strainer for Fertilizer

40250-00 40251-00 40249-00 40248-00

Strainers			
Mesh Size	Slotted Strainer	Stainless Mesh	Color
100 mesh	-	#40251-00	Green
50 mesh	40249-00	#40250-00	Blue
25 mesh	40248-00	-	Yellow
16 mesh	40247-00	-	Gray

Molded 3-hole Streamers Available in 2022.

Deflector Plate 3-hole fertilizer streamer nozzle improves stream consistency at higher pressures for improved application.

Next page for info.

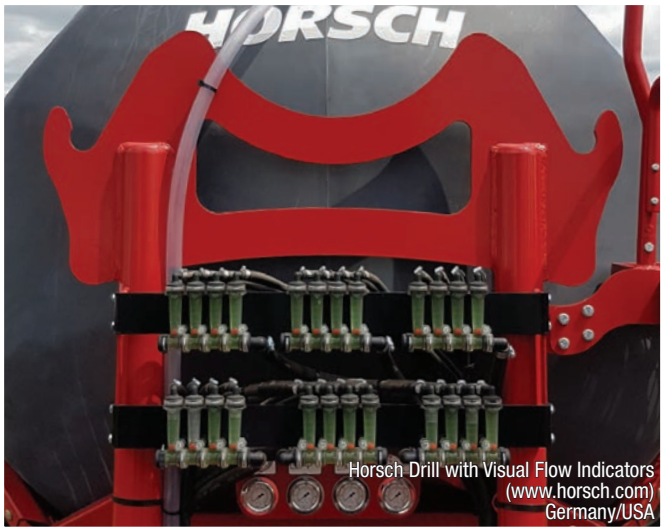
Case IH Sprayer with AimCommand Flex
(www.caseih.com)
USA

Wilger makes spray tips for applicators who care about how they spray.

Smithco Sprayer with PinPoint II
(www.smithco.com)
USA

Pattison Connect Autonomous OMNI Sprayer with recirculating boom
(www.liquidsystems.net/connect)
Canada

Wilger makes nozzle bodies & components that address and support best practices being developed in the crop protection industry.



Horsch Drill with Visual Flow Indicators
(www.horsch.com)
Germany/USA

RECORD Flow Monitoring System partnered with LLC TRACK
(www.seeding.com.ua)
Ukraine

Wilger makes flow monitoring & metering components that are critical to maintaining effective and consistent application.

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