ENGINEERING YOUR SPRAY SOLUTION



## Agricultural Spray Nozzles 2018 US Catalog



## LECHLER AGRICULTURAL SPRAY NOZZLES – GOOD FOR YOUR CROP, GOOD FOR THE ENVIRONMENT

Lechler is a world leader in nozzle technology. For over 135 years, we have pioneered numerous groundbreaking developments in the field of nozzle technology. Comprehensive nozzle engineering know-how is combined with a deep understanding of application-specific requirements to create products that offer outstanding precision, reliability and durability.



The application technology and here particularly the plant protection nozzles must therefore meet very high requirements. Today, nozzles must offer a degree of precision that would have been considered impossible just a few years ago.

As a globally leading manufacturer of precision nozzles, Lechler is ideally prepared to meet this challenge. For decades now, our products have set the technological standards in the fields of crop protection and liquid fertilizer application. Through regular and extensive investment in research and development, we ensure that this will also remain the case in the future. The functions and characteristics of our precision nozzles are defined exactly and objectively right from the start. This process is based on sophisticated measuring techniques and our proven documentation system.

State-of-the-art design and simulation techniques guarantee practically-oriented products with a high practical value.

With Lechler nozzles, one spray jet is the same as the next. This demands a high level of precision and care in production. Our processes are therefore subject to

permanent quality control measures, from the incoming goods department, through development and production right up to dispatch. Our quality management system is based primarily on the requirements of our customers and is certified in accordance with ISO 9001:2008. Lechler nozzles comply with the requirements of the Julius Kühn Institute, the German Plant Protection Act as well as European EN and international ISO standards.

Thanks to close cooperation and active exchange of information with official test institutes, the chemicals and liquid fertilizer industry, the equipment manufacturers and last but not least agricultural consultants, we also ensure that we are fully upto-date on current practical requirements. After all, one thing is certain: solutions for practical applications can only be developed from practical knowledge.

This catalog contains our comprehensive Lechler agricultural spray nozzle product information.



## PROGRESS MEANS FURTHER DEVELOPMENT

Therefore, success is not a final state for us, but simply a further step on the way to even greater perfection.



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## SELECTING THE RIGHT NOZZLES FOR YOUR OPERATION

Coverage, drift, biological and ecological efficacy have to be in a good balance to make your spraying a success. Lechler spray tips ensure you for all kind of application. Every time.

## Have confidence when choosing Lechler.

## Technical requirements

Lechler meets requirements of JKI, ENTAM as well as the international EN/ISO standards. This ensures an optimum use of your plant protection program flow rates and spray pattern coverage uniformity.



## Biological requirements

In order to achieve the optimum effect, application of plant protection products must be as precise as possible. Lechler precision nozzles achieve exact dosage and uniform distribution. Flat spray nozzles generally achieve good crop penetration (e.g. mildew control in cereal crops). Double flat spray nozzles cover vertical targets well, covering tall grasses and cereal grains. In no till or cloddy soil conditions, they help eliminate spray shadow gaps.

#### Environmentallyrelevant requirements

As much as necessary, as little as possible. For effective plant protection, the sprayed products must reach their targets. It is essential to reduce drift and post application movement by respecting weather conditions in your treatment time window.

## Drift-reducing technology

Application guidelines for plant protection products buffer zones, field boundaries, etc. - are defined to protect sensitive non target areas. The setback distances from open water and field boundaries can be reduced with the use of air induction and off center nozzles. The result: improved yields and respect for your neighbors.



## **INNOVATIVE NOZZLE DESIGN – THE LECHLER IDTA**

It is one thing to be aware of the requirements to achieve good crop production. It is another to create a product that will fulfill these. A good example is the new IDTA with its operator friendly design. The IDTA is a high drift reducing asymmetrical twin flat spray air – induction nozzle for optimal coverage at

higher driving speeds. The innovative development in the wide range of agricultural spray nozzles is suitable for a wide range of applications.

#### Optimized twin flat spray concept

For best deposition on vertical targets the IDTA has asymmetric spray angles of 120° to the front and 90° to the back. With the angling of 30° to the front and 50° to the back the actual spray width at the target is the same. Also the spray volume is divided 60 % to the front and 40 % to the back to get best results at higher driving speeds.

#### Facts

To prove the high efficiency of the IDTA, field tests have been conducted. Deposition on vertical targets was checked with water sensitive paper. The testing was done with an Amazone UF 1201 sprayer with a 50 foot boom. Results show significant differences on the front and back sides of the targeted areas among the nozzle styles.

Туре	Lechler ID 120-03 (ID3)	Lechler IDTA 120-03	Competitor Asym. DF 110-03
Pressure	12kmh/7.5mph	12kmh/7.5mph	12kmh/7.5mph
Speed	12 kmh/7.5mph	12 kmh/7.5mph	12 kmh/7.5mph
Deposit towards front Coverage in % + Droplet number/ cm <sup>2</sup>	5.4 % + 5 d/cm <sup>2</sup>	15.5 % + 10 d/cm <sup>2</sup>	5.9 % + 5.6 d/cm <sup>2</sup>
Deposit towards back Coverage in % + Droplet number/ cm <sup>2</sup>	9.5 % + 24.9 d/cm <sup>2</sup>	30.2 % + 60.7 d/cm <sup>2</sup>	27.2 % + 63.5 d/cm <sup>2</sup>

#### More applications

As a result of the different spray angles and volume rates, the droplet spectrum is changed. Finer spray to the front is for excellent coverage and coarser to the back is for better drift stability. This enables the IDTA nozzle to spray under conditions when other nozzles have to stop.



#### **The Bottom Line**

Compared to standard air-injector nozzles, our ID-120-03, the IDTA results in clear advantages in the field:

- Double overall coverage
- Significant higher total deposit on the front and back of vertical targets
- More uniform coverage on front and back



## NOZZLE RECOMMENDATIONS FOR PESTICIDE APPLICATION BY CROP GROWTH STAGES











## THE LECHLER NOZZLE LINE UP

	ID/ID3	IDK	IDTA	IDKT	PRE	AD	QS 80	LU	ST/SC	DF
		Ţ	Ð	1	P					<b>60</b>
Spray pattern geometry										
Drift potential	extremely low	very low	extremely low	very low	extremely low	low	low/ medium	low/ medium	medium	medium

#### **Broadcast spraying**

Recommended press	ure range (PSI)	30-115	15-90	15-120	15-90	20-120	20-90	20-75	20-75	30-75	30-75
	soll incorporated	••	••	••	••	••	••	••	••	•	-
	pre-emerge	••	••	••	••	••	••	••	••	•	-
Herbicides	post-emerge (systemic)	••	••	••	••	-	••	••	••	•	0
	post-emerge (contact)	•	•	••	••	-	•	••	••	•	••
	Contact	•	•	••	••	-	•	••	••	•	••
Fungicides	Systemic	••	••	••	••	-	••	••	••	•	•
lass stisistes	Contact	•	•	••	••	-	•	••	••	•	••
Insecticides	Systemic	••	••	••	••	-	••	••	••	•	•
Liqui	d fertilizer	••	••	0	0	••	•	0	0	0	-
Growth regulators		••	••	•	•	-	••	••	••	•	0
Irrigation (via boom)		••	••	••	••	••	••	•	•	•	-

#### Banding/row spraying – speciality crops

Recommended press	ure range (PSI)	-	-	-	-	-	-	-	-	-	-
	soll incorporated	-	-	-	-	-	-	-	-	-	-
	pre-emerge	-	-	-	-	-	-	-	-	-	-
Herbicides	post-emerge (systemic)	-	-	-	-	-	-	-	-	-	-
	post-emerge (contact)	-	-	-	-	-	-	-	-	-	-
	Contact	-	-	-	-	-	-	-	-	-	-
Fungicides	Systemic	-	-	-	-	-	-	-	-	-	-
	Contact	-	-	-	-	-	-	-	-	-	-
Insecticides	Systemic	-	-	-	-	-	-	-	-	-	-
Liquid fertilizer		-	-	-	-	-	-	-	-	-	-
Growth regulators		-	-	-	-	-	-	-	-	-	-
Irrigation (via boom)		-	-	-	-	-	-	-	-	-	-



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FT	TR	ITR	FD	FL	IS	IDKS	BN	ос	ES	ID 90	IDK 90	AD 90
Ţ			T			Ţ	J	2	<b>_</b>		T	-
low/ medium	medium	extremely low	extremely low	extremely low	extremely low	very low	low/ medium	medium	medium	extremely low	very low	low

10-40	40-290	40-435	20-60	15-75	30-115	15-90	10-40	20-75	15-60	30-115	20-90	20-90
••	0	••	-	-	••	••	-	••	-	••	••	••
••	0	0	-	-	••	••	-	••	-	••	••	••
•	0	0	-	-	••	••	-	••	-	••	••	••
•	••	-	-	-	•	•	-	••	-	•	•	•
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•	-	••	••	••	••	••	-	0	-	••	••	•
•	•	0	-	-	••	••	-	••	-	••	••	••
-	-	•	••	•	••	••	-	•	-	••	••	••

-	40-115	-	-	-	30-115	15-90	10-40	20-75	15-60	-	-	-
-	0	-	-	-	••	••	••	••	••	-	-	-
-	0	-	-	-	••	••	••	••	••	-	-	-
-	0	-	-	-	••	••	••	••	••	-	-	-
-	••	-	-	-	•	•	••	••	••	-	-	-
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-	-	-	-	-	••	••	0	0	0	-	-	-
-	0	-	-	-	••	••	••	••	••	-	-	-
-	-	-	-	-	••	••	••	•	•	-	-	-

Always follow product label instructions

 $\bullet \bullet$  = very well-suited  $\bullet$  = well-suited  $\bigcirc$  = less well-suited - unsuitable

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# ID/ID3 Air Induction flat spray nozzles



#### Main Benefits

- Extremely low drift potential
- Sturdy Design
  Easily removable injector for
- cleaningHard wearing non-cloggingVery good deposition structure
- and crop canopy penetration

#### Advantages

- Extremely coarse to coarse droplets
- 90 % drift reduction
- ID-120-025 to 05
  Long injector design insures uniform spray and droplet
- pattern up to 115 PSI
  Timely application even under adverse weather conditions
- Increased workrate due to flexible use over a wide pressure range
  - Adaptation by changing the driving speed and GPA rate without nozzle changes
- Very good deposition structure and crop penetration



#### **Application areas**

AHL

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Plant protection pro-

Use with IS 80 nozzles

for border and field edge applications

Golf course

ducts and growth regulators

Liquid fertilizer



01 – 08



**Spray angle** 80°, 90°, 110°, 120°

**ISO nozzle size** 





**Material** POM, ceramic



Pressure range 30-115 PSI



Recommended filters





Droplet size Extremely coarse –

coarse



## Near width across

**flats** Fits 10 mm bayonet caps Y8253049 or Universal Y8253080

Example of ordering										
Туре	+ spray ar	ngle + int'l nozzle size	+	material	=	order number				
ID3	120°	025		(POM)	=	ID-120-025				
ID3	120°	025		C (ceramic)	=	ID-120-025 C				



Toolless removable injector



## IDK Compact Air Induction flat spray nozzles





## **IDTA Asymmetrical Twin Air Induction** flat spray nozzles

IDTA

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IDKT

120°

04

C (ceramic)

=

IDKT 120-04 C

#### **Main Benefits** Very low drift potential Air-induction twin flat symmetrical pattern spray nozzle for optimized deposition and reduced ATLICH G spray shadow areas. Compact design minimizes clogiKi Ø 14.8 ging and breakage Excellent coverage on dense NERKANN 2.0 foliage and vertical targets G 1836 **Advantages** G 1837 G 1865 Ultra coarse to medium dro-G 1882 22.0 plets G 1883 90 % drift reduction G 1884 - IDKT 120-02 to 06 G 1911 Compact design G 1912 Optimum deposition on foliage G 1935 and vertical target surfaces 8 mm AF thanks to symmetrical twin flat spray jet 30°/30° IDKT-C IDKT Reduced spray shadow Improved wetting thanks to balanced droplet spectrum JKI approval for mixed equipment with IDK nozzles with the same **Crop production** Ground care nozzle sized in the boom center section Liquid Application areas ISO nozzle size 015 - 06 Plant protection products and Injector growth regulators Spray angle Nozzel body 120° Spray frame A Air Material POM, ceramic Use with IS 80 nozzles for border and field edge applica-**Pressure range** tions 15-90 PSI Golf course 6. Recommended filters Greenhouse 50 Mesh: 02-08 100 Mesh: up to 02 **Direction of travel** Toolless removable iniector **Droplet size** Ultra coarse -لتلتليليا medium Width across flats -Ծ-8 mm Fits 8mm bayo-Example of ordering net cap; Universal Type + spray angle + int'l nozzle size + material order number = Y8253080 IDKT 120° 04 (POM) **IDKT 120-04** =





Examp	le of ordering					
Type +	spray angle +	int'l nozzle size	+	material	=	order number
PRE	130°	05		(POM)	=	PRE 130-05 POM







Example of ordering										
Туре -	+ spray angle +	int'l nozzle size	+	material	=	order number				
AD	120°	02		(POM)	=	AD 120-02				
AD	120°	02		C (ceramic)	=	AD 120-02 C				









**ISO nozzle size** 01 - 08

#### Application areas

Use with plant protection products and growth regulators

Use with OC 80 nozzles for border and field edge applications

Backpack sprayer

Greenhouse

111



**Spray angle** 80°, 90°, 110°, 120°



**Material** POM, stainless steel, ceramic



Pressure range 20-70 PSI



Recommended filters 50 Mesh: 02-08

100 Mesh: up to 02



**Droplet size** Very coarse – fine



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### Width across flats

8 mm Fits 8mm bayonet caps; Y8253049 or Universal Y8253080

Example of ordering											
Туре +	spray angle +	int'l nozzle size	+	material	=	order number					
LU	120°	02		(POM)	=	LU 120-02					
LU	120°	015		C (ceramic)	=	LU 120-015 C					
LU	120°	03		S (stainless steel)	=	LU 120-015 S					







Example of ordering										
Type +	spray angle +	int'l nozzle size	+	material	=	order number				
SC	110°	03		(POM)	=	SC 110-03 POM				
ST	110°	03		(POM)	=	ST 110-03 POM				
ST	110°	03		C (ceramic)	=	ST 110-03 POM				









#### Main Benefits

**Low/Medium** drift potential Clog-resistant flat spray nozzle Wide pattern for great coverage

Advantages

Very Coarse to Fine droplets

Compact design 

Round flow, self cleaning jet forming area

Spray pattern forms at 15 PSI

FT 90 high drift reduction thanks to integrated pre chamber



Spray angle 90°, 140°







Pressure range FT 140: 10-40 PSI FT 90: 15-90 PSI



Recommended filters 50 Mesh: 02-10 100 Mesh: up to 02







Greenhouse

Dropleg<sup>UL</sup>

<del>-</del>값-

Ø 12.65 mm

Y8253051

products and

**Application areas** 

XX.

























Example of orderingType + spray angle + int'l nozzle size+material=order numberITR $80^{\circ}$ 02C(ceramic)=ITR 80-02 C





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## **FD Liquid Fertilizer nozzles**



FL 5 Orifice Fertilizer nozzles



Exam	ple of ordering					
Туре	+ spray angle +	- int'l nozzle size	+	material	=	order number
FL	160°	0.8		(Black)(POM)	=	FL 160 0.8 Black P
FL	160°	0.8		(Gray)(POM)	=	FL 160 0.8 Gray P
FL	160°	0.8		S (stainless steel)	=	FL 160 0.8 S



# IS Off Center Air Induction flat spray nozzles















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01 - 08

80°, 90°

Material Brass, POM

15-60 PSI

8 mm

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Pressure range

Width across flats

Fits 8mm bayonet caps; Universal Y8253080

Spray angle



50 Mesh: 02-08

Droplet size Medium

Band spraying

Backpack sprayer

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Application areas

100 Mesh: up to 02

Lechler's even flat spray nozzles E enable extremely short spray heights (H), thus extensively avoiding band drift. The width of the spray band (B) can be varied by altering the spray height (H) and/or rotating the spray axis to change the spray offset.



Spray height H in	Band width B in	Applic for a 50 in	(in %), 1g A 100 in		
3	4	20	13	10	
4	6	30	20	15	
5	8	40	27	20	
6.25	10	50	33	25	

\* Percentages in comparison with full-area treatment

Example of ordering											
Type +	spray angle	+ int'l nozzle size	+	material	=	order number					
E	<b>80</b> °	02		Brass	=	8002 E brass					
E	<b>80</b> °	02		POM	=	8002 E					



# **Twin Spray Cap** for air induction nozzles and flat spray nozzles

Bayonet connection cap with symmetrical twin flat spray jets at 30°/30° spray angles

#### **Advantages**

Variable nozzle selections, different nozzle types and sizes

Enhanced deposition through combination of lowdrift injector nozzles and standard flat spray nozzles

Fits AF8, AF10 and slotted flood nozzles Nozzle assembly without tools through plug-in clip system

Universal and Hardi bayonet systems available



#### Crop production Ground care

#### **Pre Assembled Styles**

Twin Air Low Pressure: 30-50 PSI working range; using standard flat fan nozzles Twin Air: 15-90 PSI working range; using IDK air induction nozzles Twin Air Ceramic: 80 PSI & up working range; using ID/ID3 ceramic air induction nozzles



Width across flats 8 and 10 mm

#### Application areas



Plant protection products and growth regulators



Spray frame





Dropleg<sup>UL</sup>



FT Flood Nozzles with round hole bore, e.g. for use on Dropleg<sup>UL</sup> (S. 103) Order. no.: 092.163.56.10



**Universal Bayonet** Order. no.: 092.163.56.00



Hardi connection Order. no.: 092.163.56.01





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## Select Lechler Nozzles Droplet Size Table

PSI	15	20	25	30	35	40	50	60	70	80	90	100
ID 110 01	VC	VC	VC	VC	C	C	Ċ	Ċ	1			
ID 110 015	VC	VC	VC	VC	VC	VC	VC	C	C	C	C	¢
ID 110 02	VC	VC	VC	VC	VC	VC	VC	VC	VC	C	C	c
ID 110 025	XC	XC	XC	XC	VC	VC	VC	VC	VC	VC	C	C
ID 110 03	XC	XC	XC	XC	XC	XC	XC	VC	VC	VC	VC	VC
ID 110 04	XC	XC	XC	XC	XC	XC	XC	XC	VC	VC	VC	VC
10 110 05	XC	XC	XC	XC	XC	XC	XC	XC	XC	VC	VC	VC
ID 110 06	XC	XC	XC	XC	XC	XC	XC	XC	XC	XC	XC	VC
1011006	00	00	00	00	00	00	AC.	NC	AC .	AL	AC.	I AC
PSI	15	20	25	30	35	40	50	60	70	80	90	100
ID3 110 01	XC	VC	VC	VC	VC	VC	C.	C	1000			_
ID3 110 015	XC	XC	XC	XC	XC	XC	VC	C	C	C	C	G
ID3 110 02	VC	VC	VC	VC	VC	VC	VC	VC	VC	C	C	C
ID3 110 025	XC	XC	XC	XC	XC	XC	VC	VC	VC	VC	C	C
103 110 03	XC	XC	XC	XC	XC	XC	XC	VC	VC	VC	VC	VC
103 110 04	XC	XC	XC	XC	XC	XC	XC	XC	XC	VC	VC	VC
ID3 110 06	XC	xc	xc	XC	xc	XC	XC	xc	XC	XC	XC	VC
ID3 110 08	XC	XC	xc	XC	XC	XC	XC	XC	XC	XC	XC	XC
PSI	15	20	25	30	35	40	50	60	70	80	00	100
1.01	10				00				10	00	30	100
IDTA 120 02 C	UC	UC	XC	XC	XC	XC	VC	VC	VC	C	G	C
IDTA 120 025 C	UC	UC	00	NC.	XC	XC	XC	VC	VC	VL	L C	6
IDTA 120 03 C	UC	UC	UC	XC	XC	XC	XC	VC	VC	0	c	c
IDTA 120 05 C	UC	XC	XC	XC	XC	XC	VC	VC	C	c	C	c
IDTA 120 06 C	UC	XC	XC	XC	XC	VC	VC	VC	C	C	M	M
IDTA 120 08 C	UC	XC	XC	XC	XC	VC	VC	VC	C	C	C	C
PSI	15	20	25	30	35	40	50	60	70	80	90	
IDX 110.01	WC	NC	NC		6		M	M		-		
IDK 110 015	VC	VC	VC	VC	VC	6	C	M	M	M	M	1
IDK 110 02	VC	VC	VC	VC	C	C	c	C	M	M	M	1
IDK 110 025	VC	VC	VC	VC	VC	VC	C	C	C	M	M	1
IDK 110 03	VC	VC	VC	VC	VC	VC	VC	C	C	M	- M	
IDK 110.04	XC	XC	XC	XC	VC	VC	VC	C	C	C	G	
IDK 110.05	XC	XC	XC	XC	XC	XC	VC	VC	VC	C	C	4
IDK 110 06	XC	XC	xc	XC	xc	XC	XC	VC	VC	C	C	
PSI	15	20	25	30	35	40	50	60	70	80	90	
IDKT 120 015	UC	UC	XC	XC	XC	VC	VC	C	C	C	M	
IDKT 120 02	XC	XC	XC	XC	XC	VC	C	С	M	M	M	1
IDKT 120 025	XC	XC	VC	VC	VC	C	C	M	M	M	M	
IDKT 120 03	XC	XC	VC	VC	VC	C	C	С	M	M	M	
IDKT 120 04	XC	XC	XC	VC	VC	G	C:	M	M	M	M	4
IDKT 120 05	XC	XC	XC	VC	VC	C	C	M	M	M	M	-
IDK1 120 00	AC .	I AC	AC .	VC	VG	Vu	0			m	m	1
PSI	15	20	25	30	35	40	-50	60	70	80	90	
AD 110 015	M	M	M	M	M	M	M	F	F	F	F	
AD 110.03	C	c	C C	C C	C	c	M	M	M	M	M	
AD 110 D4	VC	VC	VC	VC	C	C	C	M	M	M	M	1
PSI	15	20	25	30	35	40	50	60	70			
LU 110.01	F	F	F	F	F	F	F	F	F			
LU 110 015	F	F	F	F	F	F	F	F	F			
LU 110 02	M	F	F	F	F	F	F	F	F			
LU 110 025	M	M	M	M	M	M	F	F	F			
LU 110 03	M	M	M	M	M	F	F	F	F			
LUTID 04	M	M	M	M	M	M	M	M	M			
111 110 05	M	M	M	M	M	M	M	M	M			
LU 110 08	VC	c	C	C	6	0	C C	M	M			
10 110 00					-							

ASABE 5 572.1 Dro	plet Size Classification Star	idards	
Droplet size classificatio	Dv50 Range		
XF	Extremely Fine	< 60	
YF	Very Fine	11.05	
F	Fine	106-235	
М	Medium	235-340	
C	Coarse	SAT-405	
VC	Very Coarsa	406-505	
XC	Extremely Coarse	506-675	
UC	Ultra Coarse	> 670	

## Spray table

		Capacity	per nozzle Gallons / Acre / 20" Nozzle Spacing									
( 🌉 )	psi	gpm	oz/min	4 mph	5 mph	6 mph	7 mph	8 mph	10 mph	12 mph	14 mph	16 mph
	15	0.061	8	4.5	3.6	3	2.6	2.3	1.8	1.5	1.3	1.1
01	20	0.071	9	5.3	4.2	3.5	3	2.6	2.1	1.8	1.5	1.3
OBANGE	30	0.087	11	6.5	5.2	4.4	3.7	3.2	2.6	2.2	1.8	1.6
	35	0.094	12	7	5.6	4.7	4	3.5	2.8	2.3	2	1.7
	40	01	13	74	5.9	5	4.2	3.7	3	2.5	21	19
	50	0.11	14	8.2	6.5	5.4	4.7	4.1	3.3	2.7	2.3	2
ST/SC	60	0.12	15	8.9	7.1	5.9	5.1	4.5	3.6	3	2.5	2.2
FS	70	0.13	17	9.7	7.7	6.4	5.5	4.8	3.9	3.2	2.8	2.4
TRITR	80	0.14	18	10.4	8.3	6.9	5.9	5.2	4.2	3.5	3	2.6
FT90 FT140	90	0.15	19	11	8.9	7.4	6.4	5.6	4.5	3.7	3.2	2.8
1100 11140	100	0.16	20	11.9	9.5	7.9	6.8	5.9	4.8	4	3.4	3
	15	0.092	12	6.8	5.4	4.6	3.9	3.4	2.7	2.3	2	1.7
015	20	0.11	14	8.2	6.5	5.4	4.7	4.1	3.3	2.7	2.3	2
GREEN	30	0.13	17	9.7	7.7	6.4	5.5	4.8	3.9	3.2	2.8	2.4
	40	0.15	19	11.1	8.9	7.4	6.4	5.6	4.5	3.7	3.2	2.8
	50	0.17	22	12.6	10.1	8.4	7.2	6.3	5	4.2	3.6	3.2
	60	0.18	23	13.4	10.7	8.9	7.6	6.7	5.3	4.5	3.8	3.3
51/50	70	0.20	26	14.9	11.9	9.9	8.5	7.4	5.9	5	4.2	3.7
	80	0.21	27	15.6	12.5	10.4	8.9	7.8	6.2	5.2	4.5	3.9
ETOO ET140	90	0.23	29	17.1	13.7	11.4	9.8	8.5	6.8	5.7	4.9	4.3
F190 F1140	100	0.24	31	17.8	14.3	11.9	10.2	8.9	7.1	5.9	5.1	4.5
02	15	0.12	15	8.9	7.1	5.9	5.1	4.5	3.6	3	2.5	2.2
YELLOW	20	0.14	18	10.4	8.3	6.9	5.9	5.2	4.2	3.5	3	2.6
ID/ID3 IS	30	0.17	22	12.6	10.1	8.4	7.2	6.3	5	4.2	3.6	3.2
IDK IDKT	40	0.20	26	14.9	11.9	9.9	8.5	7.4	5.9	5	4.2	3.7
IDTA	50	0.22	28	16.3	13.1	10.9	9.3	8.2	6.5	5.4	4.7	4.1
LU AD	60	0.24	31	17.8	14.3	11.9	10.2	8.9	7.1	5.9	5.1	4.5
SI/SU ES	70	0.26	33	19.3	15.4	12.9	11	9.7	1.1	6.4	5.5	4.8
	80	0.28	36	21	16.6	13.9	10.7	10.4	8.3	0.9	5.9	5.2
FT90 FT140	90	0.30	38	22	17.8	14.9	12.7	11.0	0.9	7.4	6.4	5.6
	100	0.32	41	24	19	15.8	6.5	5.6	9.5	7.9	0.8	0.9
	15	0.15	19	13.4	10.7	7.4 8.0	0.0	5.0 6.7	4.0	3.7	3.3	2.8
025	30	0.22	28	16.3	13.1	10.9	9.3	82	6.5	5.4	47	41
VIOLET	40	0.25	32	18.6	14.9	12.4	10.6	9.3	7.4	62	53	4.6
ID/ID3 IS	50	0.28	36	21	16.6	13.9	11.9	10.4	8.3	6.9	5.9	5.2
IDK IDKT	60	0.31	40	23	18.4	15.3	13.2	11.5	9.2	7.7	6.6	5.8
IDTA	70	0.33	42	25	19.6	16.3	14	12.3	9.8	8.2	7	6.1
LU	80	0.35	45	26	21	17.3	14.9	13	10.4	8.7	7.4	6.5
ST/SC	90	0.38	49	28	23	18.8	16.1	14.1	11.3	9.4	8.1	7.1
	100	0.4	51	30	24	19.8	17	14.9	11.9	9.9	8.5	7.4
03	15	0.26	23	13.4	10.7	8.9	7.6	6.7	5.3	4.5	3.8	3.3
BLUE	20	0.26	27	15.6	12.5	10.4	8.9	7.8	6.2	5.2	4.5	3.9
ID/ID3 IS	30	0.26	33	19.3	15.4	12.9	11	9.7	7.7	6.4	5.5	4.8
IDK IDKT	40	0.3	38	22	17.8	14.9	12.7	11.1	8.9	7.4	6.4	5.6
IDTA	50	0.34	44	25	20	16.8	14.4	12.6	10.1	8.4	7.2	6.3
	60	0.37	47	27	22	18.3	15.7	13.7	11	9.2	7.8	6.9
SI/SC ES	70	0.4	51	30	24	19.8	17	14.9	11.9	9.9	8.5	7.4
TR ED	80	0.42	54	31	25	21	17.8	15.6	12.5	10.4	8.9	7.8
FT90 FT140	90	0.45	58	33	27	22	19.1	16.7	13.4	11.1	9.5	8.4
	100	0.47	60	35	28	23	19.9	17.4	14	11.6	10	8.7
04	15	0.24	31	18	14.3	11.9	10.2	8.9	7.1	5.9	5.1	4.5
RED	20	0.28	30	21	10.0	13.9	11.9	10.4	0.3	0.9	5.9	5.2
ID/ID3 IS	30	0.35	45	26	21	17.3	14.9	13	10.4	8.7	7.4	6.4
IDK IDKT	40	0.4	51	30	24	19.8	1/	14.9	11.9	9.9	8.5	1.4
IDTA	50	0.45	58	33	27	22	19.1	16.7	13.4	11.1	9.5	8.4
LU AD	60	0.49	63	36	29	24	21	18.2	14.6	12.1	10.4	9.1
	70	0.53	68	39	31	26	22	19.7	15./	13.1	11.2	9.8
TR ED	80	0.57	/3	42	34	28	24	21	17.0	14.1	12.1	10.6
FT90 FT140	90	0.60	01	45	30	30	25	22	17.0	14.9	12.7	11.1
	100	0.03	01	47	3/	51	21	23	10.7	13.0	13.4	11./

	ALCONT OF STREET, STRE	Capacity	per nozzle	Gallons / Acre / 20" Nozzle Spacing								
( 🌒 )	psi	gpm	oz/min	4 mph	5 mph	6 mph	7 mph	8 mph	10 mph	12 mph	14 mph	16 mph
05	15	0.31	40	23	18.4	15.3	13.2	11.5	9.2	7.7	6.6	5.8
BROWN	20	0.35	45	26	21	17.3	14.9	13	10.4	8.7	7.4	6.5
ID/ID3 IS	30	0.43	55	32	26	21	18.2	16	12.8	10.6	9.1	8
IDK IDKT	40	0.5	64	37	30	25	21	18.6	14.9	12.4	10.6	9.3
IDTA	50	0.56	72	42	33	28	24	21	16.6	13.9	11.9	10.4
LU ES	60	0.61	78	45	36	30	26	23	18.1	15.1	12.9	11.3
ST/SC	70	0.66	84	49	39	33	28	25	19.6	16.3	14	12.3
DF OC	80	0.71	91	53	42	35	30	26	21	17.6	15.1	13.2
TR FD	90	0.75	96	56	45	37	32	28	22	18.6	15.9	13.9
FI90 FI140	100	0.79	101	59	47	39	34	29	23	19.6	16.8	14.7
06	15	0.37	47	27	22	18.3	15.7	13.7	11	9.2	7.8	6.9
CDAV	20	0.42	54	31	25	21	17.8	15.6	12.5	10.4	8.9	7.8
	30	0.52	67	39	31	26	22	19.3	15.4	12.9	11	9.7
נו געו/עו דעתו אתו	40	0.6	77	45	36	30	25	22	17.8	14.9	12.7	11.1
	50	0.67	86	50	40	33	28	25	19.9	16.6	14.2	12.4
	60	0.73	93	54	43	36	31	27	22	18.1	15.5	13.6
LU ES	70	0.79	101	59	47	39	34	29	23	19.6	16.8	14.7
51/50 DE 00	80	0.85	109	63	50	42	36	32	25	21	18	15.8
	90	0.9	115	67	53	45	38	33	27	22	19.1	16.7
FD F1140	100	0.95	122	71	56	47	40	35	28	24	20	17.6
	15	0.49	63	36	29	24	21	18.2	14.6	12.1	10.4	9.1
08	20	0.57	73	42	34	28	24	21	16.9	14.1	12.1	10.6
WHITE	30	0.70	90	52	42	34.6	29.8	26	20.8	17.4	14.8	12.8
ID/ID3	40	0.80	102	60	48	39.6	34	29.8	23.8	19.8	17	14.8
IDTA	50	0.90	116	66	54	44	38.2	33.4	26.8	22.2	19	16.8
LU	60	0.98	126	72	58	48	42	36.4	29.2	24.2	20.8	18.2
ST/SC	70	1.06	136	78	62	52	44	39.4	31.4	26.2	22.4	19.6
ES OC	80	1.14	146	84	68	56	48	42	33.8	28.2	24.2	21.2
FD FT140	90	1.20	154	90	72	60	50	44	35.6	29.8	25.4	22.2
	100	1.26	162	94	74	62	54	46	37.4	31.2	26.8	23.4









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Lechler GmbH · Agricultural Nozzles and Accessories P.O. Box 13 23 · 72544 Metzingen, Germany · Phone +49 7123 962-0 · Fax +49 7123 962-480 · info@lechler.de · www.lechler.com