

# Field crops Nozzles, Accessories and Spray Recommendation Catalogue P 2020



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

Lechler is a world leader in nozzle technology. For over 140 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.

Modern plant protection involves more than just the use of environmentally friendly chemicals. It is above all a question of precision. In order to achieve uniform coverage, the droplets must reach the target as exactly as possible. Losses due to drift, run-off or evaporation should be avoided – in favour of the environmental protection.

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



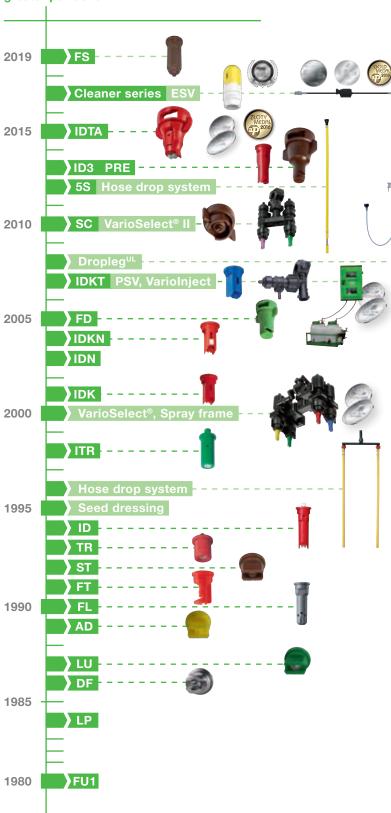
measures, from the incoming goods department, through development and production right up to dispatch. Our quality management system is based primarily on the requirements of our customers and is certified in accordance with ISO 9001:2015. Lechler nozzles comply with the requirements of the Julius Kühn 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 and accessory range so see for yourself our product range.

## 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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#### THE RIGHT NOZZLE FOR YOUR PLANT PROTECTION

As part of efficient crop production, it is nowadays necessary to observe a large number of different requirements and reconcile these with each other. National and international regulations have to be taken into account as well as biological and ecological aspects. And as the bottom line, economical delivery of all plant protection products must also be guaranteed. At Lechler, we focus all our attention on combining these requirements in the optimum nozzle for your particular application.

## Technical requirements

Compliance with the requirements of JKI, ENTAM as well as the international EN/ISO standards with respect to flow rate tolerance and distribution uniformity is an essential part of ensuring optimum use of plant protection products.

In the case of JKI-approved Lechler nozzles, the flow rate of new nozzles may deviate from the table value by a maximum of +/-5%. This applies for spraying both field crops as well as bush and tree crops.

In combination, new JKIapproved nozzles must guarantee the most uniform cross distribution possible.

Coefficient of variation over the entire width of the spray boom must not exceed 7 % in the specified pressure range and with the corresponding spray heights.



## 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. Independently of this, the recommendations of the plant protection product manufacturers with respect to application rates must always be observed.

Determination of the target area before use is of decisive importance for optimum deposition of the plant protection product. Flat spray and twin flat spray nozzles are available. Flat spray nozzles generally achieve good crop penetration (e.g. mildew control in cereal crops). In contrast, twin flat spray nozzles are recommended for optimum deposition on vertical target surfaces (e.g. grass control, ear treatment) and to reduce spray shadow (e.g. direct seed, cloddy soil).



#### **Environmentally**relevant requirements

#### Drift

Spray drift refers to droplets containing crop protection chemicals which are not deposited on the target area due to wind or thermal current. These droplets can pollute or damage adjacent crops, contaminate nearby waters and pose a risk to both humans and animals.

In addition, drift frequently leads to incorrect dosages for the crop being treated.

The reasons of drift depend on equipment-specific and meteorological factors such as

- droplet size
- sprayer velocity
- spray height
- wind speed
- air temperature
- air humidity

## **Drift-reducing** technology

Application regulations for plant protection products, e.g. distance restrictions to water and field boundary structures, have been defined in order to protect non-target organisms. Depending on the toxicity of the plant protection product, the distances from water and field boundaries can be reduced with loss-reducing equipment, e.g. with airinjector nozzles.

Lechler nozzles are officially approved in Germany, Austria, England, Finland, France, the Netherlands, Belgium and Sweden as drift-reducing devices in the drift reduction classes 99/95/90/75/66/50 and 25%. The criteria on which the distance regulations are based in the individual countries comprise, among other things, the nozzle technology, water type, bank vegetation, width of the field boundary, mixture concentration, process technology (e.g. pressure) as well as external influences such as wind direction, wind speed and temperature.

Drift-reducing Lechler nozzles allow areas to be used more efficiently while at the same time protecting field boundaries and water.



#### **INNOVATIVE NOZZLE DESIGN – 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 oriented design.

The IDTA is a high drift reducing asymmetrical twin flat spray air-injector nozzle for optimal coverage at higher forward speeds.

The newest development in the wide range of agricultural spray nozzles is suitable for a wide range of applications.

#### Optimized twin flat spray concept

For best deposit 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 result at higher forward speed.

#### **Facts**

To prove the high efficiency of the IDTA several field tests have been conducted. Deposit at vertical targets (e.g. black grass) has been checked with water sensitive paper. This test has been done with a field sprayer Amazone UF 1201 with 15 m boom. Results show significant difference on front and back at different forward speed between the different nozzles.

Туре	Lechler ID 120-03 (ID3)	Lechler IDTA 120-03	Competitor Asym. DF 110-03
Pressure	5 bar	5 bar	5 bar
Speed	12 km/h	12 km/h	12 km/h
Deposit towards front	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 % 	9.5 % + 24.9 d/cm²	30.2 % + 60.7 d/cm <sup>2</sup>	27.2 % + 63.5 d/cm <sup>2</sup>

#### More applications

As a consequence 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.



#### Results

Compared to standard air-injector nozzles e.g. ID 120-03 the IDTA gives clear advantages in the field:

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



#### Nozzle type influences deposit on target area

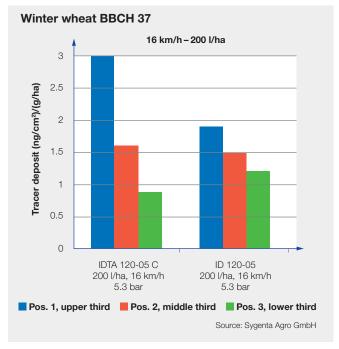
To obtain high biological efficacy best coverage at the target is prerequisite. Depending on crop and growth stage this may change. So for optimum application there is a need for at least two or more different nozzle settings. Important is to know the target area.

Better coverage on vertical targets can be achieved by using twin flat fan nozzles. Penetration into the canopy a standard single fan nozzle has advantages.

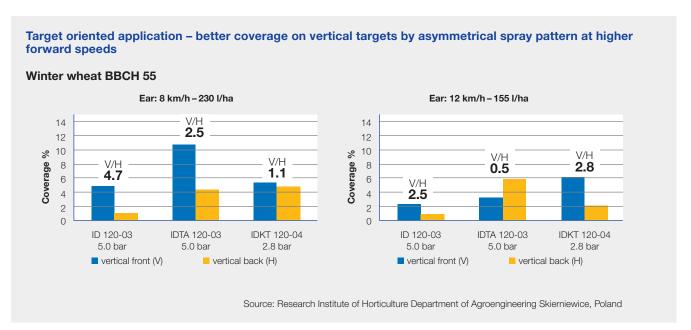








**Picture 1:** Nozzle comparison in winter wheat, BBCH 37. Deposit of ID 120-05 compared to IDTA 120-05 C in upper third, middle third and lower third.

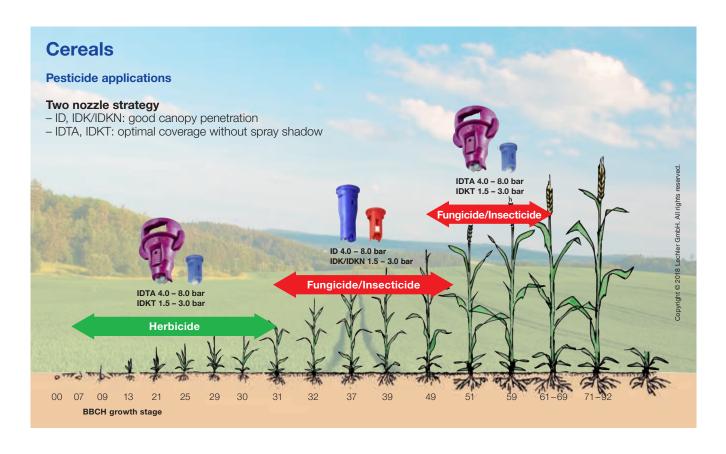


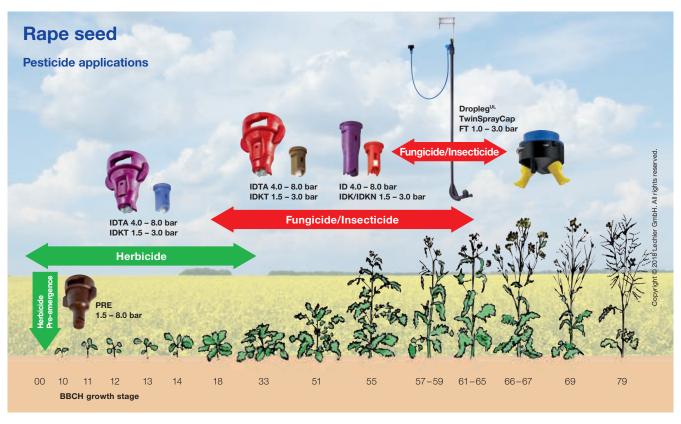
Picture 2: Coverage on ear in winter wheat BBCH 55 with different nozzle types at different forward speed and application rates.

At 8 km/h the IDKT has a balanced coverage of the ear front and back thanks to the symmetrical pattern.

At 12 km/h and higher speed the asymmetrical pattern of the IDTA give the more uniform coverage.

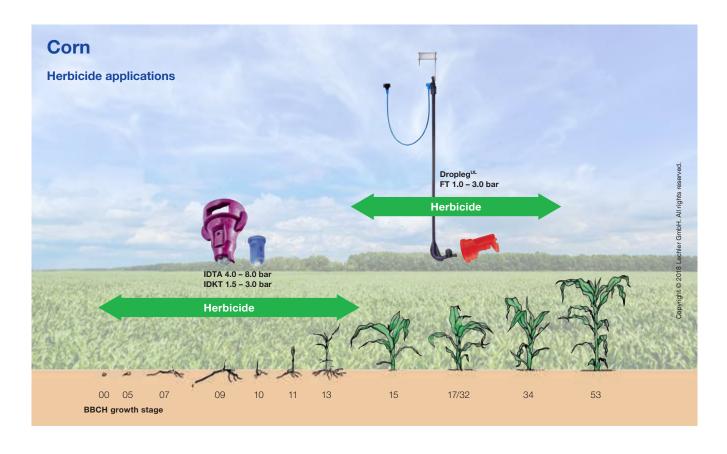
## NOZZLE RECOMMENDATION FOR PESTICIDE APPLICATION

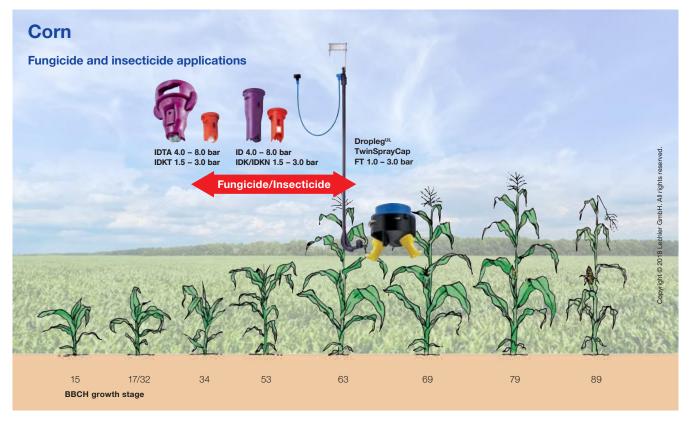




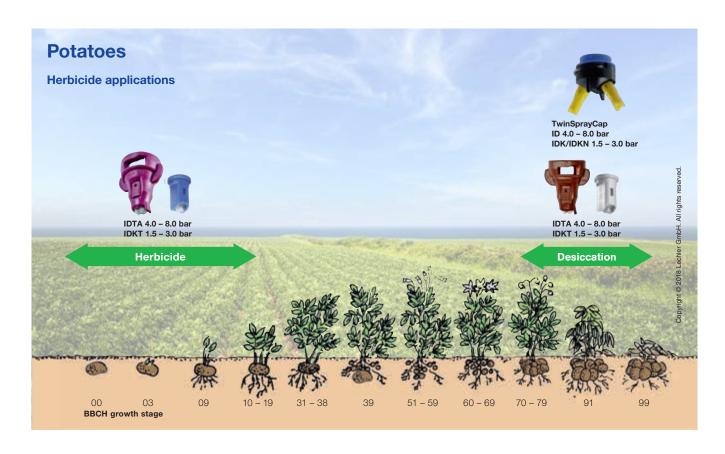
#### More recommendation:

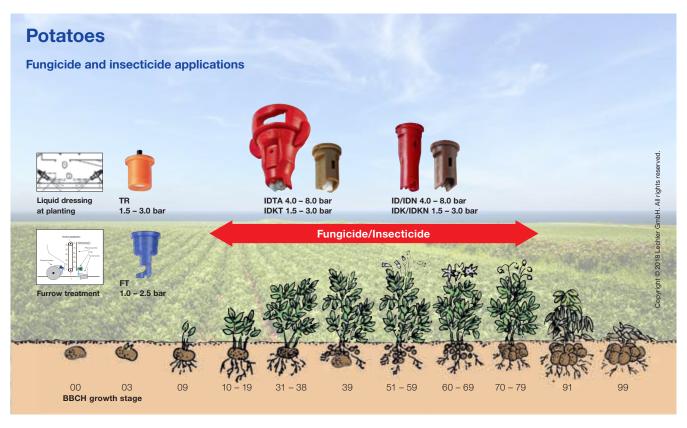






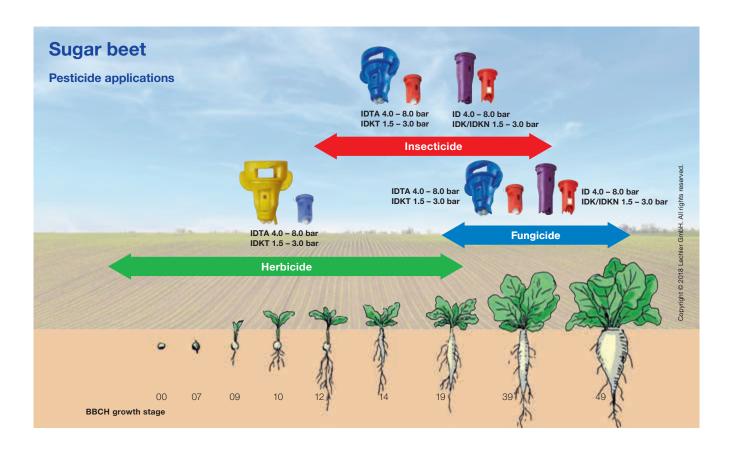
## NOZZLE RECOMMENDATION FOR PESTICIDE APPLICATION

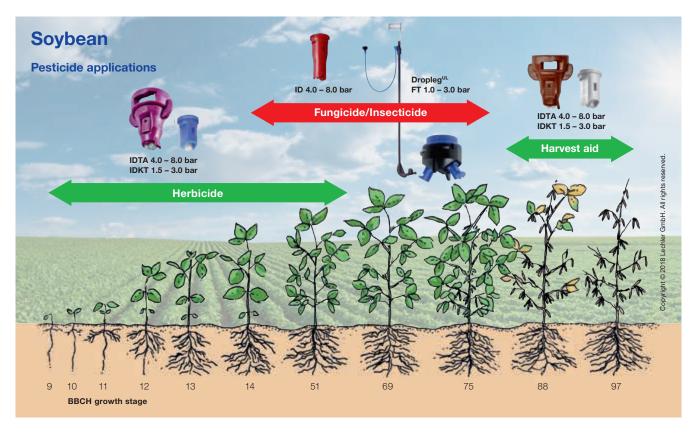




#### More recommendation:







## **LECHLER NOZZLES FOR THE CROP PRODUCTION**

IDK/

IDKN

**IDTA** 

IDKT

PRE

AD

QS 80

LU

ST/SC

DF

ID3

						P					
Spray geometry											
Drift reduction		++	+	++	+	+++	o	o/-	o/-	-	
Broadcast spray	ying							,			
Recommended press	sure range (bar)	2/3*- <b>4-8</b>	1**-/ <b>1.5-3</b> -6	1-4-8	1***-/ <b>1.5-3</b> -6	1.5-8	<b>1.5-3</b> -6	1.5-5	<b>1.5–2.5</b> –5	<b>2–3</b> –5	<b>2–3</b> –5
	Soil incorporated	••	••	••	••	••	••	••	••	•	-
Herbicides	Pre-emerge	••	••	••	••	••	••	••	••	•	-
Herbiciaes	Post-emerge (systemic)	••	••	••	••	-	••	••	••	•	0
	Post-emerge (contact)	•	•	••	••	-	•	••	••	•	••
Firegioidee	Contact	•	•	••	••	-	•	••	••	•	••
Fungicides	Systemic	••	••	••	••	-	••	••	••	•	•
Innontinidae	Contact	•	•	••	••	-	•	••	••	•	••
Insecticides	Systemic	••	••	••	••	-	••	••	••	•	•
Liqu	id fertilizer	●● (2-4)	● ● (1**/1.5-2.5)	O (1-4)	O(1***/1.5-2.5)	●● (1.5-4)	● (1.5–2.5)	O (1.5-2)	O (1.5-2)	O(2)	-
Growt	h regulators	••	••	0	0	-	••	•	•	•	0
Irrigatio	on (via boom)	••	••	••	••	••	••	•	•	•	-
Banding/row sp	raying – arable crop	s and sp	eciality crop	os							
Recommended press	sure range (bar)	-	-	-	-	-	-	-	-	-	-
·	Soil incorporated	-	-	-	-	-	-	-	-	-	-
	Pre-emerge	-	-	-	-	-	-	-	-	-	-
Herbicides	Post-emerge (systemic)	-	-	-	-	-	-	-	-	-	-
	Post-emerge (contact)	-	-	-	-	-	-	-	-	-	-
- · · · ·	Contact	-	-	-	-	-	-	-	-	-	-
Fungicides	Systemic	-	-	-	-	-	-	-	-	-	-
Insecticides Contact		-	-	-	-	-	-	-	-	-	-
Systemic		-	-	-	-	-	-	-	-	-	-
Liqu	id fertilizer	-	-	-	-	-	-	-	-	-	-
Growt	h regulators	-	-	-	-	-	-	-	-	-	-
Irrigatio	n (via boom)	-	-	-	-	-	-	-	-	-	-

Heed label of chemical company.

FT 90 (FT 140)	TR 80	ITR 80	FD	FL	FS	IS 80	IDKS 80	BN	ос	E	ID 90	IDK 90	AD 90
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<b>1-3</b> -6 ( <b>1-2</b> -3)	3-8	3- <b>5-10</b>	1.5-4	1–5	1-3***/4	2- <b>4-8</b>	1****/ <b>1.5-3</b> -6	-	<b>1.5–2.5</b> –5	-	3-8	1.5-8	<b>1.5–3</b> –6
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-- = not drift reducing -= less drift reducing o = drift reducing += very drift reducing ++ = extremely drift reducing ++ + = most drift reducing





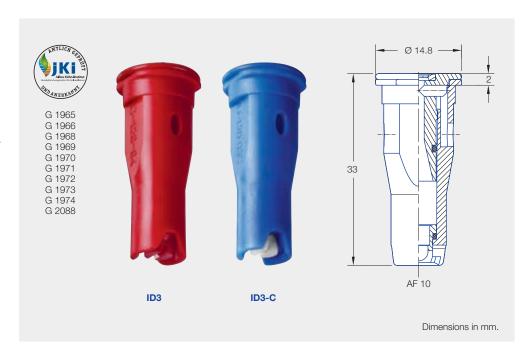


JKI-approval for mixed nozzle equipping

Extremely low-drift, airinjector flat spray nozzle for professional use.

#### **Advantages**

- Up to 90 % drift reduction depending on nozzle size, pressure and country
- Long injector design ensures high drift stability over a wide pressure range
- 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 l/ha rate without nozzle changes
- Very good deposition structure and crop penetration





### **Nozzle size** 01 – 10



Spray angle 120°



## **Material** POM, ceramic



#### Pressure range



- ID-02 to -08:

2 - **4 - 8** bar

- UAN: 2 - 4 bar



### Recommended filters

80 M 01 60 M 02 – 04 25 M 05 – 10



## **Droplet size**Ultra coarse – medium



Width across flats 10 mm

#### **Application areas**



Plant protection products and growth regulators



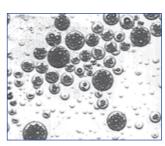
Liquid fertilizer



Border application can be combined with border nozzle IS 80



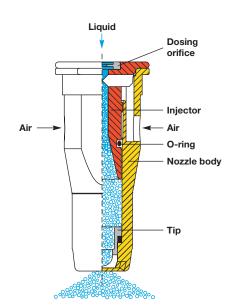
Golf course



Aeration effect



Toolless removable injector



Example of ordering

LAdilipi	e or ordering			
Type +	spray angle +	int'l nozzle size +	material	= ordering no.
ID3	120°	025	(POM)	= ID-120-025
ID3	120°	025	C (ceramic)	= ID-120-025 C



### Air-injector flat spray compact nozzles IDK/IDKN

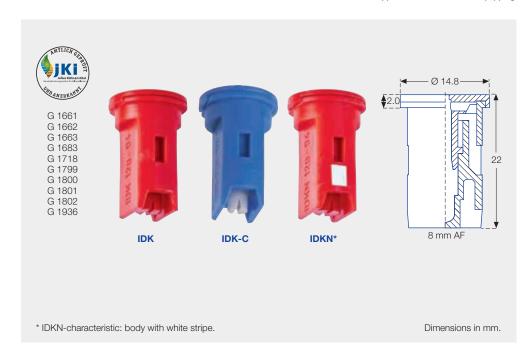


JKI-approval for mixed nozzle equipping

Very low-drift, compact airinjector flat spray nozzle with wide droplet spectrum (from ultra coarse to fine).

#### **Advantages**

- Up to 90% drift reduction depending on nozzle size, pressure and country
- Very low drift and lossreducing in the pressure range up to 3.0 bar (depending on size)
- Inexpensive alternative to conventional standard
- Very good deposition structure and crop penetration





#### Nozzle size 01 - 10



Spray angle 90°, 120°





**Material** POM, ceramic



#### Pressure range

- IDK-01 to -03: 1.5 - 3 - 6 bar
- IDK-04 to -10: 1 - **1.5 - 3** - 6 bar
- UAN IDK -01 to -03: 1.5 - 2.5 bar IDK -04 to -10: 1 - 2.5 barIDKN: 1 - 2.5 bar



#### Recommended filters

80 M 01 60 M 015 - 04 25 M 05 - 10



#### **Droplet size**

Ultra coarse medium



Width across flats 8 mm

#### **Application areas**



Plant protection products and growth regulators



Liquid fertilizer



Spray frame



Border application can be combined with border nozzle IDKS 80



Golf course



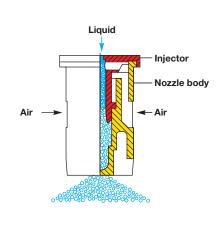
Knapsack sprayer



Greenhouse



Toolless removable



Example of ordering

+ spray angle + int'l nozzle size + material = ordering no. Type IDK 120° = IDK 120-01 01 (POM) IDK 120° 01 C (ceramic) = IDK 120-01 C = MultiCap IDK 120-01 MultiCap IDK 01 (POM) 120°

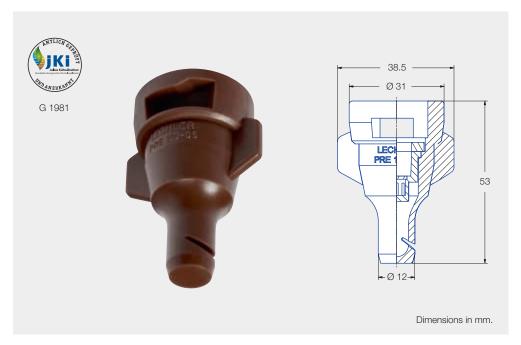




Extremely low-drift flat spray nozzle for timely application of pre-emergence herbicides.

#### **Advantages**

- Up to 95 % drift reduction depending on pressure and country
- Flexible adaption to buffer zones
- Wide pressure range from 1.5 8 bar
- High workrate through simple adaptation of I/ha rate and driving speed
- Timely application even under adverse weather conditions
- Nozzle in cap with MULTIJET bayonet system (incl. gasket)





**Nozzle size** 05



Spray angle 130°



**Material** POM



Pressure range 1.5 – 8 bar

- UAN: 1.5 - 4 bar



Recommended filters 25 M



**Droplet size**Ultra coarse

#### **Application areas**



Herbicides pre-emerge



Liquid fertilizer



Golf course



Example of ordering

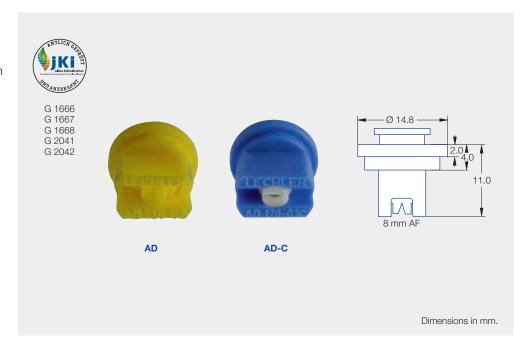
Type + spray angle + int'l nozzle size + material = ordering no. PRE  $130^{\circ}$  05 (POM) = PRE 130-05

## Anti-drift flat spray nozzles AD

Low-drift flat spray nozzle.

#### **Advantages**

- Application with medium to coarse droplet even with low l/ha rates
- Integrated pre-chamber ensures optimized atomization and reduced fine droplet share
- Preatomizer can be removed for cleaning





**Nozzle size** 015 – 04



Spray angle 90°, 120°



**Material** POM, ceramic



**Pressure range 1.5 - 3** - 6 bar



**Recommended filters** 80 M 01 – 015 60 M 02 – 04



**Droplet size** Coarse – fine



Width across flats 8 mm

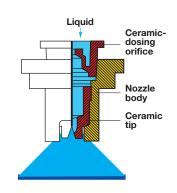
#### **Application areas**



Plant protection products and growth regulators



Removable preatomizer



Example of ordering

Type + spray angle + int'l nozzle size + material = ordering no.

AD 120° 02 (POM) = AD 120-02

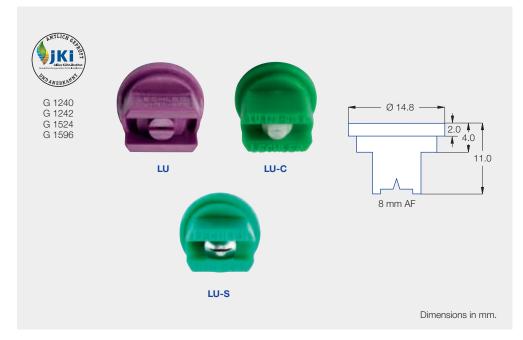
AD 120° 02 C (ceramic) = AD 120-02 C

## Multirange flat spray nozzles LU

Universal flat spray nozzle with finer droplet spectrum.

#### **Advantages**

- Extended pressure range
- Low drift in the pressure range up to 2.5 bar
- Fine-droplet application
- High manufacturing quality





## **Nozzle size** 01 – 08



## Spray angle 90°, 120°



## **Material** POM, stainless steel, ceramic



## **Pressure range 1.5 - 2.5** - 5 bar



## Recommended filters

80 M 01 – 015 60 M 02 – 04 25 M 05 – 08



## **Droplet size**Coarse – very fine



## Width across flats 8 mm

**Application areas** 



Plant protection products and growth regulators



Border application can be combined with border nozzle OC



Knapsack sprayer



Greenhouse

**Example of ordering** Type + spray angle + int'l nozzle size + material = ordering no. LU 120° 02 = LU 120-02 LU 120° 015 C (ceramic) = LU 120-015 C LU 03 S (stainless steel) = LU 120-03 S 120°

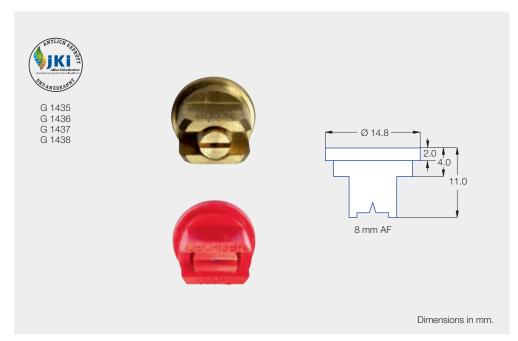
### **Even flat spray nozzles E**



Flat spray nozzle with rectangular liquid distribution for band and row spraying.

#### **Advantages**

- Only even flat spray nozzle with 90 % drift reduction approved by JKI (depending on nozzle size, pressure and country)
- Fully formed spray angle from 1 bar
- Uniform active ingredient distribution over the entire bandwidth
- Extremely small spraying distances possible





**Nozzle size** 01 – 08



Spray angle  $80^{\circ}$ 



**Material** Brass, POM



Pressure range 1 - 3 - 4 bar



Recommended filters

80 M 01 - 015 60 M 02 - 04 25 M 05 - 08



**Droplet size**Very coarse –
very fine



Width across flats 8 mm

#### **Application areas**



Band spraying

**Application-rate reduction** 

Depending on the band width

and row width, the amount

spraying amounts to 10-50% of the amount of liquid for full

of spraying liquid for band

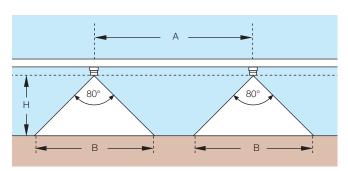
surface treatment.



Knapsack sprayer

#### **Nozzle alignment**

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	Band width B	Application rate* (in %), for a row spacing A					
cm	cm	50 cm	75 cm	100 cm			
7	10	20	13	10			
10	15	30	20	15			
13	20	40	27	20			
16	25	50	33	25			

<sup>\*</sup> Percentages in comparison with full-area treatment.

Exam	ple of ordering			
Type	+ spray angle	+ int'l nozzle size	+ material = ordering r	10.
E	80°	02	Brass = 8002 E bra	ass
E	80°	02	(POM) = 8002 E	
E	80°	02	(POM) = 8002 E	



### **Asymmetrical twin flat spray** air-injector nozzles IDTA





Extremely low-drift, air-aspirating air injector twin flat spray nozzle for optimized deposition and reduced spray shadow at higher driving speeds.

#### **Advantages**

- High drift reduction over entire pressure range
- Nozzle in cap with MULTIJET bayonet system (incl. gasket)
- Twin flat spray jet 30°/50° with asymmetrical spray angles and flow rates
  - $-90^{\circ}/120^{\circ}$  gives on the target area the same spray width
  - Finer droplet spectrum to the front in driving direction for optimum wetting
  - Coarser, more drift-resistant droplet spectrum to the rear
- Optimum user protection thanks to removal/installation of the injector with protective gloves without tools (Patent)
- JKI approval for mixed equipment with ID3 nozzles with the same nozzle size in the boom center section





#### Nozzle size 02 - 08



Spray angle Front 120° back 90°



Material Ceramic



Pressure range 1 - **4 - 8** bar

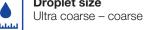


#### Recommended filters





#### **Droplet size**







Plant protection products and growth regulators



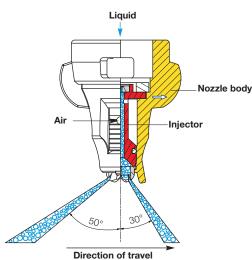
Border application can be combined with border nozzle IS 80



Golf course



Toolless removable injector



Rear spray angle 90° Front spray angle 120° (40 % spray volume) (60 % spray volume)

#### Example of ordering

Type + spray angle + int'l nozzle size + material = ordering no. C (ceramic) = IDTA 120-025 C IDTA 120°

## Symmetrical TWIN flat spray air-injector compact nozzles IDKT

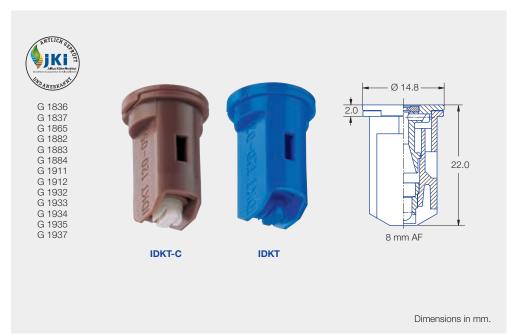


JKI-approval for mixed nozzle equipping

Very low-drift, air-injector twin flat spray nozzle for optimized deposition and reduced spray shadow.

#### **Advantages**

- Up to 90% drift reduction depending on nozzle size, pressure and country
- Compact design
- Optimum deposition on foliage and vertical target surfaces thanks to symmetrical twin flat spray jet 30°/30°
- Reduced spray shadow
- Drift reducing up to 3 bar (depending on nozzle size)
- JKI approval for mixed equipment with IDK/IDKN nozzles with the same nozzle sized in the boom center section





### **Nozzle size** 015 – 06



Spray angle 120°



**Material** POM, ceramic



#### Pressure range

– IDKT 015 to 025: **1.5 – 3** – 6 bar

- IDKT 03 to 06: 1 - **1.5 - 3** - 6 bar



## Recommended filters

80 M 015 – 02 60 M 025 – 06



### Droplet size

Ultra coarse – medium



### Width across flats 8 mm

#### **Application areas**



Plant protection products



Spray frame



Border application can be combined with border nozzle IDKS 80



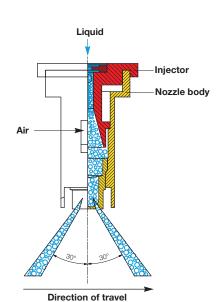
Golf course



Greenhouse



Toolless removable injector



#### Example of ordering

+ spray angle + int'l nozzle size + material = ordering no. Type **IDKT** 120° 04 = IDKT 120-04 (POM) **IDKT** 120° 04 C (ceramic) = IDKT 120-04 C 04 = MultiCap IDKT 120-04 MultiCap IDKT (POM) 120°

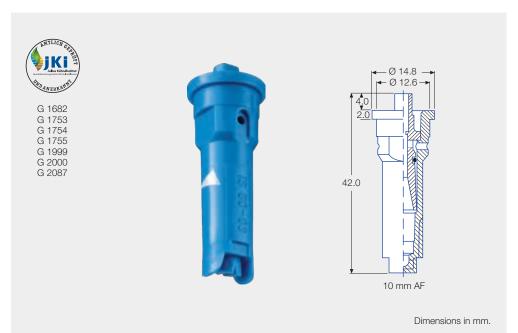




Extremely low-drift, air-injector off center nozzle for border application and banding.

#### **Advantages**

- Same JKI drift reduction class in combination with ID3 nozzles in the field spray boom
- Volume flow adapted for optimum cross distribution in combination with ID3-/IDTAnozzles of the same size
- Asymmetrical spray pattern (20°/60° to vertical axis)
- Precise edge application along water courses and field boundaries
- Optimum protection of neighboring crops (field edge application or row/special cultures (herbicide banding/ underleaf spraying)





#### Nozzle size

02 – 06



#### Spray angle



#### **Material** POM



#### Pressure range

- Sprayer/broadcast spraying:A S bar
  - 2 **4 8** bar
- Vertical sprayer boom:
  - 2 **8 15** bar



### Recommended filters

60 M 02 - 04 25 M 05 - 06



#### **Droplet size**

Ultra coarse – medium



#### Width across flats

10 mm

#### **Application areas**



Border nozzle



Band spraying in orchards and vineyards



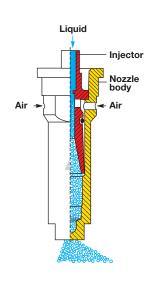
Vertical boom



Spray frame



Toolless removable injector



**Example of ordering** 

Type + spray angle + int'l nozzle size + material = ordering no. IS  $80^{\circ}$  02 (POM) = IS 80-02



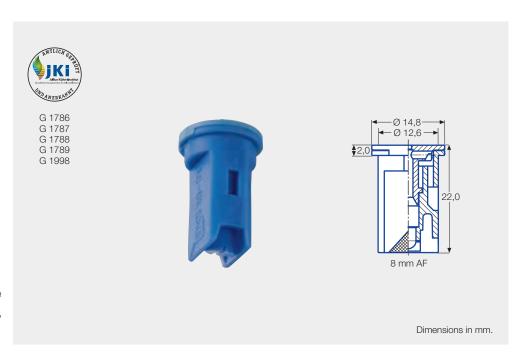
## Air-injector off center compact nozzles IDKS 80



Very low-drift, compact airinjector off center nozzle for border application and banding.

#### **Advantages**

- Same JKI drift reduction class in combination with IDK-/IDKN-/IDKT-nozzles in the field spray boom
- Volume flow adapted for optimum cross distribution in combination with IDK-/ IDKN-/IDKT-nozzles of the same size
- Asymmetrical spray pattern (20°/60° to axis)
- Precise edge application along water courses and field boundaries
- Optimum protection of neighboring crops (field edge application) or row/special cultures (herbicide banding/ underleaf spraying)





**Nozzle size** 015 – 06



Spray angle 80°



**Material** POM



#### Pressure range

Sprayer/broadcast spraying:

1 - **1.5 - 3** - 6 bar

Vertical sprayer boom:

1 - **8 - 15** bar



## Recommended filters

60 M 015 – 04 25 M 05 – 06



### Droplet size

Ultra coarse – medium



#### Width across flats

8 mm

#### **Application areas**



Border nozzle



Band spraying in orchards and vineyards



Vertical boom



Spray frame



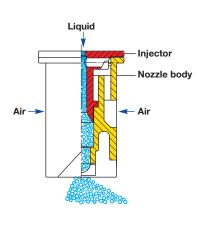
Knapsack sprayer



Greenhouse



Toolless removable injector



**Example of ordering** 

Type + spray angle + int'l nozzle size + material = ordering no. IDKS  $80^{\circ}$  02 (POM) = IDKS  $80^{\circ}$ 02



Ball check valves, nozzle strainers	Opening pressure	Mesh size	L [mm]	D [mm]	Material	Filter area (without gasket)	Ordering no.
Ball check valves*	0.5 bar	25 M <b>■</b> red	21.5	14.8	POM	628 mm <sup>2</sup>	065.266.56.00
	0.5 bar	60 M ■ blue	21.5	14.8	POM	628 mm <sup>2</sup>	065.265.56.00
	0.5 bar	25 M	21	14.8	Brass	430 mm²	065.261.30.00
	0.5 bar	60 M	21	14.8	Brass	430 mm²	065.260.30.00
	2.5 bar	25 M ■ red	21.5	14.8	POM	628 mm²	065.266.56.02
	2.5 bar	60 M ■ blue	21.5	14.8	POM	628 mm²	065.265.56.02
Ball check valve (excl. strainers)	0.5 bar	-	18.5	14.8	POM	-	065.266.56.01
Nozzle strainer*	-	25 M ■ red	21.5	14.8	РОМ	628 mm²	065.256.56.00
	-	60 M ■ blue	21.5	14.8	POM	628 mm²	065.257.56.00
	-	80 M yellow	21.5	14.8	POM	430 mm²	A.424.310.5
Slotted strainer	-	25 M <b>■</b> red	21.0	14.8	POM	430 mm²	095.009.56.13.43
Cup strainer	-	25 M	8.5	14.8	Cu/Monel	184 mm²	065.252.26.00
	-	25 M <b>■</b> red	8.5	14.8	PA, Monel	184 mm²	200.029.26.00.03
D —	-	60 M ■ blue	8.5	14.8	PA, stainless steel	184 mm²	200.029.1C.01.03
Nozzle strainer with integrated seal for TWISTLOC	-	25 M <b>■</b> red	19.2	18.0	POM, Santoprene	628 mm²	065.269.7J
	-	60 M ■ blue	19.2	18.0	POM, Santoprene	628 mm²	065.268.7J
Nozzle strainer with integrated seal for MULTIJET	-	60 M ■ blue	19.2	18.8	POM, Santoprene	628 mm²	065.268.7J.10

<sup>\*</sup> Please note: If applicable we deliver the strainers and ball check valves in the color coding according to ISO 19732:2007.



## Bayonet caps for »MULTIJET« and non-Lechler origin Intermediate and extension address. Intermediate and extension adaptor

MULTIJET	Description		Color code	Ordering no.
	Bayonet cap	Combi cap for nozzles with	■ red	Y.825.3C0.00.00.00.0
	incl. gasket Y.G00.002.02.0 for combination with System	8 and 10 mm AF ID3, IDK, IDKN, IDKT, AD, QS,	■ blue	Y.825.3C0.00.30.00.0
	MULTIJET, for example:	LU, ST, DF, IS, IDKS, OC, E,	yellow	Y.825.3C0.00.10.00.0
		FL, FS	■ lavender	Y.825.3C0.00.80.00.0
			green	Y.825.3C0.00.20.00.0
	400		■ brown	Y.825.3C0.00.70.00.0
			■ black	Y.825.3C0.00.40.00.0
	17		grey	Y.825.3C0.00.90.00.0
			white	Y.825.3C0.00.50.00.0
		Fibre-glass reinforced for nozzles with		
	<b>1</b>	AF 8	■ black	A.402.900.01.A
		AF 10	■ black	A.402.902.01.A
LECHIER	8.5	for hollow cone nozzles TR, ITR, FT, BN hose shanks	■ black	A.402.904.10
The same of	0.5	for flood nozzles FT	■ blue	A.402.908.4
	<b>■</b> 18.5 <b>■</b>	Bayonet cap 1/4" NPT	■ black	A.402.910.01
Lata Barrana manusa 1	Dimensions in	female		
Labeling on request.	Dimensions in mm.	Shut off cap	■ black	A.402.909

Non-Lechler origin	Description		Color code	Ordering no.
Bayonet cap Type H	System:  - Hardi incl. gasket (8 and 10 mm AF: 095.015.73.06.36)	Combi cap for nozzles with 8 and 10 mm AF ID3, IDK, IDKN, IDKT, AD, QS, LU, ST, DF, IS, IDKS, OC, E, FL, FS	■ black	090.078.56.00.40.1
	Gasket with special shape (in combination with nozzle strainer 065.256.56 or 065.257.56)			095.015.7J.04.34
Bayonet cap Type R	System: - Rau incl. gasket (095.015.73.04.61) since 2000 see Bayonet cap MULTIJET above	for nozzles with 8 mm AF IDK, IDKN, IDKT, AD, QS, LU, ST, IDKS, OC, E	■ red	095.016.56.05.90
		for nozzles with 10 mm AF ID3, DF, IS, FL, FS	■ lavender	095.016.56.05.97

#### Intermediate and extension adaptor



Intermediate adaptor\*
System Lechler TWISTLOC
(092.163.56.00.22.1) Extension: 22 mm

\*Incl. gasket.



Intermediate adaptor\* System Rau (092.163.56.00.21.0) Extension: 43 mm



Intermediate adaptor\* System Hardi (092.163.56.00.20.1) Extension: 17 mm



Extension adaptor\* System MULTIJET (092.163.56.00.23.1) Extension: 32 mm

### Farmer's helpers Anemometer

#### **Pocketwind IV**

#### **Features**

- Backlit display
- Waterproof and shockproof housing
- Lanyard
- Integrated hard cover for protection against damage and dirt
- Tripod thread

#### **Advantages**

- Self-calibrating humidity sensor
- Hard cover protects the measuring sensors against damage
- Measures all decisionrelevant application parameters

#### **Measuring functions**

- Air humidity
  - Relative humidity
  - Dew point
  - $-\Delta T$
  - Wet bulb thermometer
- Wind speed
  - Maximum
  - Average
  - Units m/s, km/h, fpm, mph, kn and bft, switchable
- Temperature/wind chill units °C and °F, switchable
- Wind direction
  - Digital compass
  - Integrated wind vane



## Farmer's helpers

#### **Accessories**



Cleaning brush Order no. 095.009.50.10.89.0

Nozzle assembly wrench Order no. 092.164.40.00.99.0

Droplet-size/dosage calculator Order no. 095.009.50.12.11.4

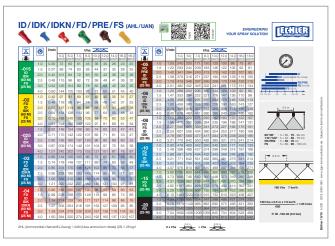




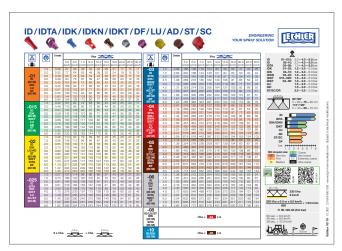


Nozzle aligner Order no. 065.231.02

### **Spray tables (sticker)**



**UAN (A4)** 



Arable crops (A4)

## **Spray table**

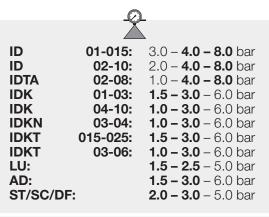
	bart	l/min				l/h	a <u></u>	0.5m						bary
( ( ( )			5.0 km/h	6.0 km/h	7.0 km/h	8.0 km/h	10.0 km/h	12.0 km/h	16.0 km/h	20.0 km/h	25.0 km/h	30.0 km/h	( )	
-01 ID (60 M) IDK LU ST (80 M)	1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0 6.0 7.0 8.0	0.28 0.32 0.36 0.39 0.42 0.45 0.51 0.55 0.60 0.64 0.42 0.48 0.54	67 77 86 94 101 108 115 122 132 144 154	56 64 72 78 84 90 96 102 110 120 128 84 96 108	48 55 62 67 72 77 82 87 94 103 110 72 82 93	42 48 54 59 63 68 72 77 83 90 96	34 38 43 47 50 54 58 61 66 72 77 50 58 65	28 32 36 39 42 45 48 51 55 60 64 42 48 54	21 24 27 29 32 34 36 38 41 45 48 32 36 41	17 19 22 23 25 27 29 31 33 36 38 25 29	13 15 17 19 20 22 23 24 26 29 31 20 23 24	11 13 14 16 17 18 19 20 22 24 26 17 19	-03 ID IDTA IDK/IDKN IDKT LU AD/ST SC (60 M) DF (80 M)	1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0 6.0 7.0 8.0
IDK (60 M) IDKT LU AD ST (80 M)	3.0 3.5 4.0 4.5 5.0 6.0 7.0 8.0	0.59 0.63 0.68 0.72 0.76 0.83 0.90 0.96	142 151 163 173 182 199 216 230 110 134	118 126 136 144 152 166 180 192 92 112	101 108 117 123 130 142 154 165 79 96	89 95 102 108 114 125 135 144 69 84	71 76 82 86 91 100 108 115 55 67	59 63 68 72 76 83 90 96 46 56	44 47 51 54 57 62 68 72 35 42	35 38 41 43 46 50 54 58 28 34	28 30 33 35 36 40 43 46 22 27	24 25 27 29 30 33 36 38 18 22	ID IDTA IDK/IDKN IDKT LU AD ST/SC DF (60 M)	2.0 2.5 3.0 3.5 4.0 5.0 6.0 7.0 8.0
-02 ID IDK LU/AD ST (60 M) IDKT IDTA DF (80 M)	1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0 6.0 7.0 8.0	0.56 0.65 0.73 0.80 0.86 0.92 0.98 1.03 1.13 1.22 1.30	156 175 192 206 221 235 247 271 293 312	112 130 146 160 172 184 196 206 226 244 260	111 125 137 147 158 168 177 194 209 223	98 110 120 129 138 147 155 170 183 195	78 88 96 103 110 118 124 136 146 156	65 73 80 86 92 98 103 113 122 130	42 49 55 60 65 69 74 77 85 92 98	39 44 48 52 55 59 62 68 73 78	31 35 38 41 44 47 49 54 59 62	22 26 29 32 34 37 39 41 45 49 52	-05 ID IDK LU ST/SC (25 M) IDTA IDKT DF (60 M)	1.0 1.5 2.0 2.5 3.0 3.5 4.0 5.0 6.0 7.0
-025 ID IDTA IDK IDKT LU ST/SC (60 M)	1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0 6.0 7.0	0.57 0.70 0.81 0.91 0.99 1.07 1.15 1.22 1.28 1.40	137 168 194 218 238 257 276 293 307 336 365	114 140 162 182 198 214 230 244 256 280 304	98 120 139 156 170 183 197 209 219 240 261	86 105 122 137 149 161 173 183 192 210 228	68 84 97 109 119 128 138 146 154 168	57 70 81 91 99 107 115 122 128 140	43 53 61 68 74 80 86 92 96 105	34 42 49 55 59 64 69 73 77 84 91	27 34 39 44 48 51 55 59 61 67 73	23 28 32 36 40 43 46 49 51 56 61	-06 ID IDK LU ST (25 M) IDTA IDKT DF (60 M)	1.0 1.5 2.0 2.5 3.0 3.5 4.0 5.0 6.0 7.0
	8.0	1.62	389	324	278	243	194	162	122	97	78	65	-08 ID/IDK/LU/ST (25 M) IDTA (60 M)	

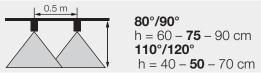
-10 ID/IDK (25 M)

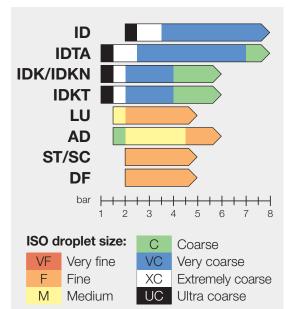
l/min				l/h	a <u></u>	r0.5m				
	5.0 km/h	6.0 km/h	7.0 km/h	8.0 km/h	10.0 km/h	12.0 km/h	16.0 km/h	20.0 km/h	25.0 km/h	30.0 km/h
0.69	166	138	118	104	83	69	52	41	33	28
0.84	202	168	144	126	101	84	63	50	40	34
0.97	233	194	166	146	116	97	73	58	47	39
1.08	259	216	185	162	130	108	81	65	52	43
1.19	286	238	204	179	143	119	89	71	57	48
1.28	307	256	219	192	154	128	96	77	61	51
1.37	329	274	235	206	164	137	103	82	66	55
1.46	350	292	250	219	175	146	110	88	70	58
1.53	367	306	262	230	184	153	115	92	73	61
1.68	403	336	288	252	202	168	126	101	81	67
1.81	434	362	310	272	217	181	136	109	87	72
1.94	466	388	333	291	233	194	146	116	93	78
0.91	218	182	156	137	109	91	68	55	44	36
1.12	269	224	192	168	134	112	84	67	54	45
1.29	310	258	221	194	155	129	97	77	62	52
1.44	346	288	247	216	173	144	108	86	69	58
1.58	379	316	271	237	190	158	119	95	76	63
1.71	410	342	293	257	205	171	128	103	82	68
1.82	437	364	312	273	218	182	137	109	87	73
2.04	490	408	350	306	245	204	153	122	98	82
2.23	535	446	382	335	268	223	167	134	107	89
2.41	578	482	413	362	289	241	181	145	116	96
2.58	619	516	442	387	310	258	194	155	124	103
1.14	274	228	195	171	137	114	86	68	55	46
1.39	334	278	238	209	167	139	104	83	67	56
1.61	386	322	276	242	193	161	121	97	77	64
1.80	432	360	309	270	216	180	135	108	86	72
1.97	473	394	338	296	236	197	148	118	95	79
2.13	511	426	365	320	256	213	160	128	102	85
2.28	547	456	391	342	274	228	171	137	109	91
2.55	612	510	437	383	306	255	191	153	122	102
2.79	670	558	478	419	335	279	209	167	134	112
3.01	722	602	516	452	361	301	226	181	144	120
3.22	773	644	552	483	386	322	242	193	155	129
1.36	326	272	233	204	163	136	102	82	65	54
1.67	401	334	286	251	200	167	125	100	80	67
1.93	463	386	331	290	232	193	145	116	93	77
2.16	518	432	370	324	259	216	162	130	104	86
2.36	566	472	405	354	283	236	177	142	113	94
2.55	612	510	437	383	306	255	191	153	122	102
2.73	655	546	468	410	328	273	205	164	131	109
3.05	732	610	523	458	366	305	229	183	146	122
3.34	802	668	573	501	401	334	251	200	160	134
3.61	866	722	619	542	433	361	271	217	173	144
3.86	926	772	662	579	463	386	290	232	185	154
	İ									

I/ha = -04 x 2

I/ha = -05 x 2

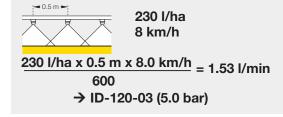












 $60 \sec = 6.0 \text{ km/h}$   $45 \sec = 8.0 \text{ km/h}$  $36 \sec = 10.0 \text{ km/h}$ 



## **DROPLET SIZE TABLE**

Page		ID 120-01			UC	XC	XC	VC	VC	VC	VC	VC	VC	VC	С	С	С
		ID 120-015			XC	XC	VC	VC	VC	VC	VC	VC	С	С	С	C	C
14		ID 120-02			XC	VC	VC	VC	VC	VC	VC	С	С	C	C	M	М
		ID 120-025			UC	XC	XC	VC	VC	VC	VC	VC	VC	VC	VC	VC	VC
		ID 120-03			UC	XC	XC	VC	VC	VC	VC	VC	VC	VC	VC	VC	VC
		ID 120-04			XC	XC	XC	VC	VC	VC	VC	VC	VC	VC	VC	VC	VC
		ID 120-05			UC	XC	XC	XC	VC	VC	VC	VC	VC	VC	VC	VC	VC
		ID 120-06			XC	XC	XC	XC	VC	VC	VC	VC	VC	VC	VC	VC	VC
		ID 120-08			XC	XC	XC	XC	VC	VC	VC	VC	VC	VC	VC	VC	VC
		ID 120-10			UC	UC	XC	XC	XC	XC	VC	VC	VC	VC	VC	VC	VC
20			ШС	ШС				VC		VC			VC				VC
		IDTA 120-02	UC	UC	UC	XC	VC		VC		VC	VC		VC	VC	VC	
		IDTA 120-025	UC	UC	UC	XC	XC	VC	VC	VC	VC	VC	VC	VC	VC	VC	VC
		IDTA 120-03	UC	UC	XC	XC	VC	VC	VC	VC	VC	VC	VC	VC	VC	VC	VC
		IDTA 120-04	UC	UC	XC	XC	VC	VC	VC	VC	VC	VC	VC	VC	VC	С	С
		IDTA 120-05	UC	UC	XC	XC	VC	VC	VC	VC	VC	VC	VC	VC	С	С	С
		IDTA 120-06	UC	UC	XC	VC	VC	C	С	С	С						
		IDTA 120-08	UC	UC	XC	XC	VC	VC	VC	VC	VC	VC	VC	VC	С	С	С
		IDK 120-01		VC	VC	VC	VC	С	С	М	М	М	М				
15		IDK 120-015		VC	VC	VC	С	С	С	М	М	М	М				
		IDK 120-02		VC	VC	VC	VC	С	С	С	С	М	М				
		IDK 120-025		VC	VC	VC	С	С	С	М	М	М	М				
		IDK 120-03		VC	VC	VC	VC	VC	С	С	С	С	М				
		IDK 120-04	UC	XC	XC	VC	VC	VC	С	С	С	С	С				
		IDK 120-05	XC	XC	VC	VC	VC	VC	VC	С	С	С	С				
		IDK 120-06	XC	VC	VC	VC	VC	VC	С	С	С	С	С				
15	<b>F</b>	IDK 120-08	UC	XC	VC	С	С										
		IDK 120-10	UC	XC	VC	С											
		IDKN 120-03	UC	XC	XC	VC	VC	VC	VC	С	С	С	С				
		IDKN 120-04	UC	XC	XC	VC	VC	VC	VC	VC	С	С	С				
		IDKT 120-015		UC	XC	XC	VC	VC	VC	VC	VC	VC	VC				
21		IDKT 120-02		XC	XC	VC	VC	VC	VC	VC	С	С	С				
		IDKT 120-025		XC	VC	VC	VC	VC	VC	С	С	С	М				
		IDKT 120-03	UC	XC	XC	VC	VC	VC	VC	VC	VC	С	С				
		IDKT 120-04	XC	XC	VC	VC	VC	VC	VC	С	С	С	С				
		IDKT 120-05	UC	XC	VC	VC	VC	VC	VC	С	С	С	С				
		IDKT 120-06	UC	XC	VC	VC	VC	VC	VC	С	С	С	С				
17		AD 120-015		М	F	F	F	F	F	F	F	F	F				
		AD 120-013		C	М	M	M	М	F	F	F	F	F				
		AD 120-03		С	M	M	M	M	M	M	F	F	F				
		AD 120-04		С	C	M	M	M	M	M	M	M	F				
18												101	'				
		LU 120-01 S		F	F	F	F	F	F	VF	VF						
		LU 120-015		F	F	F	F	F	F	F	VF						
	<b>_</b>	LU 120-02		M	F	F	F	F	F	F	F						
		LU 120-025		M	F	F	F	F	F	F	F						
		LU 120-03		M	F	F	F	F	F	F	F						
		LU 120-04		M	M	M	F	F	F	F	F						
		LU 120-05		M	M	M	F	F	F	F	F						
		LU 120-06		M	M	M	F	F	F	F	F						
		LU 120-08		С	М	М	М	М	М	М	М						
					+	_		_	_				-	-		_	

#### ISO 25358: Droplet size classification



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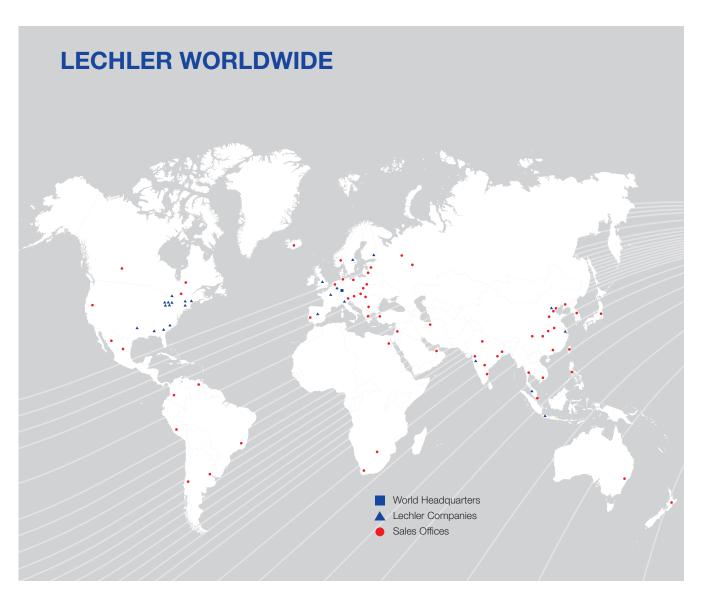
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