eppendorf

REPRODUCTION DUTSCHER SAS

Combitips advanced®
ViscoTip®

Instructions for use

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Table of contents

1 Operating instructions 5
1.1 Using this manual 5
1.2 Symbols used 5

2 Safety 5
2.1 Intended use 5
2.2 Application limits 5
2.3 Warnings for intended use 6

3 Product description 7
3.1 Product overview 7
3.2 Features 7
3.3 Overview of dispenser tips 8
3.3.1 Combitips advanced volume ranges 8
3.3.2 ViscoTip volume range 8
3.4 Dispenser 9
3.4.1 Current dispensers 9
3.4.2 Compatible dispensers 9
3.5 Materials 9

4 Operation 10
4.1 Unpacking the dispenser tip 10
4.2 Assembling the dispenser tip and the adapter 10

5 Maintenance 11
5.1 Cleaning 11
5.1.1 Autoclaving the Adapter advanced 11
5.1.2 Autoclaving the Combitips advanced Rack 11

6 Technical data 11
6.1 Ambient conditions 11
6.2 Minimum shelf life of dispenser tips 11
6.3 Eppendorf purity grades 12
6.4 Certificates 12

7 Transport, storage and disposal 13
7.1 Storage 13

8 Ordering information 14
8.1 Dispenser tip – Combitips advanced 14
8.1.1 Purity grade – Eppendorf Quality 14
8.1.2 Purity grade – Sterile 15
8.1.3 Purity grade – Biopur 16
8.1.4 Purity grade – PCR clean 17
8.1.5 Purity grade – Forensic DNA Grade 17
8.1.6 Adapter advanced for Combitips advanced 18

DOMINIQUE DUTSCHER SAS

8.2 Dispenser tip – ViscoTip 18
8.2.1 Purity grade – Eppendorf Quality 18
8.3 Accessories 18
8.4 Current dispensers 19
8.4.1 Multipette E3/E3x – Repeater E3/E3x 19
8.4.2 Multipette M4 – Repeater M4 19

DOMINIQUE DUTSCHER SAS

1 Operating instructions

1.1 Using this manual

Before using the dispenser tips for the first time, read these instructions for use and the operating manual of the dispenser that you use the dispenser tips with. The current version can be found on the Internet at www.eppendorf.com/manuals. These instructions for use do not replace the operating manual of the dispenser.

1.2 Symbols used

Depiction	Meaning
1. 2.	Actions in the specified order
▸	Actions without a specified order
•	List
Text	Display or software texts
ⓘ	Additional information

2 Safety

2.1 Intended use

The Combitips advanced and ViscoTip dispenser tips are exclusively designed for use with an Eppendorf dispenser (Multipette or Repeater) to dispense liquids within a volume range of 1 µL – 50 mL. In-vivo applications (applications in or on the human body) are not allowed. The dispenser tips may only be used by trained and skilled personnel. The user must carefully read the instructions for use of the dispenser tips and the operating manual of the dispenser used and have become familiar with how the device works.

2.2 Application limits

Dispenser tip	Dynamic viscosity
Combitips advanced	Up to 200 mPa·s
ViscoTip	200 mPa·s – 14000 mPa·s

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2.3 Warnings for intended use



WARNING! Damage to health due to infectious liquids and pathogenic germs.

- When handling infectious liquids and pathogenic germs, observe the national regulations, the biosafety level of your laboratory, the material safety data sheets, and the manufacturer's application notes.
- Wear your personal protective equipment.
- For comprehensive regulations about handling germs or biological material of risk group II or higher, please refer to the "Laboratory Biosafety Manual" (source: World Health Organization, Laboratory Biosafety Manual, the current edition).



WARNING! Damage to health due to toxic, radioactive or aggressive chemicals.

- Wear your personal protective equipment.
- Observe the national regulations for handling these substances.
- Observe the material safety data sheets and manufacturer's application notes.



NOTICE! Carry-over, contamination and incorrect dispensing results due to incorrect use of dispenser tips.
Dispenser tips are intended for single use. Prolonged use can have a negative impact on dispensing accuracy.

- Use dispenser tips only once.
- Do not use washed or autoclaved dispenser tips for dispensing.



NOTICE! Incorrect dispensing results due to evaporation.
If dispensing with a Combitip that has already been filled is continued after a long waiting time, the dispensing volume in the next dispensing step may be slightly reduced due to evaporation.

- If high accuracy is required, discard this dispensing step.



WARNING! Personal injury and material damage due to bursting dispenser tip.
If stored for a long period of time, liquids can crystallize or solidify and thus block the outlet opening. The dispenser tip can burst during dispensing.

- Check the consistency of the liquid.
- Dispense immediately after liquid aspiration.

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3 Product description

3.1 Product overview

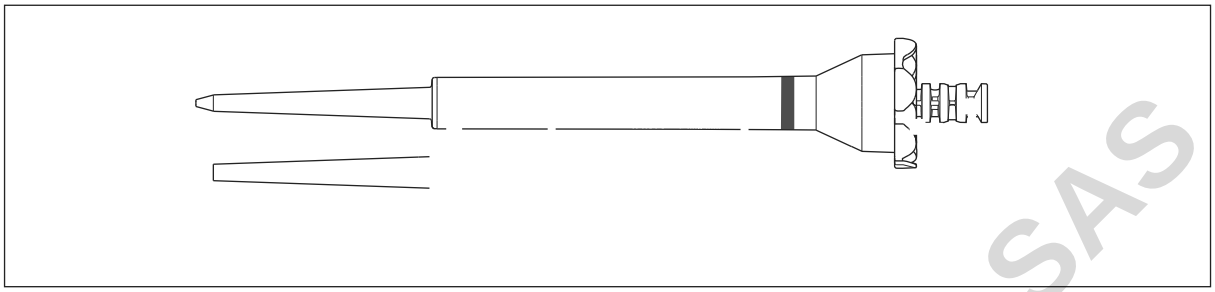


Fig. 3-1: Dispenser tip using the example of Combitips advanced 2.5 mL

1 **Dispenser opening**
Combitips advanced

2 **Dispenser opening**
ViscoTip

3 **Dispensing volume**
Selection dial position 1 on a mechanical dispenser

4 **Graduation**
Volume graduation in 5 increments

5 **Maximum volume**

6 **Color code for volume identification**
One colored ring = Combitips advanced
Two colored rings = ViscoTip

7 **Coding**
For automatic volume identification of the dispenser

8 **Piston**

3.2 Features

Combitips advanced and ViscoTip are single-use dispenser tips for aspirating and dispensing liquid. The dispenser tips consist of a cylinder and an integrated piston and function according to the positive displacement principle. The dispenser tips are available in different sizes. The sizes can be identified by colored rings. An adapter (Adapter advanced) is required for the sizes 25 mL and 50 mL.

The ViscoTip dispenser tip is specifically designed for highly viscous liquids with more than 200 mPa·s (e.g., 99.5 % Glycerol, Tween 20, honey, oils, etc.).

For liquids with a viscosity of less than 200 mPa·s, the Combitips advanced should be used to achieve a higher dosing accuracy.

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3.3 Overview of dispenser tips

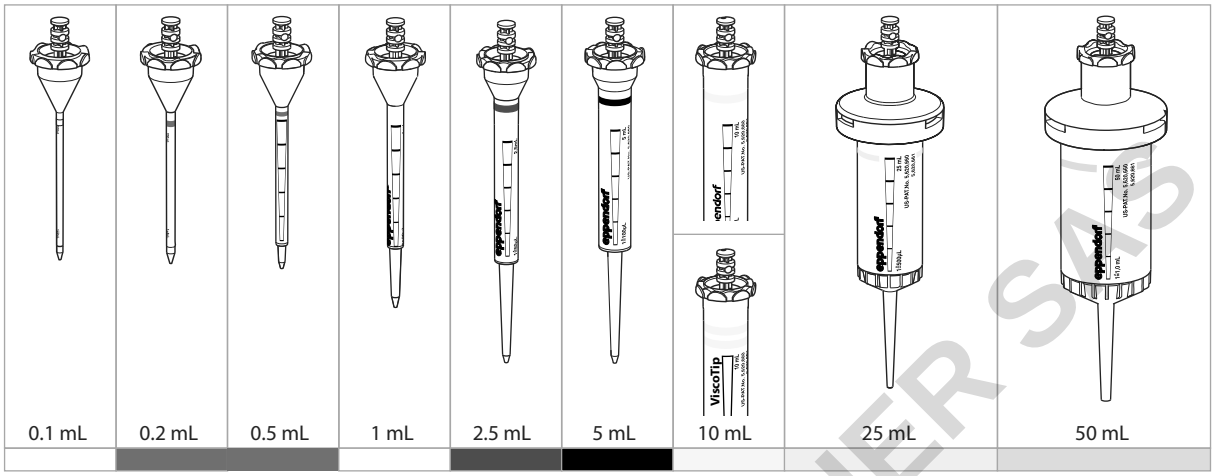


Fig. 3-2: Combitips advanced (one colored ring) and ViscoTip (two colored rings)

3.3.1 Combitips advanced volume ranges

Combitips advanced	Volume range	Increment
0.1 mL white	1.0 µL – 100 µL	0.1 µL
0.2 mL light blue	2.0 µL – 200 µL	0.2 µL
0.5 mL violet	5.0 µL – 500 µL	0.5 µL
1.0 mL yellow	10 µL – 1000 µL	1.0 µL
2.5 mL green	25 µL – 2500 µL	2.5 µL
5.0 mL blue	50 µL – 5000 µL	5.0 µL
10 mL orange	0.1 mL – 10 mL	0.01 mL
25 mL red	0.25 mL – 25 mL	0.025 mL
50 mL light gray	0.5 mL – 50 mL	0.05 mL

3.3.2 ViscoTip volume range

ViscoTip	Volume range	Increment
10 mL orange	0.1 mL – 10 mL	0.01 mL

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3.4 Dispenser

All dispenser tips can be used with the following dispensers:

3.4.1 Current dispensers

Dispenser	Dispensing range
Multipette E3/Multipette E3x Repeater E3/Repeater E3x	1 µL – 50 mL
Multipette M4 Repeater M4	1 µL – 10 mL

3.4.2 Compatible dispensers

Dispenser	Dispensing range
Multipette 4780 Repeater 4780	2 µL – 5 mL
Multipette plus Repeater plus	1 µL – 10 mL
Multipette pro Repeater pro	1 µL – 50 mL
Multipette stream Repeater stream	1 µL – 50 mL
Multipette Xstream Repeater Xstream	1 µL – 50 mL
EDOS 5222	1 µL – 50 mL

3.5 Materials

NOTICE! Aggressive substances may damage dispensers, dispenser tips and accessories.

- Check the chemical resistance when using organic solvents or aggressive chemicals.
- Observe the cleaning instructions.

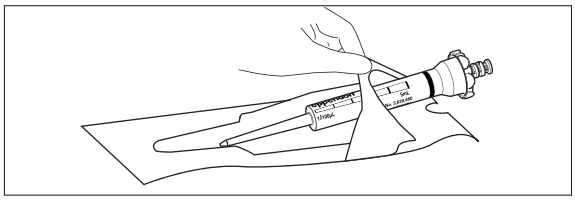
Dispenser tip	Material
Cylinder	Polypropylene (PP)
Piston, 0.1 mL and 0.2 mL	Polyethylene (PE) with glass fiber (GF)
Piston, 0.5 mL to 50 mL	Polyethylene (PE)
Adapter advanced	Polybutylene terephthalate (PBT)

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4 Operation

4.1 Unpacking the dispenser tip

To ensure maximum protection against contamination, use dispenser tips of the Sterile and Biopur purity grades straight after opening the packaging.



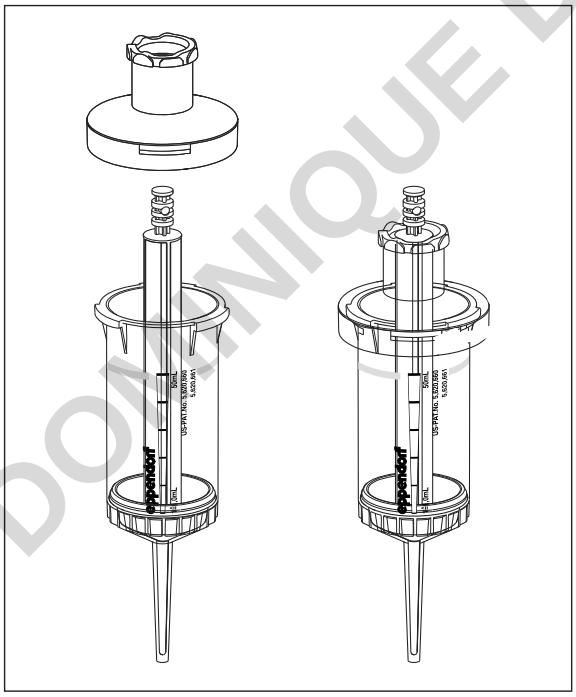
1. Open the packing at the location indicated.
2. Insert the dispenser tip into the dispenser.

4.2 Assembling the dispenser tip and the adapter

Dispenser tips (25 mL and 50 mL) can only be used with the corresponding adapter. The color of the adapter is the same as the color code of the dispenser tip.

NOTICE! Sensor damage due to damaged or worn adapters.

- Always assemble the adapter and the dispenser tip outside the dispenser.
- Do not used damaged or worn adapters.
- Do not use adapters with damaged coding.



1. Fit the adapter onto the dispenser tip.
2. Tighten the adapter.

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5 Maintenance

5.1 Cleaning

Dispenser tips are not autoclavable.

5.1.1 Autoclaving the Adapter advanced

- Rinse the Adapter advancedwith water.
- Autoclave the Adapter advanced for 20 min at a positive pressure of 1 bar and a temperature of 121 °C. The Adapter advanced can be autoclaved up to 100 times.

5.1.2 Autoclaving the Combitips advanced Rack

- Autoclave the empty Combitips advanced Rack for 20 min at a positive pressure of 1 bar and a temperature of 121 °C. Racks can be autoclaved up to 100 times.

6 Technical data

6.1 Ambient conditions

Environment	For indoor use only
Ambient temperature	4°C – 40 °C
Relative humidity	10 % – 95 %, non-condensing
Atmospheric pressure	79.5 kPa – 166 kPa

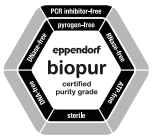
6.2 Minimum shelf life of dispenser tips

Dispenser tip	**Purity grade**	**Minimum shelf life**
Combitips advanced ViscoTip	Eppendorf Quality	at least 8 years
	Sterile	at least 5 years
	PCR clean	
	Biopur	
	Forensic DNA Grade	

The production date can be found on the packaging. The minimum shelf life is in relation to the production date.

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6.3 Eppendorf purity grades

	Eppendorf Quality	Sterile	PCR clean	Biopur	Forensic DNA Grade
					
Batch testing (certified) for the following purity criteria					
Human DNA-free			■	■	■
DNA-free (free of human and bacterial DNA)				■	
DNase-free			■	■	■
RNase-free			■	■	■
PCR inhibitor-free			■	■	■
ATP-free				■	
Pyrogen-free (endotoxin-free)		■		■	
Sterile (Ph.Eur./USP)		■		■	

6.4 Certificates

There are different categories of certificates for Eppendorf consumables:

Batch-specific certificates are prepared for the following purity grades:
- Biopur
- Forensic DNA Grade
- PCR clean
- Sterile

General certificates of conformity:
- Certificate of conformity for products with the purity grade Biopur (Certificate of Quality/Conformity – Biopur)
- Certificate of conformity for products with the purity grade Forensic DNA Grade (Certificate of Purity – Eppendorf Forensic DNA Grade according to ISO 18385)
- Certificate of conformity for products with the purity grade PCR clean (Certificate of Purity – PCR clean)
- Combitips advanced certificate of conformity (Certificate of Quality – Combitips advanced)
- Certificate of conformity regarding trace metal (Certificate of Quality – Combitips advanced. – Typical values for trace metal)
- Certificate of conformity regarding toxic tests (Certificate of Quality – Results of Mouse Embroytoxicity Test)
- Certificate of conformity regarding the plastic granulates used (Certificate of Quality/Conformity – Laboratory Consumables)

All certificates can be downloaded from our website www.eppendorf.com/certificates.

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7 Transport, storage and disposal

7.1 Storage



NOTICE! Damage to device due to incorrect storage.

- Do not store the device with the dispenser tip inserted.
- Select a secure storage location.
- Do not expose the device to aggressive gases over an extended period.



NOTICE! Damage due to UV radiation.

- Do not store consumables in areas with strong UV radiation.

	Air temperature	Relative humidity	Atmospheric pressure
In transport packing	-25 °C – 45 °C	10 % – 95 %	70 kPa – 106 kPa
Without transport packing	-5 °C – 45 °C	10 % – 95 %	70 kPa – 106 kPa

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8 Ordering information

8.1 Dispenser tip – Combitips advanced

8.1.1 Purity grade – Eppendorf Quality

Order no. (International)	Order no. (North America)	Description
0030 089.405	0030089405	**Combitips advanced 0.1 mL** 100 pieces Eppendorf Quality
0030 089.413	0030089413	**Combitips advanced 0.2 mL** 100 pieces Eppendorf Quality
0030 089.421	0030089421	**Combitips advanced 0.5 mL** 100 pieces Eppendorf Quality
0030 089.430	0030089430	**Combitips advanced 1.0 mL** 100 pieces Eppendorf Quality
0030 089.448	0030089448	**Combitips advanced 2.5 mL** 100 pieces Eppendorf Quality
0030 089.456	0030089456	**Combitips advanced 5.0 mL** 100 pieces Eppendorf Quality
0030 089.464	0030089464	**Combitips advanced 10 mL** 100 pieces Eppendorf Quality
0030 089.472	0030089472	**Combitips advanced 25 mL** 100 pieces + 4 Adapter Eppendorf Quality
0030 089.480	0030089480	**Combitips advanced 50 mL** 100 pieces + 4 Adapter Eppendorf Quality

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8.1.2 Purity grade – Sterile

Order no. (International)	Order no. (North America)	Description
–	0030089510	**Combitips advanced 0.1 mL** 100 pieces Sterile, individually wrapped
–	0030089529	**Combitips advanced 0.2 mL** 100 pieces Sterile, individually wrapped
–	0030089537	**Combitips advanced 0.5 mL** 100 pieces Sterile, individually wrapped
–	0030089545	**Combitips advanced 1.0 mL** 100 pieces Sterile, individually wrapped
–	0030089553	**Combitips advanced 2.5 mL** 100 pieces Sterile, individually wrapped
–	0030089561	**Combitips advanced 5.0 mL** 100 pieces Sterile, individually wrapped
–	0030089570	**Combitips advanced 10 mL** 100 pieces Sterile, individually wrapped
–	0030089588	**Combitips advanced 25 mL** 100 pieces + 4 Adapter Sterile, individually wrapped
–	0030089596	**Combitips advanced 50 mL** 100 pieces + 4 Adapter Sterile, individually wrapped

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8.1.3 Purity grade – Biopur

Order no. (International)	Order no. (North America)	Description
0030 089.618	0030089618	**Combitips advanced 0.1 mL** 100 pieces Biopur, individually wrapped
0030 089.626	0030089626	**Combitips advanced 0.2 mL** 100 pieces Biopur, individually wrapped
0030 089.634	0030089634	**Combitips advanced 0.5 mL** 100 pieces Biopur, individually wrapped
0030 089.642	0030089642	**Combitips advanced 1.0 mL** 100 pieces Biopur, individually wrapped
0030 089.650	0030089650	**Combitips advanced 2.5 mL** 100 pieces Biopur, individually wrapped
0030 089.669	0030089669	**Combitips advanced 5.0 mL** 100 pieces Biopur, individually wrapped
0030 089.677	0030089677	**Combitips advanced 10 mL** 100 pieces Biopur, individually wrapped
0030 089.685	0030089685	**Combitips advanced 25 mL** 100 pieces + 4 Adapter Biopur, individually wrapped
0030 089.693	0030089693	**Combitips advanced 50 mL** 100 pieces + 4 Adapter Biopur, individually wrapped

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8.1.4 Purity grade – PCR clean

Order no. (International)	Order no. (North America)	Description
0030 089.766	–	**Combitips advanced 0.1 mL** 100 pieces PCR clean
0030 089.774	–	**Combitips advanced 0.2 mL** 100 pieces PCR clean
0030 089.782	–	**Combitips advanced 0.5 mL** 100 pieces PCR clean
0030 089.790	–	**Combitips advanced 1.0 mL** 100 pieces PCR clean
0030 089.804	–	**Combitips advanced 2.5 mL** 100 pieces PCR clean
0030 089.812	–	**Combitips advanced 5.0 mL** 100 pieces PCR clean
0030 089.820	–	**Combitips advanced 10 mL** 100 pieces PCR clean
0030 089.839	–	**Combitips advanced 25 mL** 100 pieces + 4 Adapter PCR clean
0030 089.847	–	**Combitips advanced 50 mL** 100 pieces + 4 Adapter PCR clean

8.1.5 Purity grade – Forensic DNA Grade

Order no. (International)	Order no. (North America)	Description
0030 089.855	0030089855	**Combitips advanced 1.0 mL** 100 pieces Forensic DNA Grade, individually wrapped
0030 089.863	0030089863	**Combitips advanced 2.5 mL** 100 pieces Forensic DNA Grade, individually wrapped
0030 089.871	0030089871	**Combitips advanced 5.0 mL** 100 pieces Forensic DNA Grade, individually wrapped

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8.1.6 Adapter advanced for Combitips advanced

Order no. (International)	Order no. (North America)	Description
0030 089.715	0030089715	**Adapter advanced 25 mL** 1 piece Eppendorf Quality
0030 089.723	0030089723	**Adapter advanced 50 mL** 1 piece Eppendorf Quality
0030 089.731	0030089731	**Adapter advanced 25 mL** 7 pieces Biopur, individually wrapped
0030 089.740	0030089740	**Adapter advanced 50 mL** 7 pieces Biopur, individually wrapped

8.2 Dispenser tip – ViscoTip

8.2.1 Purity grade – Eppendorf Quality

Order no. (International)	Order no. (North America)	Description
0030 089.502	0030089502	**ViscoTip 10 mL** 100 pieces Eppendorf Quality

8.3 Accessories

Order no. (International)	Order no. (North America)	Description
0030 089.758	0030089758	**Combitips advanced Rack** 1 piece Eppendorf Quality, for 8 dispenser tips (0.1 – 10 mL)

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8.4 Current dispensers

8.4.1 Multipette E3/E3x – Repeater E3/E3x

Order no. (International)	Order no. (North America)	Description
4987 000.010	–	**Multipette E3**
4987 000.029	–	**Multipette E3x**
–	4987000118	**Repeater E3**
–	4987000134	**Repeater E3x**
4987 000.371	–	**Multipette E3 bundle**
4987 000.380	–	**Multipette E3x bundle**
–	4987000398	**Repeater E3 bundle** incl. charger stand
–	4987000410	**Repeater E3x bundle** incl. charger stand

8.4.2 Multipette M4 – Repeater M4

Order no. (International)	Order no. (North America)	Description
4982 000.012	–	**Multipette M4**
–	4982000020	**Repeater M4**
4982 000.314	–	**Multipette M4 Starter Kit** Multipette M4, Combitip Rack, Combitip Assortmentpack
–	4982000322	**Repeater M4 Starter Kit** Repeater M4, Combitip Rack, Combitip Assortmentpack

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