GLOSSAR

**TOR** .......................... *Total Output Rate, mg/min*
Gravimetrically determined total mass output per minute

**MMD** .......................... *Mass Median Diameter, μm*
Diameter at which 50% of the particles by mass are smaller or equal

*Mass fractions < 5μm ... Mass of medication in droplets smaller than 5 micrometres*

(1 μm = one 100,000th of a metre)
**INHALATION DEVICES**

**UPPER AIRWAYS**
- PARI SINUS ......................................................... 8
- PARI MONTESOL Nasal Douche and Nasal Rinse ............ 9

**LOWER AIRWAYS**
- VELOX® and VELOX® Junior .................................... 12
- PARI BOY® mobile S .............................................. 13
- PARI BOY® SX ..................................................... 14
- PARI JuniorBOY® SX ........................................... 15
- PARI TurboBOY® SX ............................................ 16
- PARI mini® .......................................................... 17
- PARI COMPACT .................................................... 18

**SPECIAL THERAPY**
- eFlow*rapid nebuliser system .................................... 20

**NEBULISERS**
- Which nebuliser is right? ........................................ 24
- PARI LC SPRINT® Family ...................................... 26
- PARI PIF Control .................................................. 27
- PARI LC PLUS® Nebuliser ..................................... 28
- Masks & Mouthpieces for Nebuliser ........................... 29
- PARI Year Packs ................................................... 31
- PARI Nebulisers ..................................................... 34

**HOLDING CHAMBER**
- VORTEX* ............................................................. 38
- VORTEX® Tracheo ................................................ 40

**SALINE SOLUTIONS**
- PARI NaCl Inhalation Solution ................................. 42
- MucoClear® 3% Inhalation Solution .......................... 43
- MucoClear® 6% Inhalation Solution .......................... 44

**PEP SYSTEMS**
- PARI PEP Systems ............................................... 46
- PARI O-PEP .......................................................... 47

**DIAGNOSTICS**
- SpiroSense®Pro .................................................... 50
- mySpiroSense® ..................................................... 51
- PARI PEAK FLOW METER ...................................... 52

**CLINIC PRODUCTS**
- PARI CENTRAL .................................................... 54
- PARI LC SPRINT® CENTRAL .................................. 55
- VORTEX* ............................................................. 56
- Nebulisers and Accessories ...................................... 57
- PARI Filter/Valve Set .............................................. 58

**FURTHER INFORMATION**
- PARI International ............................................... 60
- PARI Publication List ............................................. 62
## Inhalation Devices

<table>
<thead>
<tr>
<th>Device</th>
<th>Configuration</th>
<th>Year Pack</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PARI SINUS</strong></td>
<td>• PARI LC SPRINT SINUS Nebuliser&lt;br&gt;• PARI SINUS tube system</td>
<td><strong>PARI LC SPRINT SINUS Year Pack</strong>&lt;br&gt;Item No. 023G2860</td>
</tr>
<tr>
<td><strong>VELOX® Junior</strong></td>
<td>• VELOX control unit&lt;br&gt;• VELOX membrane nebuliser&lt;br&gt;• Mouthpiece&lt;br&gt;• VELOXcare&lt;br&gt;• Power adapter&lt;br&gt;• Case&lt;br&gt;• SMARTMASK Baby</td>
<td><strong>VELOX Junior Year Pack</strong>&lt;br&gt;Item No. 055G3110</td>
</tr>
<tr>
<td><strong>PARI JuniorBOY® SX</strong></td>
<td>• Mouthpiece&lt;br&gt;• BABY mask size 2/BABY bend&lt;br&gt;• PARI LC SPRINT Junior Nebuliser</td>
<td><strong>PARI JuniorBOY Year Pack S</strong>&lt;br&gt;Item No. 023G1111</td>
</tr>
<tr>
<td><strong>PARI BOY® SX</strong></td>
<td>• Mouthpiece&lt;br&gt;• Child mask soft&lt;br&gt;• PARI LC SPRINT Nebuliser&lt;br&gt;• Additional red nozzle attachment&lt;br&gt;• LC Interrupter&lt;br&gt;• PIF Control</td>
<td><strong>PARI BOY SX Year Pack</strong>&lt;br&gt;Item No. 023G8511</td>
</tr>
<tr>
<td><strong>PARI TurboBOY® SX</strong></td>
<td>• Mouthpiece&lt;br&gt;• Child mask soft&lt;br&gt;• Adult mask soft&lt;br&gt;• PARI LC SPRINT Nebuliser</td>
<td><strong>PARI TurboBOY Year Pack S</strong>&lt;br&gt;Item No. 023G1011</td>
</tr>
<tr>
<td><strong>PARI mini®</strong></td>
<td>• Mouthpiece&lt;br&gt;• Child mask soft&lt;br&gt;• PARI LC SPRINT Nebuliser</td>
<td><strong>PARI TurboBOY Year Pack S</strong>&lt;br&gt;Item No. 023G1011</td>
</tr>
<tr>
<td><strong>PARI BOY® mobile S</strong></td>
<td>• Mouthpiece&lt;br&gt;• Child mask soft&lt;br&gt;• PARI LC SPRINT Nebuliser&lt;br&gt;• 12 V vehicle electrical socket&lt;br&gt;• Convenient shoulder bag</td>
<td><strong>PARI TurboBOY Year Pack S</strong>&lt;br&gt;Item No. 023G1011</td>
</tr>
<tr>
<td><strong>PARI COMPACT</strong></td>
<td>• Mouthpiece&lt;br&gt;• Child mask soft&lt;br&gt;• PARI LC PLUS Nebuliser</td>
<td>–</td>
</tr>
<tr>
<td><strong>eFlow®rapid</strong></td>
<td>• 2 complete nebulisers&lt;br&gt;• Storage bag&lt;br&gt;• Easycare cleaning apparatus&lt;br&gt;• Nebuliser bag&lt;br&gt;• Power adapter/batteries</td>
<td>–</td>
</tr>
</tbody>
</table>
### Target group/Characteristic

<table>
<thead>
<tr>
<th>Configuration</th>
<th>Fast</th>
<th>Quiet/mobile</th>
<th>Deposition in the lung</th>
<th>Indication</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>● ● ● ● ●</td>
<td>● ● ●●</td>
<td>● ● ● ●</td>
<td>● ● ● ● ● ● ● ● ● ● ●●</td>
<td>Sinusitis Sinubronchitis</td>
<td>8</td>
</tr>
<tr>
<td>● ● ● ● ●</td>
<td>● ● ●●</td>
<td>● ● ● ●</td>
<td>● ● ● ● ● ● ● ● ● ● ●●</td>
<td>Bronchial asthma/Allergic asthma Acute and chronic bronchitis Atelectasis or bronchiectasis COPD</td>
<td>12</td>
</tr>
<tr>
<td>● ● ● ● ✔</td>
<td>● ● ●●</td>
<td>● ● ● ●</td>
<td>● ● ● ● ● ● ● ● ● ● ●●</td>
<td>Bronchial asthma/Allergic asthma Acute and chronic bronchitis Atelectasis or bronchiectasis COPD</td>
<td>15</td>
</tr>
<tr>
<td>● ● ● ● ✔</td>
<td>● ● ●●</td>
<td>● ● ● ●</td>
<td>● ● ● ● ● ● ● ● ● ● ●●</td>
<td>Bronchial asthma/Allergic asthma Acute and chronic bronchitis Atelectasis or bronchiectasis Pulmonary emphysema COPD</td>
<td>12</td>
</tr>
<tr>
<td>● ● ● ● ✔</td>
<td>● ● ●●</td>
<td>● ● ● ●</td>
<td>● ● ● ● ● ● ● ● ● ● ●●</td>
<td>Bronchial asthma/Allergic asthma Acute and chronic bronchitis Atelectasis or bronchiectasis COPD</td>
<td>14</td>
</tr>
<tr>
<td>● ● ● ● ✔</td>
<td>● ● ●●</td>
<td>● ● ● ●</td>
<td>● ● ● ● ● ● ● ● ● ● ●●</td>
<td>Bronchial asthma/Allergic asthma Acute and chronic bronchitis Atelectasis or bronchiectasis COPD</td>
<td>16</td>
</tr>
<tr>
<td>● ● ● ● ✔</td>
<td>● ● ●●</td>
<td>● ● ● ●</td>
<td>● ● ● ● ● ● ● ● ● ● ●●</td>
<td>COPD Allergic asthma Acute and chronic bronchitis</td>
<td>17</td>
</tr>
<tr>
<td>● ● ● ● ✔</td>
<td>● ● ●●</td>
<td>● ● ● ●</td>
<td>● ● ● ● ● ● ● ● ● ● ●●</td>
<td>COPD Allergic asthma Acute and chronic bronchitis</td>
<td>13</td>
</tr>
<tr>
<td>● ● ● ● ✔</td>
<td>● ● ●●</td>
<td>● ● ● ●</td>
<td>● ● ● ● ● ● ● ● ● ● ●●</td>
<td>Bronchial asthma/Allergic asthma Acute and chronic bronchitis COPD</td>
<td>18</td>
</tr>
<tr>
<td>● ● ● ● ✔</td>
<td>● ● ●●</td>
<td>● ● ● ●</td>
<td>● ● ● ● ● ● ● ● ● ● ●●</td>
<td>Cystic fibrosis Primary ciliary dyskinesia (PCD)</td>
<td>20</td>
</tr>
</tbody>
</table>

- ● The more dots the more pronounced the corresponding characteristic
- * Deposition in the throat
- ** Deposition in the nose and paranasal sinuses
Upper Airways

The upper airways are the entry portal to the airways. They consist of three areas, all of which are coated with mucus:

- Nose and the paranasal sinuses
- Throat
- Larynx

Typical pathologies of the upper airways include rhinitis, acute and chronic rhinosinusitis, pharyngitis, laryngitis or croup.

For effective inhalation therapy of the upper airways, a large droplet size is important. This enables the greatest possible quantity of the aerosol to be deposited there.

When it comes to the paranasal sinuses, the challenge is actually getting the aerosol there. The aerosol must pass through the tiny openings (ostia) that connect the nasal cavities to the paranasal sinuses. PARI SINUS with its pulsating aerosol has been developed specially to overcome this hurdle. (see page 8).

You can see our range of inhalation devices for the upper airways on the following pages.
When it comes to treating sinusitis, specialised nebuliser therapy is called for. Besides providing the known advantages of nebuliser therapy, PARI SINUS generates a pulsating aerosol. In contrast to standard aerosols, pulsating aerosols are able to pass through the ostia and deliver the medication where it is required, to the paranasal sinuses.

- Pulsating aerosol effectively delivers the medication and saline to the paranasal sinuses
- Impressive symptom relief and clear improvement in quality of life \(^1\),\(^2\)
- Suitable for patients with acute and chronic sinusitis as well as those with a concomitant disease of the lower airways

### Configuration:
- **PARI LC SPRINT SINUS Nebuliser**
- **PARI SINUS tube system**

**Item No.** 028G1000

### Technical data:
- **Alternating current**: 230 V~ 50 Hz
- **Pressure**: 1.5 bar
- **Weight**: 1.8 kg
- **Housing dimensions**: (W x H x D) 19.2 x 14.5 x 15 cm
- **Warranty**: 3 years

### Aerosol characteristics:
- **Total Output Rate**: 220 mg/min
- **MMD**: 3.2 μm
- **Mass fractions < 5 μm**: 71 %

*Measurement taken with the Malvern Spraytec at 23 °C and 50% relative humidity. Nebulised medium: 0.9% NaCl (5 ml). Jet Flow 4.6 l/min*

### Useful accessories

<table>
<thead>
<tr>
<th>Item</th>
<th>Item No.</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>PARI LC SPRINT SINUS Year Pack</td>
<td>023G2860</td>
<td>32</td>
</tr>
<tr>
<td>PARI LC SPRINT SINUS Nebuliser</td>
<td>023G2800</td>
<td>34</td>
</tr>
<tr>
<td>PARI LC SPRINT Nebuliser</td>
<td>023G1001</td>
<td>34</td>
</tr>
<tr>
<td>PARI Bag</td>
<td>085E1100</td>
<td>–</td>
</tr>
</tbody>
</table>


PARI MONTESOL Nasal Douche and Nasal Rinse

Effective and Gentle Nasal Rinsing

Often referred to as nasal douching or lavage, nasal rinsing has been around for a very long time. In fact, it has been an integral part of the yoga tradition for thousands of years and is commonly practiced by Yogis all over the world.

Usually performed with a nasal douche and saline solution, nasal rinsing is generally considered to be an effective and well tolerated method of:

- removing dirt and allergens
- removing excess mucous from the nose
- rehydrating dry noses
- removing heavy incrustation after surgery
- preventing & alleviating cold-like symptoms

Effectively treating chronic rhinosinusitis is often not possible with rinsing alone. However, it can support and help clear the way to the ostia, the small openings between the nasal cavity and paranasal sinuses. By doing so, it is an ideal preparation for the treatment of rhinosinusitis with PARI SINUS.

PARI MONTESOL Nasal Douche
- Can be boiled to sterilize thus ensuring utmost hygiene
- Compact and easy to hold
- Easy to use

PARI MONTESOL Nasal Rinse
- Concentrated saline enriched with soothing dexpanthenol
- Practical bottle that enables exact dosing

Ideal preparation for nebuliser treatment with PARI SINUS

PARI MONTESOL
Nasal Douche
Fill volume: 250 ml
Item No. 177G1010

PARI MONTESOL
Nasal Rinse
250 ml concentrated solution for 30 applications
Item No. 177G1020
Lower Airways

The lower airways consist of the windpipe and the lungs. The lung, in turn, can be divided into three main constituents:

- Bronchia (diameter 8–12 mm)
- Bronchioles (diameter 0.4 mm)
- Pulmonary alveoli (diameter 50–250 µm)

Typical diseases of the lower airways include cough, bronchitis, pneumonia, asthma, COPD and cystic fibrosis. Depending on the disease, the medication has to be effective in different areas of the lung.

Since the lung structures differ so widely in size, it is essential for the inhalation system to produce an aerosol with the right droplet size. Only then can it be ensured the medication is delivered to the part of the lung where it is needed.

We offer a range of inhalation devices for the lower airways. As a result, we can meet this requirement and can provide an individual inhalation therapy for your patients.

You can see our portfolio of inhalation devices for the lower airways on the following pages.
VELOX® and VELOX® Junior

Mobile, with modern vibrating membrane technology – for particularly fast and quiet inhalation

VELOX Junior® – Available in selected countries only

Configuration:
- Mouthpiece
- VELOXcare
- VELOX control unit
- VELOX membrane nebuliser
- Power adapter
- Case
- VELOX Junior:
  + SMARTMASK Baby

VELOX
Item No. 055G1001

VELOX Junior
Item No. 055G1101

Technical data:
- Power plug: 100–240V/50–60Hz
  (can be used with all mains voltages worldwide);
- Mains-free operation with batteries/rechargeable batteries
  The device does not have a charging function
- Weight: 110g (without batteries/rechargeable batteries)
- Housing dimensions: (W x H x D) 4.5 x 8.0 x 12.5 cm
- Warranty: Control unit 2 years

Aerosol characteristics:
- Total Output Rate: 497 mg/min
- MMD: 3.8μm
- Mass fractions < 5μm: 74%

Measurement using laser diffraction (Helos SympaTec) at 23 °C and 50% relative humidity.
Nebulised medium: 0.9% NaCl (2.5 ml). Inspiratory flow: 20 l/min.

The VELOX makes life easier by shortening inhalation times and creating more space for the more enjoyable things in life. Its ergonomic design and small number of components help to make operation easier, and the almost noiseless operation guarantees discreet, relaxed treatment. The optional battery operation ensures maximum flexibility, and its very compact size and weight make it the ideal travelling companion.

- Fast, efficient aerosol treatment: approx. 3 min for 2.5ml inhalation solution (salbutamol ready-to-use nebules)
- Ergonomic design
- Practically noiseless operation
- Maximum mobility

Useful accessories

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>VELOX Year Pack</td>
<td>055G3010</td>
</tr>
<tr>
<td>VELOX Junior Year Pack</td>
<td>055G3110</td>
</tr>
<tr>
<td>VELOXcare</td>
<td>055G6100</td>
</tr>
<tr>
<td>VELOX Cap</td>
<td>055G3500</td>
</tr>
<tr>
<td>VELOX Junior Cap</td>
<td>055G3510</td>
</tr>
<tr>
<td>VELOX AC power supply (EU)</td>
<td>055G7100</td>
</tr>
<tr>
<td>SMARTMASK Baby</td>
<td>055G4500</td>
</tr>
<tr>
<td>VELOX bag</td>
<td>055G8000</td>
</tr>
</tbody>
</table>
The PARI BOY mobile S is an effective, high-performance inhalation device that can provide treatment without relying on mains power. A great device for travelling. Its rechargeable battery can be recharged anywhere in the world, even via the 12 V car socket, with the accompanying universal charging power adapter.

• The mobile PARI BOY with rechargeable batteries for inhalation treatment any time, anywhere
• This lightweight among PARI inhalation devices offers efficient treatment with a powerful compressor
• Your reliable companion – at work, at leisure and on the road

Configuration:
• Mouthpiece
• Child mask soft
• PARI LC SPRINT Nebuliser
• 12 V vehicle electrical socket
• Convenient shoulder bag

Technical data:
- Alternating current: 100–240 V/50–60 Hz
- Pressure: 1.0 bar
- Weight: 520 g*
- Housing dimensions: (W x H x D) 8.9 x 4.5 x 14.8 cm*
- Warranty: compressor 2 years, rechargeable battery 6 months

Useful accessories

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>047G1000</td>
<td>34</td>
</tr>
<tr>
<td>023G1001</td>
<td></td>
</tr>
<tr>
<td>023G1011</td>
<td>32</td>
</tr>
<tr>
<td>047G2001</td>
<td></td>
</tr>
<tr>
<td>047G2101</td>
<td></td>
</tr>
<tr>
<td>047E3000</td>
<td></td>
</tr>
</tbody>
</table>

Aerosol characteristics:
- Total Output Rate: 440 mg/min
- MMD: 3.8 μm
- Mass fractions < 5 μm: 65 %

Measurement with Malvern Mastersizer X at 23 °C and 50% relative humidity.
Nebulised medium: 0.9% NaCl (5 ml).
Inspiratory flow 20 l/min.

* incl. rechargeable battery
The PARI BOY SX is the right device for patients who need particular assistance during treatment and who also might benefit from short inhalation session times. An extensive range of extra equipment makes the PARI BOY SX the versatile device for airway treatment.

- Optional intermittent nebulising for combined physiotherapy
- PARI LC SPRINT Nebuliser with extra nozzle attachment (red) for fine droplets
- With PIF Control – the integrated “training tool” helps patients to learn effective inhalation technique

### Configuration:
- Mouthpiece
- Child mask soft
- PARI LC SPRINT Nebuliser
- LC Interrupter
- Additional red nozzle attachment
- PIF Control

### Useful accessories

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>PARI BOY SX Year Pack</td>
<td>32</td>
</tr>
<tr>
<td>PARI LC Interrupter</td>
<td>30</td>
</tr>
<tr>
<td>PARI Filter/Valve Set</td>
<td>58</td>
</tr>
<tr>
<td>PARI PEP S System</td>
<td>46</td>
</tr>
<tr>
<td>PARI TRACHEO SET</td>
<td>30</td>
</tr>
<tr>
<td>PARI Bag</td>
<td>85E1100</td>
</tr>
</tbody>
</table>

### Technical data:
- Alternating current: 230 V ~ 50 Hz
- Pressure: 1.6 bar
- Weight: 1.7 kg
- Housing dimensions: (W x H x D) 19.2 x 14.5 x 15 cm
- Warranty: 4 years

### Aerosol characteristics:

#### Blue nozzle attachment:
- Total Output Rate: 600 mg/min
- MMD: 3.5 μm
- Mass fractions < 5 μm: 67 %

#### Red nozzle attachment
- Total Output Rate: 450 mg/min
- MMD: 2.2 μm
- Mass fractions < 5 μm: 89 %

*Measurement with Malvern Mastersizer X at 23 °C and 50% relative humidity. Nebulised medium: 0.9% NaCl (5 ml). Inspiratory flow 20 l/min.*
This is why the PARI JuniorBOY SX is a good choice for the inhalation treatment of babies from the first month of life and infants. It produces particularly fine droplets, and its equipment is specially adapted to the needs of small patients. This makes the PARI JuniorBOY SX ideal for providing the most efficient treatment possible for babies and infants as young as one month.

- Inhalation time: less than 7 min for 2.5 ml inhalation solution (salbutamol ready-to-use nebules)
- Equipment for babies as young as one month old: BABY mask, BABY bend (BABY mask and BABY bend must always be used together)
- PARI LC SPRINT Junior Nebuliser with fine droplets for the smaller airways of babies and infants

**Configuration:**
- Mouthpiece
- BABY mask size 2 / BABY bend
- PARI LC SPRINT Junior Nebuliser

**Technical data:**
- Alternating current: 230V – 50Hz
- Pressure: 1.6 bar
- Weight: 1.7 kg
- Housing dimensions: (W x H x D) 19.2 x 14.5 x 15 cm
- Warranty: 4 years

**Useful accessories**

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>023G1101</td>
<td>34</td>
</tr>
<tr>
<td>023G1110</td>
<td>32</td>
</tr>
<tr>
<td>041G0530</td>
<td>30</td>
</tr>
<tr>
<td>041G0500</td>
<td>58</td>
</tr>
<tr>
<td>022G1000</td>
<td>30</td>
</tr>
<tr>
<td>018G4000</td>
<td>46</td>
</tr>
<tr>
<td>085E1100</td>
<td>–</td>
</tr>
<tr>
<td>041G0700</td>
<td>29</td>
</tr>
<tr>
<td>041G0701</td>
<td>29</td>
</tr>
<tr>
<td>041G0702</td>
<td>29</td>
</tr>
<tr>
<td>041G0703</td>
<td>29</td>
</tr>
<tr>
<td>078G5000</td>
<td>30</td>
</tr>
</tbody>
</table>

**Aerosol characteristics:**

<table>
<thead>
<tr>
<th>Total Output Rate:</th>
<th>370 mg/min</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMD:</td>
<td>2.9 μm</td>
</tr>
<tr>
<td>Mass fractions &lt; 5 μm:</td>
<td>76 %</td>
</tr>
</tbody>
</table>

Measurement with Malvern Mastersizer X at 23 °C and 50% relative humidity. Nebulised medium: 0.9% NaCl (5 ml). Inspiratory flow: 12 l/min (children)
The PARI TurboBOY SX is ideally suited for all patients aged 4 and older who want fast, uncomplicated inhalation treatment. The PARI LC SPRINT Nebuliser ensures that a sufficient quantity of medication reaches the lungs even with short inhalation times. Easy operation makes inhalation easy, even for children.

- Inhalation time: less than 5 min for 2.5 ml inhalation solution (salbutamol ready-to-use nebulisers)
- PARI LC SPRINT Nebuliser for efficient lung deposition even with short inhalation times
- With masks for children and adults

**Configuration:**
- Mouthpiece
- Child mask soft
- Adult mask soft
- PARI LC SPRINT Nebuliser

**Item No.** 085G3201

**Technical data:**
- Alternating current: 230V – 50 Hz
- Pressure: 1.6 bar
- Weight: 1.7 kg
- Housing dimensions: (W x H x D) 19.2 x 14.5 x 15 cm
- Warranty: 4 years

**Aerosol characteristics:**
- Blue nozzle attachment:
  - Total Output Rate: 600 mg/min
  - MMD: 3.5 μm
  - Mass fractions < 5 μm: 67 %

Measurement with Malvern Mastersizer X at 23 °C and 50 % relative humidity. Nebulised medium: 0.9 % NaCl (5 ml). Inspiratory flow 20 l/min.

**Useful accessories**

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>PARI LC SPRINT Nebuliser</td>
<td>023G1001</td>
</tr>
<tr>
<td>PARI TurboBOY Year Pack S</td>
<td>023G1011</td>
</tr>
<tr>
<td>PARI LC Interrupter</td>
<td>022G1000</td>
</tr>
<tr>
<td>PARI Filter/Valve Set</td>
<td>041G0500</td>
</tr>
<tr>
<td>PARI PEP S System</td>
<td>018G4000</td>
</tr>
<tr>
<td>PARI TRACHEO SET</td>
<td>025G0007</td>
</tr>
<tr>
<td>PARI Bag</td>
<td>085E1100</td>
</tr>
<tr>
<td>PARI SMARTMASK</td>
<td>041G0730</td>
</tr>
</tbody>
</table>
Small, light and quiet the PARI mini comes complete with a durable, highly efficient LC SPRINT Nebuliser, mouthpiece, child mask, tubing and multi-voltage power adapter.

- Can be used from multi-voltage mains cable or from car cigarette lighter / 12 V connection cable
- Can be used for all drugs approved for inhalation

Useful accessories

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>047G2001</td>
<td>–</td>
</tr>
<tr>
<td>047E3000</td>
<td>–</td>
</tr>
<tr>
<td>023G1011</td>
<td>32</td>
</tr>
</tbody>
</table>

Aerosol characteristics:

<table>
<thead>
<tr>
<th>Total Output Rate</th>
<th>440 mg/min</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMD:</td>
<td>3.8 μm</td>
</tr>
<tr>
<td>Mass fractions</td>
<td>65 %</td>
</tr>
</tbody>
</table>

Measurement with Malvern Mastersizer X at 23 °C and 50% relative humidity. Nebulised medium: 0.9% NaCl (5 ml). Inspiratory flow 20 l/min.

Available in selected countries only
For patients who want to buy a cost-effective, robust device, the PARI COMPACT offers the customary reliability and PARI quality at an affordable price.

- High quality compressor from PARI
- With clinically proven PARI LC PLUS Nebuliser
- Easy to use and clean

Aerosol characteristics:
- Total Output Rate: 418 mg/min
- MMD: 3.9 μm
- Mass fractions < 5 μm: 64%

Measurement with Malvern Mastersizer X at 23°C and 50% relative humidity. Nebulised medium: 0.9% NaCl (5 ml). Inspiratory flow 20 l/min.

Useful accessories

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>PARI LC PLUS Nebuliser 022G8107</td>
<td>28</td>
</tr>
<tr>
<td>PARI PEP S System 018G4000</td>
<td>46</td>
</tr>
<tr>
<td>PARI PEP System I 018G6101</td>
<td>46</td>
</tr>
<tr>
<td>PARI PEP System II 018G6201</td>
<td>46</td>
</tr>
<tr>
<td>PARI LC Interrupter 022G1000</td>
<td>30</td>
</tr>
<tr>
<td>PARI Filter/Valve Set 041G0500</td>
<td>58</td>
</tr>
</tbody>
</table>
Special Treatment

For patients with chronic diseases of the airways, like cystic fibrosis, inhalation therapy is an indispensable part of their treatment. These patients typically perform several inhalation sessions a day, which takes up an enormous amount of their time.

With these patients in mind, we have developed an inhalation device that reduces inhalation times by as much as 65% depending on the medication: the eFlow® rapid. The base unit, the eBase® Controller, can be used with the eFlow® rapid nebuliser as well as certain drug-specific nebulisers.

You will find more information on the next two pages.

eFlow® rapid

Item No. 178G1005
see page 20
The eFlow® rapid nebuliser system is an innovative device for the treatment of airway diseases. During its development, particular care was taken to respond to patients’ needs for efficient, safe, and above all fast inhalation treatment.

- Short inhalation times
- Noiseless operation for discreet use
- Lightweight, small, portable – runs on mains power or batteries
- Easy to clean, disinfectable – offers highest standards of hygiene
- Display provides feedback during inhalation

### Aerosol characteristics:

- **Total Output Rate:** 610 mg/min
- **MMD:** 4.1 μm
- **Mass fractions < 5 μm:** 69%

Measurement using laser diffraction (Helos SympaTec) at 23°C and 50% relative humidity. Nebulised medium: 0.9% NaCl (4 ml). Inspiratory flow: 20 l/min. Can fluctuate depending on used drug and aerosol generator.

### Useful accessories

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Item No.</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>eFlow rapid nebuliser*</td>
<td></td>
<td>678G8222</td>
<td>–</td>
</tr>
<tr>
<td>eFlow rapid aerosol head*</td>
<td></td>
<td>678B8260</td>
<td>–</td>
</tr>
<tr>
<td>PARI Filter/Valve Set</td>
<td></td>
<td>041G0500</td>
<td>58</td>
</tr>
<tr>
<td>Filter pads, pack of 30</td>
<td></td>
<td>041B0522</td>
<td>–</td>
</tr>
<tr>
<td>Filter pads, pack of 100</td>
<td></td>
<td>041B0523</td>
<td>–</td>
</tr>
<tr>
<td>Filter pads, pack of 1000</td>
<td></td>
<td>041B0524</td>
<td>–</td>
</tr>
<tr>
<td>SMARTMASK Baby (babies weighing 2.5 kg or more)</td>
<td></td>
<td>078G5026</td>
<td>30</td>
</tr>
<tr>
<td>SMARTMASK Kids</td>
<td></td>
<td>078G5000</td>
<td>30</td>
</tr>
<tr>
<td>PARI SMARTMASK</td>
<td></td>
<td>041G0730</td>
<td>30</td>
</tr>
</tbody>
</table>

* The “eFlow rapid nebuliser handset” and the “eFlow rapid aerosol head” are compatible with both the eBase Controller (blue controller with display) and the turquoise control unit.
The eFlow® rapid nebuliser – for use of approved inhalation solutions such as:
- Colistimethate sodium
- Tobramycin
- Dornase alfa
- Hypertonic saline solution

Medication-specific nebulisers such as:
- Altera® for Cayston®
- Tolero® for Vantobra®
- Zirela® for Quinsair®

Up to 65 % shorter nebulising time with eFlow® rapid

![Graph showing nebulisation time comparison]

Technical data:
- Nebuliser principle: Perforated vibrating membrane; Vibration frequency: 117 kHz
- Operation with standard battery or rechargeable battery: At least 90 minutes of operation with fully charged rechargeable batteries
- Power adapter: 100 – 240 V, 50/60 Hz
- Nebuliser weight: ~ 55 g
- Total weight: ~ 300 g
- Min. fill volume: 2.0 ml
- Max. fill volume: 6.0 ml

2 Keller M, Brendel E, Luthielen A, Bruendl K, Mueller D, Tservistas M, Schierholz J, Denk O: Investigation of Colistin, 1 and 2 million I.U. Colistimethate Sodium (CMS) for aerosolization in the eFlow rapid and PARI LC Sprint nebuliser; 33rd ECFC, Valencia Spain; June 16th – 19th 2005
Nebulisers

The nebuliser generates the aerosol, and is therefore the central component of the entire inhalation system. To ensure the aerosol delivers the greatest possible effect where it is needed, an aerosol spectrum with the most suitable droplet size must be generated.

We offer two nebuliser families:

- The PARI LC SPRINT Family: with a range of nozzle attachments, suitable for both the upper and lower airways
- The PARI LC PLUS Nebuliser: proven nebuliser for delivering medication to the central area of the lung

Since inhalation speed affects medication deposition, we have built a breath-sensing feedback system – PIF Control – into certain PARI LC SPRINT nebulisers. Details of these are on page 27.

To guarantee a consistently effective inhalation therapy, we recommend replacing the nebuliser once a year. For a hassle-free replacement, a convenient year pack is available for every PARI inhalation device. Besides the nebuliser, it contains a connection tube and an air filter (see overview on page 31).

Our nebulisers can also be purchased separately.
Which nebuliser is right?
**Depends on the age of the patient and the deposition site**

<table>
<thead>
<tr>
<th></th>
<th>Baby</th>
<th>Child</th>
<th>Adult</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Paranasal sinuses</strong></td>
<td><strong>PARI LC SPRINT® SINUS Nebuliser</strong></td>
<td>Item No. 023G2800</td>
<td>see page 34</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Oropharyngeal region</strong></td>
<td><strong>PARI LC SPRINT® XLent Nebuliser</strong></td>
<td>Item No. 023G1801</td>
<td>Page 34</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Intermediate region</strong></td>
<td><strong>PARI LC SPRINT® Baby Nebuliser</strong></td>
<td>Item No. 023G1400 -1403</td>
<td>Page 34</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>PARI LC SPRINT® Junior Nebuliser</strong></td>
<td>Item No. 023G1101</td>
<td>Page 34</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>PARI LC PLUS® Nebuliser</strong></td>
<td>Item No. 022G8000</td>
<td>Page 28</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>PARI LC SPRINT® Tracheo</strong></td>
<td>Item No. 023G1080</td>
<td>Page 34</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Peripheral region</strong></td>
<td><strong>PARI LC SPRINT® STAR Nebuliser</strong></td>
<td>Item No. 023G1250</td>
<td>Page 34</td>
</tr>
</tbody>
</table>
PARI LC SPRINT® Family

Nebulisers with individual droplet size for each indication

The nebulisers of the PARI LC SPRINT family, equipped with various nozzle attachments to generate different droplets, offer solutions adapted to the individual needs of users according to indication and age group. The PARI LC SPRINT Nebulisers consist of a small number of individual components, so they can be assembled and disassembled quickly and easily. This also makes them easy to clean thoroughly. Their user friendly design is also intended to make inhalation treatment as comfortable as possible for the user while ensuring maximum efficiency.

- Different nozzle attachments produce different aerosol spectra
- Targeted deposition in the desired region of the airways
- Can be used by a wide age range of patients and a large variety of indications

Blue Nozzle attachment
- Droplets for efficient deposition in the central region of the lungs in older children and adults

Yellow Nozzle attachment
- Small droplets for small airways in babies and children

Red Nozzle attachment
- Smallest possible droplets for the peripheral region of the lungs or for babies one month old and older and for premature babies

Transparent Nozzle attachment
- XL droplets for deposition in the upper airways

Orange Nozzle attachment
- Pulsed droplets for efficient deposition in the paranasal sinuses

Lower airways

Upper airways
Slow inhalation aids effective deposition of active substances into the lung. In order to achieve the best possible breathing cycle for high lung deposition, PARI has developed a breath sensing feedback system – the PIF Control System (PIF = Peak Inspiratory Flow).

With this system, if the patient breathes in too quickly the inspiratory valve platelet reduces the size of the aperture in the nebuliser chamber. The patient perceives this as resistance – a sign they should exhale and then inhale more slowly during the next breath, so they do not feel the resistance anymore.

PARI PIF Control is available in selected PARI nebulisers.

PARI LC PLUS® Nebuliser

Tested and proven in many clinical trials

The PARI LC PLUS Nebuliser has proven its efficacy in many clinical trials, and for many years it has been acknowledged as the “GOLD Standard” for nebuliser therapy for diseases of the lower airways, such as asthma, COPD or bronchitis.

The small number of components makes it easy to use and clean thoroughly. Medication losses in the exhalation phase are minimised due to the integrated valve system.

- Proven nebuliser with valve system
- For deposition in the central region of the lungs

### Aerosol characteristics:

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Output Rate</td>
<td>418 mg/min</td>
</tr>
<tr>
<td>MMD</td>
<td>3.9 μm</td>
</tr>
<tr>
<td>Mass fractions</td>
<td>64%</td>
</tr>
</tbody>
</table>

Measurement with Malvern Mastersizer X at 23°C and 50% relative humidity. Nebulised medium: 0.9% NaCl (5 ml). Inspiratory flow 20 l/min.

### Useful accessories

<table>
<thead>
<tr>
<th>Item</th>
<th>Item No.</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>PARI PEP System I</td>
<td>018G6101</td>
<td>46</td>
</tr>
<tr>
<td>PARI PEP System II</td>
<td>018G6201</td>
<td>46</td>
</tr>
<tr>
<td>PARI Filter/Valve Set</td>
<td>041G0500</td>
<td>58</td>
</tr>
</tbody>
</table>
# Masks & Mouthpieces for Nebulisers

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>041G0700</td>
<td>PARI BABY mask size 0 with BABY bend for premature babies</td>
</tr>
<tr>
<td>041G0701</td>
<td>PARI BABY mask size 1 with BABY bend for approx. 0–1 year</td>
</tr>
<tr>
<td>041G0702</td>
<td>PARI BABY mask size 2 with BABY bend for approx. 1–3 years</td>
</tr>
<tr>
<td>041G0703</td>
<td>PARI BABY mask size 3 with BABY bend for approx. 3 years and older</td>
</tr>
<tr>
<td>041G0740</td>
<td>Adult mask soft sterilisable with mask stabiliser</td>
</tr>
<tr>
<td>041G0741</td>
<td>Child mask soft “Spiggy” sterilisable with mask stabiliser</td>
</tr>
<tr>
<td>012E1720</td>
<td>PARI Mouthpiece without expiratory valve for Filter/Valve Set and PARI PEP Systems I, II and S</td>
</tr>
<tr>
<td>022E3050</td>
<td>PARI universal mouthpiece for children and adults</td>
</tr>
<tr>
<td>041E0701</td>
<td>BABY bend is needed for BABY masks, BABY masks must always be used together with the BABY bend</td>
</tr>
</tbody>
</table>
## Masks & Mouthpieces for Nebulisers

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>055G4500</td>
<td><strong>PARI SMARTMASK® Baby</strong>&lt;br&gt;for VELOX/VELOX Junior,&lt;br&gt;up to about 2 – 3 years&lt;br&gt;for eFlow®<em>rapid</em> including bend,&lt;br&gt;for babies weighing 2.5 kg or more</td>
</tr>
<tr>
<td>078G5026</td>
<td></td>
</tr>
<tr>
<td>078G5000</td>
<td><strong>SMARTMASK® Kids</strong>&lt;br&gt;for children aged about 2 years and older</td>
</tr>
<tr>
<td>041G0730</td>
<td><strong>PARI SMARTMASK®</strong>&lt;br&gt;for adults including bend&lt;br&gt;(45 degree)</td>
</tr>
<tr>
<td>041G0749</td>
<td><strong>Mask stabiliser</strong>&lt;br&gt;(for PARI adult mask soft)&lt;br&gt;stabiliser for sterilisation in the autoclave,&lt;br&gt;pack of 5</td>
</tr>
<tr>
<td>041G0748</td>
<td><strong>Mask stabiliser</strong>&lt;br&gt;(for PARI child mask soft) stabiliser for sterilising&lt;br&gt;in the autoclave, pack of 5</td>
</tr>
<tr>
<td>041G0540</td>
<td><strong>PARI Application set</strong>&lt;br&gt;consisting of: Adult mask soft,&lt;br&gt;mouthpiece (without expiratory valve) and&lt;br&gt;nasal joining piece</td>
</tr>
<tr>
<td>023G2840</td>
<td><strong>PARI LC SPRINT® SINUS Application set</strong>&lt;br&gt;45-degree bend, nasal joining piece,&lt;br&gt;vibration connection, nasal plug</td>
</tr>
<tr>
<td>025G0007</td>
<td><strong>PARI TRACHEO SET</strong>&lt;br&gt;tracheostoma mask made from soft, latex-free&lt;br&gt;silicone, extension tube</td>
</tr>
<tr>
<td>022G1000</td>
<td><strong>PARI LC Interrupter</strong>&lt;br&gt;enables intermittent nebulising</td>
</tr>
<tr>
<td>041G0530</td>
<td><strong>Sputum trap</strong></td>
</tr>
</tbody>
</table>

*Note: *rapid* is a term used to describe the flow rate of the eFlow device.*
If used and cleaned frequently, like any other plastic part the nebuliser is also susceptible to a certain amount of wear. Over time, this can cause for example changes in the aerosol spectrum and impair therapeutic efficacy. In order to guarantee the long-term effectiveness of inhalation treatment, certain components of the nebuliser device should be replaced once a year. Recommend or prescribe the appropriate PARI Year Pack for your patients: These practical complete sets contain everything to ensure that the PARI nebuliser device will remain in top condition for a full year: nebuliser, connection tubing and air filter – each designed to fit any PARI nebuliser device perfectly. This way, the nebuliser device is well maintained and can provide outstanding service for a long time.

Which year pack goes with which PARI inhalation device?

<table>
<thead>
<tr>
<th>PARI Year Pack</th>
<th>PARI LC SINUS</th>
<th>VELOX</th>
<th>VELOX Junior</th>
<th>PARI BOY SX S</th>
<th>PARI JuniorBOY SX</th>
<th>PARI TurboBOY SX</th>
<th>PARI mini</th>
<th>PARI COMPACT*</th>
</tr>
</thead>
<tbody>
<tr>
<td>PARI LC SPRINT SINUS Year Pack</td>
<td>✔️</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VELOX Year Pack</td>
<td></td>
<td>✔️</td>
<td>✔️</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VELOX Junior Year Pack</td>
<td></td>
<td>✔️</td>
<td>✔️</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PARI BOY SX Year Pack</td>
<td>✔️</td>
<td></td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td></td>
</tr>
<tr>
<td>PARI JuniorBOY Year Pack S</td>
<td>✔️</td>
<td></td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td></td>
</tr>
<tr>
<td>PARI TurboBOY Year Pack S</td>
<td>✔️</td>
<td></td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td></td>
</tr>
<tr>
<td>PARI LC PLUS Nebuliser</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✔️</td>
</tr>
</tbody>
</table>

*Please note: There is no Year Pack for PARI COMPACT available, but the PARI LC PLUS Nebuliser which can be used with PARI COMPACT can be bought separately.*
## Year Packs

<table>
<thead>
<tr>
<th>Produktname</th>
<th>Configuration</th>
</tr>
</thead>
</table>
| **PARI LC SPRINT® SINUS Year Pack**  
Item No. 023G2860 | PARI LC SPRINT SINUS Nebuliser  
PARI SINUS Tube system  
Filter |
| **VELOX® Junior Year Pack**  
Item No. 055G3110 | VELOX Junior membrane nebuliser with mouthpiece |
| **PARI JuniorBOY® Year Pack S**  
Item No. 023G1111 | PARI LC SPRINT Junior Nebuliser  
(yellow nozzle attachment)  
Universal mouthpiece  
long connection tubing (f/m)*  
Filters for PARI BOY compressors |
| **VELOX® Year Pack**  
Item No. 055G3010 | VELOX membrane nebuliser with mouthpiece |
| **PARI BOY® SX Year Pack**  
Item No. 023G8511 | PARI LC SPRINT Nebuliser  
(blue nozzle attachment)  
Red nozzle attachment  
Universal mouthpiece  
Connection tubing (f/m)*  
Filters for PARI BOY compressors  
PIF Control |
| **PARI TurboBOY® Year Pack S**  
Item No. 023G1011 | PARI LC SPRINT Nebuliser  
(blue nozzle attachment)  
Universal mouthpiece  
Connection tubing (f/m)*  
Filters for PARI BOY compressors |

* female/male,
<table>
<thead>
<tr>
<th>PIF Control</th>
<th>Aerosol characteristics</th>
<th>Reorder set for the following devices</th>
<th>Combinable with</th>
</tr>
</thead>
<tbody>
<tr>
<td>in combination with the PARI SINUS compressor(^1):</td>
<td></td>
<td>PARI SINUS Item No. 028G1000 see page 8</td>
<td>–</td>
</tr>
<tr>
<td>TOR: 220 mg/min</td>
<td>MMD: 3.2 μm</td>
<td>Mass fractions &lt; 5 μm: 71%</td>
<td></td>
</tr>
<tr>
<td>in combination with the PARI JuniorBOY SX(^2):</td>
<td></td>
<td>PARI JuniorBOY SX Item No. 085G3301 see page 15</td>
<td>all PARI devices except PARI COMPACT</td>
</tr>
<tr>
<td>TOR: 370 mg/min</td>
<td>MMD: 2.9 μm</td>
<td>Mass fractions &lt; 5 μm: 76%</td>
<td></td>
</tr>
<tr>
<td>in combination with the PARI BOY SX(^3):</td>
<td></td>
<td>PARI BOY SX Item No. 085G3001 see page 14</td>
<td>all PARI devices except PARI COMPACT</td>
</tr>
<tr>
<td>Blue nozzle attachment: TOR: 600 mg/min</td>
<td>MMD: 3.5 μm</td>
<td>Mass fractions &lt; 5 μm: 67%</td>
<td></td>
</tr>
<tr>
<td>Red nozzle attachment: TOR: 450 mg/min</td>
<td>MMD: 2.2 μm</td>
<td>Mass fractions &lt; 5 μm: 89%</td>
<td></td>
</tr>
<tr>
<td>in combination with the PARI TurboBOY SX(^4):</td>
<td></td>
<td>PARI TurboBOY SX Item No. 085G3201 see page 16</td>
<td>all PARI devices except PARI COMPACT</td>
</tr>
<tr>
<td>TOR: 600 mg/min</td>
<td>MMD: 3.5 μm</td>
<td>Mass fractions &lt; 5 μm: 67%</td>
<td></td>
</tr>
</tbody>
</table>

\(^1\) Measurement with the Malvern Spraytec (calculated using the Mie model) at 23 °C and 50 % relative humidity. Nebulised medium: 0.9 % NaCl (5 ml). Jet Flow 4.6 l/min
\(^2\) Inspiratory flow 20 l/min, measurement with Malvern Mastersizer X (calculated according to the Fraunhofer model) at 23 °C and 50 % humidity.
\(^3\) Inspiratory flow 20 l/min, measurement with Malvern Mastersizer X (calculated according to the Fraunhofer model) at 23 °C and 50 % humidity. Nebulised medium: 0.9 % NaCl (5 ml). Inspiratory flow 12 l/min. Measured with child's inspiratory flow.
\(^4\) Inspiratory flow 20 l/min, measurement with Malvern Mastersizer X (calculated according to the Fraunhofer model) at 23 °C and 50 % humidity. Nebulised medium: 0.9 % NaCl (5 ml).
## Nebulisers

<table>
<thead>
<tr>
<th>Product name</th>
<th>Configuration</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PARI LC SPRINT® XLent Nebuliser</strong>&lt;br&gt;Item No. 023G1801&lt;br&gt;Transparent nozzle attachment&lt;br&gt;Tube system (f/f)**&lt;br&gt;Adapter for use with all PARI compressors</td>
<td></td>
</tr>
<tr>
<td><strong>PARI LC SPRINT® SINUS Nebuliser</strong>&lt;br&gt;Item No. 023G2800&lt;br&gt;Orange nozzle attachment&lt;br&gt;Bend (45 degree)&lt;br&gt;Vibration connection&lt;br&gt;Nasal joining piece&lt;br&gt;Nasal plug</td>
<td></td>
</tr>
<tr>
<td><strong>PARI LC SPRINT® Nebuliser</strong>&lt;br&gt;Item No. 023G1001&lt;br&gt;Blue nozzle attachment&lt;br&gt;Connection tubing (f/m)*&lt;br&gt;Universal mouthpiece</td>
<td></td>
</tr>
<tr>
<td><strong>PARI LC SPRINT® Tracheo</strong>&lt;br&gt;Item No. 023G1080&lt;br&gt;Blue nozzle attachment&lt;br&gt;PARI LC tracheoadapter&lt;br&gt;Long connection tubing (f/f)**&lt;br&gt;adapter</td>
<td></td>
</tr>
<tr>
<td><strong>PARI LC SPRINT® Junior Nebuliser</strong>&lt;br&gt;Item No. 023G1101&lt;br&gt;Yellow nozzle attachment&lt;br&gt;Long connection tubing (f/m)*&lt;br&gt;Universal mouthpiece</td>
<td></td>
</tr>
<tr>
<td><strong>PARI LC SPRINT® BABY Nebuliser</strong>&lt;br&gt;Item No. see Product variants below&lt;br&gt;Red nozzle attachment&lt;br&gt;BABY bend&lt;br&gt;Long connection tubing (f/m)*&lt;br&gt;BABY mask, PIF Control</td>
<td><strong>With mask size 0</strong>&lt;br&gt;Item No. 023G1400&lt;br&gt;for premature babies&lt;br&gt;<strong>With mask size 1</strong>&lt;br&gt;Item No. 023G1401&lt;br&gt;for age approx. 0–1 year&lt;br&gt;<strong>With mask size 2</strong>&lt;br&gt;Item No. 023G1402&lt;br&gt;for age approx. 1–3 years&lt;br&gt;<strong>With mask size 3</strong>&lt;br&gt;Item No. 023G1403&lt;br&gt;for approx. 3 years and older</td>
</tr>
<tr>
<td><strong>PARI LC SPRINT® STAR Nebuliser</strong>&lt;br&gt;Item No. 023G1250&lt;br&gt;Red nozzle attachment&lt;br&gt;incl. connection tubing (f/m)*&lt;br&gt;Universal mouthpiece&lt;br&gt;PIF Control</td>
<td></td>
</tr>
<tr>
<td><strong>PARI LC PLUS® Nebuliser</strong>&lt;br&gt;Item No. 022G8107&lt;br&gt;Universal mouthpiece&lt;br&gt;Connection tubing (Adapter) only with 022G8107&lt;br&gt;Filter + filter changer</td>
<td></td>
</tr>
</tbody>
</table>

* female/male, ** female/female
<table>
<thead>
<tr>
<th>PIF Control</th>
<th>Aerosol characteristics</th>
<th>Component of PARI devices</th>
<th>Combinable with following devices</th>
</tr>
</thead>
<tbody>
<tr>
<td>yes</td>
<td>in combination with the PARI XLet compressor ¹:</td>
<td>TOR: 875 mg/min MMD: 7.3 μm Mass fractions &lt; 5 μm: 65.4 % Mass fractions &gt; 7 μm: 53 %</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>in combination with the PARI SINUS compressor ²:</td>
<td>TOR: 220 mg/min MMD: 3.2 μm Mass fractions &lt; 5 μm: 71 %</td>
<td>PARI SINUS Item No. 028G1000 see page 8</td>
</tr>
<tr>
<td></td>
<td>in combination with the PARI TurboBOY SX/BOY SX ³:</td>
<td>TOR: 600 mg/min MMD: 3.5 μm Mass fractions &lt; 5 μm: 67 %</td>
<td>PARI TurboBOY SX Item No. 085G3201 see page 16 PARI BOY mobile S Item No. 047G1000 see page 14</td>
</tr>
<tr>
<td></td>
<td>in combination with the PARI CENTRAL (compressed air source 1.6 bar) ⁴:</td>
<td>TOR: 600 mg/min MMD: 3.5 μm Mass fractions &lt; 5 μm: 67 %</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>in combination with the PARI JuniorBOY SX ⁵:</td>
<td>TOR: 370 mg/min MMD: 2.9 μm Mass fractions &lt; 5 μm: 76 %</td>
<td>PARI JuniorBOY SX Item No. 085G3301 see page 15</td>
</tr>
<tr>
<td>yes</td>
<td>in combination with the PARI BOY SX ⁶:</td>
<td>TOR: 150 mg/min MMD: 2.5 μm Mass fractions &lt; 5 μm: 82 %</td>
<td>–</td>
</tr>
<tr>
<td>yes</td>
<td>in combination with the PARI BOY SX ⁷:</td>
<td>TOR: 450 mg/min MMD: 2.2 μm Mass fractions &lt; 5 μm: 89 %</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>in combination with the PARI COMPACT ⁸:</td>
<td>TOR: 418 mg/min MMD: 3.9 μm Mass fractions &lt; 5 μm: 64 %</td>
<td>PARI COMPACT Item No. 052G1002 see page 18</td>
</tr>
</tbody>
</table>

¹ Measurement with the Malvern Spraytec (calculated using the Mie model) at 23 °C and 50 % relative humidity. Nebulised medium: 0.9 % NaCl (6 ml). Inspiratory flow 20 l/min.
² Measurement with the Malvern Spraytec (calculated using the Mie model) at 23 °C and 50 % relative humidity. Nebulised medium: 0.9 % NaCl (5 ml). Jet flow 4.6 l/min
³ Inspiratory flow 20 l/min, measurement with Malvern Mastersizer X (calculated according to the Fraunhofer model) at 23 °C and 50 % humidity.
⁴ Measurement with Malvern Mastersizer X (calculated according to the Fraunhofer model) at 23 °C and 50 % humidity. Nebulised medium: 0.9 % NaCl (5 ml). Inspiratory flow 12 l/min. Measured at a child’s inspiratory flow rate.
⁵ Measurement with Malvern Mastersizer X (calculated according to the Fraunhofer model) at 23 °C and 50 % humidity. Nebulised medium: 0.9 % NaCl (5 ml). Inspiratory flow 6 l/min. Measured at a baby’s inspiratory flow rate. TOR: Total Output Rate / MMD: Median Mass Diameter
Holding Chamber

“The prescribing physician should ensure that spacers or holding chambers are used when prescribing steroid metered dose inhalers to prevent adverse effects in the oropharyngeal region and absorption via the gut.”¹

When a medication spray is used, the patient must inhale at exactly the same time as the spray is released. Such coordination is difficult, particularly for children and often for the elderly too. As a result, a considerable amount of the medication might be lost on the way to the lungs.

Even if coordination is mastered flawlessly, a holding chamber can help to transport a higher dose of medication to the lungs. This helps to reduce side effects from medication in the mouth and throat.

¹Laube B et al. 2011; Eur Respir J; 37(6):1308-31
The antistatic holding chamber – small, robust and effective.

Medication sprays or MDIs are often used to treat respiratory diseases such as asthma or COPD. The principle of a MDI is that you ‘press and inhale simultaneously’. For some patients like children and the elderly, getting this coordination right can be difficult. Poor coordination results in less medication reaching the lung and being deposited in the mouth and throat instead. The positive effect of the therapy can be reduced and undesirable side effects can result.

The antistatic holding chamber VORTEX helps to minimise these disadvantages. The MDI is triggered into the VORTEX. The patient can then inhale the medication from the holding chamber in their own time. The need to ‘press and inhale simultaneously’ is minimised and more medication reaches the lung, making the therapy as a whole safer and more effective.

- Antistatic metal chamber helps to ensure reliable dosage (1)
- Universal adapter for all popular metered dose inhalers (2)
- Visual control for monitoring spray release (3)
- Protective cap for extra hygiene protection
- Cyclone twist principle supports the transport of small aerosol droplets
- Can be disinfected at home
- Can be disinfected and sterilised in hospitals

The VORTEX® grows with you:

From infants to adults, the VORTEX can be adapted to the age group and needs of each individual patient with a range of face masks.

VORTEX®

Item No. 051G5000
Item No. 051G5001
### VORTEX®

#### Product variations

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>051G5000</td>
<td>VORTEX® 4 years and older</td>
</tr>
<tr>
<td>051G5001</td>
<td>VORTEX® with baby mask “Ladybug” 0–2 years</td>
</tr>
<tr>
<td>051G5040</td>
<td>VORTEX® with child mask “Frog” 2 years and older</td>
</tr>
<tr>
<td>051G5060</td>
<td>VORTEX® with adult mask</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>051G5020</td>
<td>Baby mask “Ladybug” 0–2 years</td>
</tr>
<tr>
<td>051G5041</td>
<td>Child mask “Frog” 2 years and older</td>
</tr>
<tr>
<td>051G5061</td>
<td>Adult mask soft with mask connector</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>041G0712</td>
<td>VORTEX® Mouthpiece Pack of 10</td>
</tr>
</tbody>
</table>

### Useful accessories

- Baby mask “Ladybug” 0–2 years
- Child mask “Frog” 2 years and older
- Adult mask soft with mask connector
- VORTEX® Mouthpiece Pack of 10
VORTEX® Tracheo

The antistatic holding chamber for tracheotomy patients

VORTEX Tracheo, the antistatic holding chamber with tracheo adapter, enables tracheotomised patients with a tracheal cannula to use metered dose inhalers – effective and convenient.

This application can be performed by patients without difficulty, simply by attaching the adapter to the mouthpiece and connecting it to the tracheal cannula. After the metered dose inhaler is started, the medication can be inhaled calmly and safely.

- Easy to use
- Fast, direct delivery via a 15 mm tracheal cannula
- Confident hygiene: Can be disinfected and sterilised at 134°C
Saline Solutions

Inhaling saline solution is one of the oldest methods for treating diseases of the airways. Whether it be in the form of a seaside climate, salt baths, climatic health resorts or modern inhalation devices: breathing healthy air and healing mist are proven methods for preventing, nursing, alleviating and treating affected airways.

Saline solutions for inhalation are divided into two groups:

- Isotonic saline solutions with a salt content of 0.9%
- Hypertonic saline solutions with a salt content of 1% and more

The effects of these two forms of saline solution differ as follows:

- Isotonic saline solutions moisturise the airways
- Hypertonic saline solutions promote secretion mobilisation, the more hypertonic the saline solution, the stronger the mobilisation effect

On the following pages you will find the saline solutions offered by PARI.
PARI NaCl Inhalation Solution
Isotonic (NaCl 0.9 %)

For cold infections or as a carrier solution

Inhalation with 0.9 % isotonic saline solution is effective for any age group in preventing, managing and treating diseases of the airways.

For natural rehydration and cleaning of the airways or as a carrier solution for medication, PARI NaCl Inhalation solution offers a wide range of applications and is important as a means of preventing diseases caused by dry airways. A favorable secondary treatment for colds and airway infections.

The PARI NaCl Inhalation solution is also especially effective in supporting the airways in problematic environmental conditions involving heavy dust, tobacco smoke, air-conditioned rooms or dry air.

- Moisturises the airways
- For infants, children and adults
- Sterile and preservative-free
MucoClear® 3% Inhalation Solution
Hypertonic (NaCl 3%)

For acute bronchiolitis, bronchitis and cystic fibrosis

MucoClear 3% loosens mucus gently and effectively in diseases of the airways with heavy secretion formation. It is recommended for cystic fibrosis and can be beneficial in the case of acute viral bronchiolitis and bronchitis. The three-percent hypertonic saline solution can also be used by infants and small children as well as by people with sensitive airways.

- Loosens mucus gently and effectively
- Can have beneficial effects on the course of the disease
- For infants, children and adults
- Sterile and preservative-free

A Cochrane Review¹ recommends hypertonic saline solution (3%–7%) for cystic fibrosis

- Sufficient evidence of safety
- Well-tolerated
- Fewer exacerbations – greater quality of life

The US clinical practice guidelines for bronchiolitis² recommend nebulised hypertonic saline (3%) to infants and children hospitalized for bronchiolitis.

A Cochrane Review³ recommends nebulised 3% saline may reduce the length of hospital stay among infants hospitalized with non-severe acute viral bronchiolitis.

¹ Wark P, McDonald VM., Cochrane Database Syst Rev 2009 (23): CD001506
² Ralston SL., Pediatrics 2014 (134):e1474
³ Zhang L., Mendoza-Sassi RA., Cochrane Database Syst Rev 2013 (7):CD006458
MucoClear® 6% Inhalation Solution
Hypertonic (NaCl 6%)

For cystic fibrosis and bronchiectasis

As a highly concentrated hypertonic saline solution, MucoClear 6% loosens mucus powerfully and eases clearance by coughing. Guidelines recommend hypertonic saline solution for cystic fibrosis and confirm its efficacy and safety. Additionally, it can be beneficial in the case of bronchiectasis.

- Loosens mucus effectively, making clearance by coughing easier
- For infants, children and adults
- Sterile and preservative-free

Cochrane Review¹ recommends hypertonic saline solution (3%–7%) for cystic fibrosis

- Sufficient evidence of safety
- Well-tolerated
- Fewer exacerbations – greater quality of life

The guidelines of the British Thoracic Society (BTS)⁴ recommend hypertonic saline solution for bronchiectasis as part of the physiotherapy programme

- Increased sputum volume
- Reduced viscosity of sputum
- Easier clearance by coughing

¹ Wark P, McDonald VM., Cochrane Database Syst Rev 2009 (23): CD001506
PEP Systems

With both acute and chronic diseases of the lower airways, secretion mobilisation and clearance by coughing can be very difficult, particularly with stubborn mucus. PEP therapy is an established, effective method for dislodging difficult to clear mucus from the bronchia. PEP stands for Positive Expiratory Pressure.

We offer the following PEP therapy options:

- **PARI PEP Systems**: Enable an effective combination of PEP and inhalation therapy. The resistance in the PEP Systems creates a back pressure when breathing out, preventing the airways from collapsing. This enables more medication to reach the peripheral airways during the breathing in phase. Clearance by coughing is easier, and more air from the lungs can be exhaled.

- **PARI O-PEP**: Respiratory therapy device for effective mucus clearance, used in addition to nebulisation; the vibration generated when exhaling into the O-PEP helps to dislodge stubborn mucus from the bronchial walls which can then be expectorated more easily.
**PARI PEP Systems**

*Time-saving combination of physiotherapy and inhalation therapy*

- **PARI PEP S System**
  - for all PARI nebulisers except PARI LC SPRINT BABY
  - Item No. 018G4000

- **PARI PEP System I**
  - compatible with PARI LC PLUS and PARI LL Nebulisers without pressure gauge
  - Item No. 018G6101

- Mobilises secretions and makes clearance by coughing easier
- Stabilisation of the airways with individually adjustable expiratory resistance: counteracts bronchial collapse
- Pressure gauge for adjusting expiratory resistance and monitoring during PEP treatment (PARI PEP System II)
- Can also be used without a nebuliser in physiotherapy

**Useful accessories**

<table>
<thead>
<tr>
<th>Description</th>
<th>Item No.</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pressure gauge 0–100 mbar, with pressure hose + 3 tubing adapters</td>
<td>018B1600</td>
<td>–</td>
</tr>
<tr>
<td>PARI PEP tubing adapter 3 units made from silicone, including 1 adapter for the pressure gauge</td>
<td>041G4580</td>
<td>–</td>
</tr>
</tbody>
</table>
PARI O-PEP

Efficiently loosens bronchial mucus and strengthens the airways

The long-term respiratory therapy device allowing effective, convenient, repetitive mobilization of bronchial mucus for patients of all age groups suffering from CF, COPD, bronchiectasis or (severe) Asthma.

With its oval mouthpiece, the PARI O-PEP offers a comfortable therapy during multiple therapy sessions per day.

- Oval mouthpiece for comfortable treatment sessions
- Alleviates unproductive coughing and shortness of breath
- Including small bag for hygienic storage and transport
- Dishwasher-safe and sterilisable up to 134 °C

PARI O-PEP

Item No. 018G5000
Diagnostics

The same also holds true for the treatment of airways: No therapy without well-founded diagnosis and long-term therapy monitoring. We at PARI want to create an even closer link between diagnosis and therapy by making new technologies and holistic solutions available. We offer products that are specifically designed to meet the requirements of the medical community as well as the needs of patients using the devices at home. The combination of medical applications and patient monitoring is a chance for a more comprehensive lung function diagnosis and therapy observation.

A good example of this is the SpiroSense. SpiroSense is an innovative spirometry system. It comprises a professional PC spirometer for use by healthcare professionals and a mobile patient spirometer for optional monitoring of lung function at home. Combining the two spirometers, measurements generated by healthcare professionals can be supplemented by measurements generated by the patient at home.

The home monitoring spirometer stores an entire flow-volume curve of each measurement. A traffic light feedback enables the patient to objectify his self-assessment. Via USB, the data stored in the home monitoring spirometer can be easily transferred to the healthcare professional, during the next visit to the doctor. SpiroSense will not only help the doctor with his diagnosis but also with setting up and optimising treatment plans.
**SpiroSense® Pro**

*The easy to use spirometer for healthcare professionals*

**PC Spirometer SpiroSense Pro**

<table>
<thead>
<tr>
<th>Item No.</th>
<th>120G1200</th>
</tr>
</thead>
</table>

**Technical data:**

<table>
<thead>
<tr>
<th>Values determined with PC spirometer Spiro SensePro</th>
<th>FVC, FEV₁ (MEF₂₅), FEV₂₁ (MEF₅₀), FEV₃₁ (MEF₇₅), FET, FEV₁₂₅, FEV₂₅, FEV₅₀, FEV₇₅, FEV₁₀₀, FEV₁₂₅/FVC, FEV₁₂₅/FRC, FEV₂₅/FRC, FEV₅₀/FRC, FEV₇₅/FRC, FIF, FIV, FIV₁/FIC, FIV₁/FVC, FEF₂₅-₇₅, FET, FIF, PEF, PIF, FV curve</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Reference values database</th>
<th>In accordance with the reference values of GLI¹ for children aged 3 years and older²</th>
</tr>
</thead>
</table>

| Size/weight | 160 x 83 x 45 mm/ < 200 g |

**Measurement Range/Measurement Accuracy:**

<table>
<thead>
<tr>
<th>Flow rate</th>
<th>10–840 l/min/ 5%/10 l/min</th>
</tr>
</thead>
</table>

| Volume | 0.1 – 9.9 l/ ±3%/0.05 l |

---

The SpiroSense Pro combines intuitive application with many convenience functions for a simple, reliable lung function measurement. Real-time display of flow-volume curves and a child-friendly software animation depict the entire respiratory cycle. This enables fast results and ensures high compliance.

- High measurement accuracy² enabled by new heated wire sensor technology
- Time and cost savings due to ease of handling and automatic calibration
- Software animation to promote and support correct respiration cycle
- Home monitoring option when using a mySpiroSense patient spirometer
- New international GLI³ reference values and ATS⁴/ERS⁵-conform measurements

---

¹ Dormeyer, C. et al. 2014, Allergologie, 37(4), 161
² Friedrich P., internal report by the Hochschule für angewandte Wissenschaften Kempten, Fakultät Elektrotechnik [Kempten University of Applied Sciences, Electronics and electrical engineering faculty], 2014
³ GLI = Global Lung Function Initiative
⁴ Quanjer PH et al. Eur Respir J. 2012; 40:1244-1343
⁵ ATS = American Thoracic Society
⁶ ERS = European Respiratory Society

---

The easy to use spirometer for healthcare professionals

Available in selected countries only
The battery-powered mySpiroSense patient spirometer with intuitive operation enables patients to measure their lung function at home. The device assists patients executing objective self-assessments and offers doctors a closely integrated, reliable monitoring option. The chronological data series of measurement values and the associated flow-volume curves are clearly displayed to facilitate detailed analysis.

- **Same measurement accuracy and technology as SpiroSense Pro**
- Electronic diary including complete flow-volume curves
- More values enabling more meaningful conclusions: FEV₁, FVC, PEF, FEV₁/FVC, FEV₀.₅, FEV₀.₇₅, FEF₂₅-₇₅
- A traffic light feedback enables the patient to objectify his self-assessment
- Small and mobile due to battery operation

### Technical data:

<table>
<thead>
<tr>
<th>Values determined with patient spirometer mySpiroSense</th>
<th>FEV₁, FVC, PEF, FEV₁/FVC, FEV₀.₅, FEV₀.₇₅, FEF₂₅-₇₅, FEF₂₅, FEF₇₅, FEFₒ₀₉₀, FEF₇₅ (MEF₂₅), FEFₒ₀₉₀ (MEF₇₅), FEF₇₅, FEF₀.₅, FEF₀.₇₅, FEF₂₅, FEF₇₅, FV curve</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size/weight</td>
<td>160 × 83 × 45 mm / &lt; 200 g</td>
</tr>
</tbody>
</table>

### Measurement Range/Measurement Accuracy:

<table>
<thead>
<tr>
<th>Flow rate</th>
<th>10–840 l/min / 5%/10 l/min</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volume</td>
<td>0.1–9.9 l / ±3%/0.05 l</td>
</tr>
</tbody>
</table>
The PARI PEAK FLOW METER is used to measure expiratory flow strength. With regular peak flow measurements, even small changes in bronchial obstruction can be detected. The timely administration of medicinal substances can bring bronchial obstructions under control, e.g. preventing a serious asthma attack. The peak flow log can be used for assessing whether the medications prescribed by the doctor are having the desired effect.

- Easy, simple therapy monitoring for doctor and patient
- With convenient traffic light function (red/amber/green) for individual monitoring of the patient’s general health
- Including 4-week log
Clinic Products

Inhalation devices and nebulisers are typically used by multiple patients in the hospital and the doctor’s surgery. This is why stricter hygiene regulations apply in these environments compared to using the devices at home. Hygienic preparation for re-use according to validated processes is essential after every use. The nebuliser must be cleaned, disinfected and sterilised.

To satisfy these requirements, our nebulisers and even the VORTEX spacer are disinfectable, sterilisable and autoclavable. Connection tubes must be cleaned mechanically and disinfected before they are used by another patient, or they must be replaced. A further advantage of our hospital portfolio are the pack sizes. These have been adjusted for the increased need in a hospital or doctor’s surgery.

You will find more information on the following pages.
PARI CENTRAL

Wall outlet fitting for the central gas supply in the hospital

PARI LC SPRINT Nebuliser
(blue nozzle attachment)
with universal mouthpiece and long connection tubing

Item No. 023G5800

Technical data:
Can be used with:
PARI CENTRAL AIR and O₂

Aerosol characteristics:
The aerosol characteristics of PARI nebulisers in combination with the CENTRAL, a compressed air source of 1.6 bar:

PARI LC SPRINT Junior*
Total Output Rate: 370 mg/min
MMD: 2.9 μm
Mass fractions < 5 μm: 76 %

PARI LC SPRINT STAR**
Total Output Rate: 450 mg/min
MMD: 2.2 μm
Mass fractions < 5 μm: 89 %

PARI LC SPRINT**
Total Output Rate: 600 mg/min
MMD: 3.5 μm
Mass fractions < 5 μm: 67 %

* Measurement with Malvern Mastersizer X at 23 °C and 50% relative humidity. Nebulised medium: 0.9% NaCl (5 ml).
** Inspiratory flow 12 l/min.

Technical data:
• In two variations: for connection to compressed air or to oxygen
• No time-consuming adjustments, simply connect it up
• Fixed operating flow – ideal for PARI nebulisers
• Maintenance-free

Product variants

<table>
<thead>
<tr>
<th>Product variants</th>
<th>Item No.</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>PARI CENTRAL AIR Wall outlet fitting for compressed air compliant with DIN 13260-2 incl. PARI CENTRAL connection tubing (if) ** + adapter, specifically for the compressed air system in a hospital</td>
<td>058G1100</td>
<td>–</td>
</tr>
<tr>
<td>PARI CENTRAL O₂ Wall outlet fitting for compressed air compliant with DIN 13260-2 incl. PARI CENTRAL connection tubing (if) ** + adapter, specifically for the compressed air system in a hospital</td>
<td>058G1200</td>
<td>–</td>
</tr>
<tr>
<td>CENTRAL AIR (compliant with SS 87524 30)</td>
<td>058G1110</td>
<td>–</td>
</tr>
<tr>
<td>CENTRAL O₂ (compliant with SS 87524 30)</td>
<td>058G1210</td>
<td>–</td>
</tr>
<tr>
<td>CENTRAL AIR (compliant with NF S 90-116)</td>
<td>058G1130</td>
<td>–</td>
</tr>
<tr>
<td>CENTRAL O₂ (compliant with NF S 90-116)</td>
<td>058G1230</td>
<td>–</td>
</tr>
</tbody>
</table>

* female/male, ** female/female
**PARI LC SPRINT® CENTRAL**

Nebuliser specifically for use with the PARI CENTRAL in hospitals

- Powerful continuous nebuliser (blue nozzle attachment) for efficient deposition in the central region of the lungs (for ages 4 and older)
- A small number of single parts means that it can be ready for use very quickly
- Easy assembly
- Convenient medication fill level display

**Technical data:**

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Useful accessories</th>
</tr>
</thead>
<tbody>
<tr>
<td>023G5800</td>
<td>PARI LC SPRINT Nebuliser (blue nozzle attachment) with universal mouthpiece and long connection tubing</td>
</tr>
</tbody>
</table>

**Aerosol characteristics:**

<table>
<thead>
<tr>
<th>Total Output Rate</th>
<th>600 mg/min</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMD</td>
<td>3.5 μm</td>
</tr>
<tr>
<td>Mass fractions &gt; 5 μm</td>
<td>67 %</td>
</tr>
</tbody>
</table>

**Measurement taken with Malvern Spraytec at 23 °C and 50% relative humidity. Nebulised medium: 0.9% NaCl (6 ml). Inspiratory flow 20 l/min.**

**Useful accessories**

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>041G4550</td>
<td>57</td>
</tr>
<tr>
<td>041G0747</td>
<td>57</td>
</tr>
<tr>
<td>041G0749</td>
<td>57</td>
</tr>
<tr>
<td>041G0746</td>
<td>57</td>
</tr>
<tr>
<td>041G0748</td>
<td>57</td>
</tr>
<tr>
<td>058G2001</td>
<td>57</td>
</tr>
</tbody>
</table>
Medication sprays or MDIs are often used to treat respiratory diseases such as asthma or COPD. The principle of a MDI is that you ‘press and inhale simultaneously’. For some patients like children and the elderly, getting this coordination right can be difficult. Poor coordination results in less medication reaching the lung and being deposited in the mouth and throat instead. The positive effect of the therapy can be reduced and undesirable side effects can result.

The antistatic holding chamber VORTEX helps to minimise these disadvantages. The MDI is triggered into the VORTEX. The patient can then inhale the medication from the holding chamber in their own time. The need to ‘press and inhale simultaneously’ is minimised and more medication reaches the lung, making the therapy as a whole safer and more effective.

- Antistatic metal chamber helps to ensure reliable dosage
- Universal adapter for all popular metered dose inhalers
- Visual control for monitoring spray release
- Protective cap for extra hygiene protection
- Cyclone twist principle supports the transport of small aerosol droplets
- Confident hygiene: Can be disinfected and sterilised at 134°C

<table>
<thead>
<tr>
<th>Useful accessories</th>
<th>Item No.</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>VORTEX mouthpiece with valve (10 units)</td>
<td>051G5101</td>
<td>39</td>
</tr>
<tr>
<td>PARI BABY mask size 0 with BABY bend for premature babies</td>
<td>041G0700</td>
<td>29</td>
</tr>
<tr>
<td>PARI BABY mask size 1 with BABY bend for approx. 0–1 year</td>
<td>041G0701</td>
<td>29</td>
</tr>
<tr>
<td>PARI BABY mask size 2 with BABY bend for approx. 1–3 years</td>
<td>041G0702</td>
<td>29</td>
</tr>
<tr>
<td>PARI BABY mask size 3 with BABY bend for approx. 3 years and older</td>
<td>041G0703</td>
<td>29</td>
</tr>
<tr>
<td>PARI SMARTMASK for adults, including 45-degree bend</td>
<td>041G0730</td>
<td>30</td>
</tr>
<tr>
<td>PARI SMARTMASK Kids for age approx. 2 years and older</td>
<td>078G5000</td>
<td>30</td>
</tr>
</tbody>
</table>
## Nebulisers and Accessories

<table>
<thead>
<tr>
<th>PARI LC SPRINT® – hospital pack (10 units)</th>
<th>Item No. 023G6010</th>
</tr>
</thead>
<tbody>
<tr>
<td>medication nebuliser with valve system (blue nozzle attachment) and universal mouthpiece, without connection tubing</td>
<td>more on page 34/35</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PARI LC SPRINT® Junior hospital pack (5 units)</th>
<th>Item No. 023G6011</th>
</tr>
</thead>
<tbody>
<tr>
<td>medication nebuliser with valve system for children (yellow nozzle attachment) and universal mouthpiece, without connection tubing</td>
<td>more on page 34/35</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PARI LC SPRINT® STAR – hospital pack (5 units)</th>
<th>Item No. 023G6012</th>
</tr>
</thead>
<tbody>
<tr>
<td>fine droplet nebuliser with PIF Control and valve system (red nozzle attachment), universal mouthpiece, without connection tubing</td>
<td>more on page 34/35</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PARI LC SPRINT® Tracheo</th>
<th>Item No. 023G1080</th>
</tr>
</thead>
<tbody>
<tr>
<td>medication nebuliser with valve system (blue nozzle attachment), LC Tracheo Adapter and long connection tubing (f/f)**</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PARI Adult mask soft with mask stabiliser – hospital pack</th>
<th>Item No. 041G0747</th>
</tr>
</thead>
<tbody>
<tr>
<td>PARI Adult mask soft and PARI Mask stabiliser, pack of 5 each</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PARI Mask stabiliser (for PARI Adult mask soft) stabiliser for sterilisation in the autoclave, pack of 5</th>
<th>Item No. 041G0749</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>PARI Child mask soft with mask stabiliser – hospital pack</th>
<th>Item No. 041G0746</th>
</tr>
</thead>
<tbody>
<tr>
<td>PARI Child mask soft and PARI Mask stabiliser, pack of 5 each</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PARI Mask stabiliser (for PARI Child mask soft) stabiliser for sterilisation in the autoclave, pack of 5</th>
<th>Item No. 041G0748</th>
</tr>
</thead>
</table>

** female/female
PARI Filter/Valve Set

For pure air

- Prevents inhaled medications from being exhaled into the ambient air
- Protects individuals who are indirectly concerned with the inhalation, e.g., family members and nursing staff, from breathing in the medication aerosol
- This is particularly important for inhaled substances such as antibiotics, steroids, antimycotics
- The integrated valve system ensures efficient inhalation treatment
- The filter pad is very easy to replace

<table>
<thead>
<tr>
<th>Useful accessories</th>
<th>Item No.</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>PARI Filter Pad, Pack of 30</td>
<td>041B0522</td>
<td>–</td>
</tr>
<tr>
<td>PARI Filter Pad, Pack of 100</td>
<td>041B0523</td>
<td>–</td>
</tr>
<tr>
<td>PARI Filter Pad, Pack of 1000</td>
<td>041B0524</td>
<td>–</td>
</tr>
</tbody>
</table>
You can find the addresses of our service partners and distributors on
http://www.pari.com/partners

**France**

**PARI PulmoMed S.A.R.L.**

11 avenue de l’Île Saint-Martin  
Z.A. du Petit Nanterre  
92737 Nanterre Cedex  
Tel.: +33 1 56 83 85 00  
Fax: +33 1 56 83 85 09  
clients@pari-pulmomed.fr  
www.pari.com

**United Kingdom**

**PARI MEDICAL Ltd.**

The Old Sorting Office  
Rosemount Avenue  
West Byfleet  
Surrey KT14 6LB, UK  
Tel: +44 (0)1932 341122  
Fax: +44 (0)1932 341134  
infouk@pari.eu  
www.pari.com

**Russia**

**PARI synergy in medicine LLC.**

Novocheremushkinskaya str. 49  
Office 17-18  
117418 Moscow  
Tel: +7 495 981 88 60  
Fax: +7 495 981 88 60  
pari-synergy@mail.ru  
www.pari.com.ru
The stated objective of Research and Development at PARI and PARI Pharma is to develop optimal complete solutions, i.e., medications and inhalation systems for defined clinical pictures and patient groups. In all our development efforts, our primary focus is always to serve the needs of patients, for whom inhalation treatment should be as simple, comfortable and efficient as possible. The benefits for patients may take the form of short inhalation times combined with economical use of medications, or simpler, more convenient application due to reduced frequency, for example. Many scientific publications attest to our unceasing efforts and endeavours to develop efficient systems:

Albasarah Y. Y. et al. 2010; J Pharm Pharmacol. 62(7):821
Amin R. et al. 2010 Thorax 65: 379
Arzhavina H. & Steckel H. 2010; Int J Pharm. 384(1-2):128
Bauer A. et al. 2009; Resp. Care. 2007:1
Bauer A. et al. 2009; Resp. Care. 54(10):1342
Berg E.B. & Picard R. J. 2009; Resp Care. 54(12):1671
Berlinski A. & Hayden J. B. Pediatr Pulmonol. 2010; 45(suppl 33):369
Berlinski A. Respir Care. 2014 Feb;59(2):216-22
Bilton D. et al. ERS conf. 2011, oral presentation 1925
Bilton D. et al. ECFC 2014 oral presentation WS7.3
Bilton D. et al. NACF 2014 P284
Boerner G. et al. ECFC 2014 P285
Bosco A. P. et al. 2004; CHEST. 6(4_MeetingAbstracts):816S
Bourdet D. et al. ERS 2014 P1892
Brand P. et al. 2003; Eur Respir J. 22(2):263
Clavel A. et al. 2007; J Cyst Fibros. 6(2):137
Coates A. L. et al. 2009; NACF poster
Colombier L. et al. 2004; Rev Mal Respir Abstract 70
Corcoran T. E. et al. 2006; Am J Transplant. 6(11):2765
Costantini D. et al. ERS conf. 2003
Davidson H. et al. 2006; Am J Respir Cell Mol Biol. 2006; 35(1):72
Davies J. et al. 2010; Am J Respir Crit Care Med. 181:A2193
de Boer A. H. et al. 2003; Int J Pharm. 268(1-2):59
Dellon E. P. et al. 2008; Pediatr Pulmonol. 43:1100
Dennis J. H. et al. 2002; J Cyst Fibros. 1(suppl 2):209
Devadason S. G. et al. ATS conf. 2003 oral pres.
Dimakou K. et al. ERS 2014 P244
Evans R. et al. DL ELondon. 2005; XVIDec 7–9:121
Fischer R. et al. 2006; ERS conf.; P2932
Fischer R. et al. J Cyst Fibr. 2007; 6(suppl 1):541
Geller D. E. et al. 2003; Chest. 123(1)
Geppe N. et al. ERS conf. 2008: 3985
Geppe N. et al. ERS conf. 2009: 4029
Gerber A. et. a. ECFC 2014 P300
Gornova Y. et al. ERS 2014 P243
Griese M. et al. 2004; Am J Respir Crit Care Med. 2004;169(7):822
Grinnert D. et al. 2003; J Aerosol Med. 16(2):121
Hallstrand T. S. et al. 2004; Eur Respir J. 24(3):367
Hanga D. et al. 2012; 83rd Ann. Meeting of the German Soc. of
Otorhinolaryng., Head and Neck Surgery
Hardaker L. E. et al. 2006; J Cyst Fibros. 5(suppl.1):541
Häußermann S. et a. 2005; Eur Respir J. 26(suppl 49):s729s
Hofmann T. et al. 2012; Curr Pharm Des. 18(5):683
Hubert D. et al. J Cyst Fibros. 2007; 6(suppl 1):12
Hullard-Pulstinger A. et al. Onkologie 2011;34:254
Jaafar-Maalej et al. 2010;J Liposome Res. 20(3):228-43
Junge Hülsing B. P. Abstracts HNO Inform. 2004
Kesser K. C. & Geller D. E. 2010; J Cyst Fibros. 9(suppl 1):61
Kofman C. D. et al. 2010; J Cyst Fibros. 9(suppl 1):62
Laube B. L. et al. 2011; BMC Pulm Med. 11:45
We’re here to help!

PARI’s Export Service Coordinators in Starnberg, Germany, offer an expert service and are dedicated to assisting you personally with any questions regarding:

- Use and handling of PARI inhalation devices
- Cleaning and servicing
- Accessories and spare parts
- Product availability and lead-times
- Order processing and logistics

If you need information about a repair or service for a PARI device, please visit [www.pari.com/partners](http://www.pari.com/partners) to find a distributor and/or service partner in your country.

We look forward to hearing from you.
Simply give us a call or send an email to [export@pari.de](mailto:export@pari.de) for a prompt response.