

# OLFAKTOMAT-955

QUMA

For statistical AND dynamical olfactory analysis

Operating mode I

A unit for purposing intense odour in compliance to the principle of DYNAMICAL gas dilution. Based on testing methods according to DIN 10955.

Due to extending the minimum durability of food and semi luxury food, the sensory demands of wrappings have increased. Packing of foods and semi luxury foods should have neutral smells. Demands like these cannot be solved with analytical methods. Analytics normally is only aid for destined substance groups (for example residual solvents).

Our nose is the optimal analytical apparatus for all odorants. At the same time our nose and brain can mediate an emotional effect. For this kind of sensory examination QUMA has developed the Olfaktomat®-955.

According to **DIN 10955** 600 cm<sup>2</sup> of packing material must be put into a 1 Litre glass. After 20 up to 24 hours at a temperature of 23°C (± 2C°) the samples can be tested by a team for sensory technology. The intensity will be scaled from 0 – 4 rated:

0	no perceptible odour
0,5	
1,0	just perceptible odour
1,5	
2,0	week odour
2,5	
3,0	Obvious odour
3,5	
4,0	Heavy odour



From intensity  $\geq 2$  the odour must be described qualitative.

With the second testing phase the intensity can be defined more exactly. At this stage the Olfaktomat®- 955 gets into action.

A volume flow of nitrogen or purged air is led through the glass. After this the gas flows through a volume meter with volume display. The gas flow can be adjusted from 0-4 l/min and digitally readed. The Olfaktomat®-955 can be calibrated (optional).

During dilution odour is being smelled at the funnel.

The odour testing has ended when the test person no longer smells anything

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The volume of dilution is a measure for intensity of odour und can be read directly at the Olfaktomat® -955. With routines, that is when using known samples, the sample quantity can be chosen, so that within short time the dilution of „Zero“ odour is achieved. A fast and effective evaluation of the samples is even more possible.

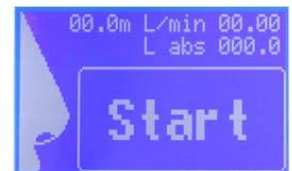
If insecurity occurs, measuring can be continued.

Due to this method, descriptions of the odours intensity can be defined exactly. (The volume display of the total gas flow in norm litres is important for this (L abs.)).

Hereby the intensity of the odour can be indicated in scales (0-4) for example.

After flushing the glass without any odours left, it is interesting to make an additional test:

When the air flushed sample is left in the glass for another 20 up to 24 hours, the testing Person can reveal, if the odour has again arisen or on the other hand the odour is even.



Display of Olfaktomat® -955  
Changes depend on function

## Additional Analytics

After finishing the odour testing with gas dilution, the residual solvents of the packing material can be evaluated. This value can be compared with the original residual solvent. You can learn from the differences the volatile of each substance.

## Measure hedonic with the Olfaktomat®-955

If the procedure of measuring with the Olfaktomat®-955 is intensely and exactly reproducible, we can evaluate the samples also hedonistically. Usually we use a scale from:

-4, -3,5, -3, -2,5, -2, -1,5, -1, -0,5, 0 +0,5, +1, +1,5, +2, +2,5, +3, +3,5, +4
extremely unpleasant <span style="float: right;">extremely pleasant</span>

Scale by Peryam,D.R.;Pilgrim,F.J.

## Specification of the Olfaktomat®- 955:

- Gas connection 1/8" swagelok for nitrogen or purged air > 3 bar; < 8 bar; < 4 l/min)
- Measurement of the gas flow with mass flow meter for exact determination of the dilution
- Calibratable with certificate to < ±1% fs (optional)
- Magnetic valve for start/stop of the gas flow
- Display of:           flow in norm litres/Minute       [xx.xx   L/min]  
                              flow absolute in norm litres     [xxx.x   L abs]  
                              measure time in minutes           [ xx.x   m]
- Power: 230 V / 50 Hz / 30VA

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## Operating mode II

A unit for purposing intense odour in compliance to the principle of STATISTICAL gas dilution.

Appropriate for purposing the odour threshold of gases and gas composites. Normally the sample is put into a 120 ml HSS bottle and than be smelled.

After each dilution the concentration is halved. Example: If a testing person smells a sample for 6 dilution levels the odour threshold is:

$$\text{Odour threshold} = \frac{\text{Initial concentration}}{2^6 (= 32)}$$

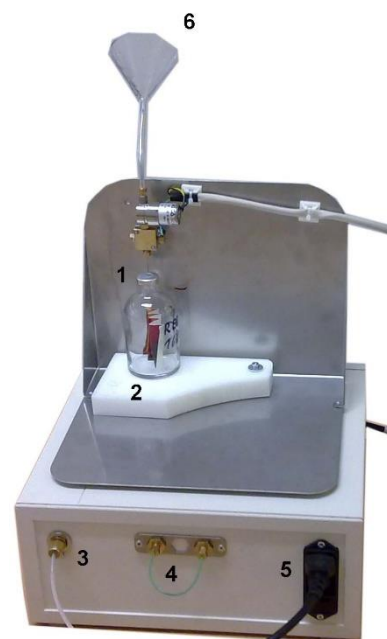
As smelling of the detailed dilution levels executes fast, an evaluation of samples and testing persons is practicable easy and fast.



space saving installation possible: odour unit onto electrical unit

Explanation of the components:

- 1 Sample bottle 120 ml HSS vial closed gastight
- 2 Movable adapter so that the bottle can stand higher; when the bottle has lanced through the needle.
- 3 Gas input of the unit
- 4 Exchangeable restrictor to realize big flow
- 5 Flow Input / main switch
- 6 Funnel easy to change (for cleaning)



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## Order data

### Set consisting of:

- 1 Olfaktomat®- 955 with currency and gas lines (1/8" Swagelok connection)
- 6 piece of 1Litre „WECK®“ glass (tulip form)
- 6 unscented caps with 2 holes, 12 clips for „Weck“ glasses und 12 glass plugs
- 2 glass funnels with adapter

Item number Q606.955

### Calibration with certificate

Precision <  $\pm 1\%$  fs

Item number Q606.955-K

### Set 6 caps for 1Litre „WECK®“ glasses (tulip form) with 12 clips and 12 glass plugs

Item number Q606.956



### Set for statistical dilution

- 1 crimping tool
- 100 pcs. of Septa unscented
- 100 HSS vials (empty) 120 ml

Item number Q606.956 SV



By the way, QUMA offers:

### Service – Worldwide

- A wide array of services
- Gas lines, gas mixture preparation, analytical units and computer application.
- All from one source!

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