

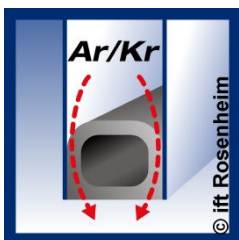
# Test Report



Number	16-000105-PR01 (short version)
Owner (Client)	Sparklike Oy. Hermannin rantatie 12 A 21 00580 Helsinki Finland
Product	Test equipment for measurement of gas concentration in double and triple glazing
Designation	<b>SPARKLIKE Gas Glass Laser</b>
Details	Measurement of gas concentration without determination of type of gas
Special features	
Order	Comparison tests of a new test equipment for measurement of gas concentration in triple insulating glass to a normative reference procedure
Contents	The test report comprises 3 pages in total.
Note	This test report is a short version of the report 16-000105-PR01 (PB-H01-09-en-01) The "Guidance Sheet for the Use of ift Test Documents" applies.

## Result:

The comparison test of the Sparklike Laser to the gas chromatography showed as a mean value a deviation of approx. -1 % (absolute gas concentration). The mean standard deviation during 88 values was 2 %.



Ve-PB0-4977-dev/01.12.2017

## 1 Procedure

### 1.1 Definition of task by the client

ift Rosenheim was commissioned by Sparklike Oy, 00580 Helsinki, to make comparison tests on the testing device Sparklike Laser to gas concentration made by gas chromatography on triple insulating glass units with regard to different measurement possibilities.

### 1.2 Product description of insulating glasses for measurements

**Table 1** Types of glass, examined during the test series

No.	Type of glass, product name	Construction and position of coatings (:)	Type of coating
1	ISO CL 3fach	6 – 16 – 4 – 16 - 4	None/none
2	iplus top CL 3-2 3fach	:6 - 16 – :4 – 16 - :4	CLV clearsight (Pos.1) iplus top 1.1 (Pos. 3 and 5)
3	iplus top CL-3 3fach	6: - 16 – 4 – 16 - :4	iplus top 1.1/ iplus top 1.1
4	ipazol platin 25/17	6: - 16 – 4 – 16 - :4	ipazol platin 25/17 / iplus top 1.1
5	ipazol platin 25/17	8: - 16 – 4 – 16 - :4	ipazol platin 25/17 / iplus top 1.1
6	ipazol sky 30/17	6: - 16 – 4 – 16 - :4	ipazol sky 30/17 / iplus top 1.1
7	BI-Therm 3fach	6 – 16 – 4 – 16 - 4	Tin side symmetric (pos. 1, 3, 5)
8	BI-Therm 3fach	6 – 16 – 4 – 16 - 4	Tin side asymmetric (pos. 1, 4, 5)
9	BI-Therm, Weissglas	6 – 16 – 4 – 16 - :4	None / ClimaGuard Premium 2
10	BI-Therm, SNX 60	6: – 16 – 4 – 16 - :4	SunGuard SNX60 / ClimaGuard Premium 2
11	BI-Therm, SNX 50	6: – 16 – 4 – 16 - :4	SunGuard SNX50 / ClimaGuard Premium 2
12	BI-Therm, Silverstar Super Select 35/14	6: – 16 – 4 – 16 - :4	Silverstar Super Select 35/14 / ClimaGuard Premium 2
13	BI-Therm, K-glass	6: – 16 – 4 – 16 - :4	K-Glass / ClimaGuard Premium 2

### 1.3 Description of the measurement devices

All measurements were made in comparison test between Sparklike Gas Glass Laser and gas chromatography.

For gas chromatography an equipment was used that fulfils the requirements of EN 1279-3 regarding measurement of gas concentration in triple insulating glass units (IGU) in both gaps.

Type	Gas Chromatograph Shimadzu GC-14B
Device number	022695
Gas tight syringe	

### 1.4 Basis referring to method/s

EN 1279-3:2002-11 Glass in building - Insulating glass units - Part 3: Long term test method and requirements for gas leakage rate and for gas concentration tolerances, chapter 5.2.3 (gas analysis equipment) and 5.4.4 (analysis of gas)

No. 16-000105-PR01 (short version) dated 24 April 2018  
Client Sparklike Oy., 00580 Helsinki (Finland)

Comparison tests of a new test equipment for measurement of gas concentration in triple insulating glass to a normative reference procedure



Only the chapters 5.3.2 and 5.4.4 of the cited standard were followed regarding the gas concentration test as a normative reference.

## 1.5 Description of procedure

As sun protection low emissivity coatings are selective in light transmission and have a very low transmission in infrared regions this might have an influence on the signal of the laser device. During this examination it should be determined what types of coatings are suitable for measurements with the Sparklike laser device.

The tests are made in comparison to measurements of gas concentration in both gaps of the IGU by gas chromatography as described in the standard EN 1279-3.

## 2 Results

Results from all measurements as a comparison between gas chromatography and results of Sparklike Gas Glass Laser device are:

- Regarding the selectivity of coatings used on position 2 of triple IGU the information of the producer of Sparklike Laser must be followed correctly to avoid deviating results.
- A small influence of low emissivity coatings and variation of the glass thickness could be recognized. The results are within the measurement uncertainty of the system
- Filling rates from 85 % to 100 % Argon can be detected in both gaps within the allowed uncertainty
- No deviations could be stated when measurement was made through uncoated floatglass, low iron glass or from the tin side of floatglass.
- Asymmetric constructions did not influence the result (laminated glass was not checked!) as less as vertical or horizontal orientation of the IGU during measurement.

The comparison test of the Sparklike Laser to the gas chromatography showed as a mean value a deviation of approx. -1 % (absolute gas concentration). The mean standard deviation during 88 values was 2 %.

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**Test Report**

No. 16-000105-PR01 (PB-H01-09-en-01) dated

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