

# Test report

Sunniva, 58 % new wool, 25 % viscose, 8 % linen, 5 % polyamide, 4 % polyester - Duraflam treatment



**Name of client:** Kvadrat A/S  
**File no.:** PFA10879L  
**Date:** 2016-08-02  
**Pages:** 4                      **Encl.:** 0  
**Ref:** JAG / MPA



**DBI**

## Client information

Client: Kvadrat A/S

Address: Lundbergsvej 10  
DK-8400 Ebeltoft  
Denmark

The results relate only to the items tested. The test report should only be reproduced in extenso - in extracts only with a written agreement with this institute.

**DBI****1. Product**

Textile.

**Trade name**

Sunniva, 58 % new wool, 25 % viscose, 8 % linen, 5 % polyamide, 4 % polyester - Duraflam treatment.

**2. Description**

Stated by the client.

Design:	Raf Simons and Fanny Aronsen
Composition:	58 % new wool, 25 % viscose, 8 % linen, 5 % polyamide, 4 % polyester
Yarn type:	Spun
Binding:	Various constructions
Width:	150 cm
Weight:	App. 635 g / lin.m

**3. Manufacturer**

The client is the manufacturer.

**4. Purpose of test**

By request of the client, the product has been subjected to the test procedure of EN ISO 11925-2:2010.

**5. Sample**

On 2016-06-24 DBI - Danish Institute of Fire and Security Technology received the following sample:

One pc. of Sunniva, 58 % new wool, 25 % viscose, 8 % linen, 5 % polyamide, 4 % polyester - Duraflam treatment with overall dimensions 1040 x 1467 x 1 mm, the weight per unit area, at 20 °C (undried) was determined to 0.6 kg/m<sup>2</sup>.

Further material specification was given by the client and has been filed at DBI under the above file number.

**6. Conditioning**

2016-06-24 the specimens were stored in a conditioning room with an atmosphere of relative humidity of 50 ± 5% at a temperature of 23 ± 2 °C. The specimens were kept in this room until the tests were performed.

**7. Test method**

The test was performed in accordance with:

EN ISO 11925-2:2010 and EN ISO 11925-2: 2010/AC:2011	Reactions to fire test – Ignitability of products subjected to direct impingement of flame Part 2: Single-flame source test.
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## 8. Test results

Date of test: 2016-06-29

Flame application time: 30 sec.

Test running time: 60 sec.

Edge flame impingement

Specimen No.	Ignition (yes/no)	Flame spread > 150 mm	Time (sec) to reach 150 mm mark	Ignition of filter paper (yes/no)
1L	Yes	No	-	No
2L	Yes	No	-	No
3L	Yes	No	-	No
4C	Yes	No	-	No
5C	Yes	No	-	No
6C	Yes	No	-	No

L: Lengthwise C: Crosswise


Surface flame impingement

Specimen No.	Ignition (yes/no)	Flame spread > 150 mm	Time (sec) to reach 150 mm mark	Ignition of filter paper (yes/no)
1L	Yes	No	-	No
2L	Yes	No	-	No
3L	Yes	No	-	No
5L	Yes	No	-	No
5C	Yes	No	-	No
6C	Yes	No	-	No

L: Lengthwise C: Crosswise

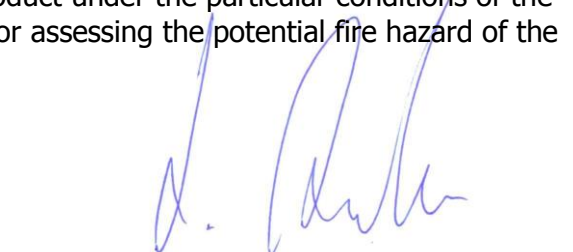
## 9. Comment

These test results relate only to the behaviour of the product under the particular conditions of the test, and they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.



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# Test report

Sunniva, 58 % new wool, 25 % viscose,  
8 % linen, 5 % polyamide, 4 % polyester - Duraflam  
treatment



Name of client: Kvadrat A/S  
File no.: PFA10879I  
Date: 2016-08-02  
Pages: 6                      Encl.: 5  
Ref: JAG     /     MPA



**DBI**

## Client information

Client: Kvadrat A/S  
Address: Lundbergsvej 10  
DK-8400 Ebeltøft  
Denmark

The results relate only to the items tested. The test report should only be reproduced in extenso - in extracts only with a written agreement with this institute.

**DBI****1. Material**

Textile.

**Trade name**

Sunniva, 58 % new wool, 25 % viscose, 8 % linen, 5 % polyamide, 4 % polyester - Duraflam treatment

**2. Manufacturer**

The client is the manufacturer.

**3. Nature of test**

By request of the client, the product has been subjected to the test procedure of EN 13823:2010 + A1:2014.

**4. Sample**

On 2016-06-24 DBI - Danish Institute of Fire and Security Technology received the following sample:

1 pc. of Sunniva, , 58 % new wool, 25 % viscose, 8 % linen, 5 % polyamide, 4 % polyester - Duraflam treatment, each with dimensions 1040 x 1467 x 1 mm.

The weight per unit area at 20°C (undried): 0.5 kg/m<sup>2</sup> at the state of receipt determined by weight and measures of the sample.

And on 2016-07-14 DBI - Danish Institute of Fire and Security Technology received the following sample:

1 pc. of Sunniva, , 58 % new wool, 25 % viscose, 8 % linen, 5 % polyamide, 4 % polyester - Duraflam treatment, each with dimensions 4120 x 1465 x 1 mm.

The weight per unit area at 20°C (undried): 0.5 kg/m<sup>2</sup> at the state of receipt determined by weight and measures of the sample.

The following information was given by the client:

Design:	Raf Simons and Fanny Aronsen
Composition:	58 % new wool, 25 % viscose, 8 % linen, 5 % polyamide, 4 % polyester
Yarn type:	Spun
Binding:	Various constructions
Width:	150 cm
Weight:	App. 635 g / lin.m

One test specimen was prepared from the sample to EN 13823.



## 5. Mounting of specimen for Single Burning Item test

A standard mounting of specimen was carried out in accordance with EN 13823 as follows:

Mounting: Standard mounting option b) in clause 5.2.2 of EN 13823.

Substrate: 10 mm calcium silicate, cf. EN 13238.

Fixing means: The textile was clipped on the back of the substrate.

Joints: Mounted without joints.

The specimen was assembled by DBI or the client

## 6. Conditioning

On 2016-07-14 the specimen was stored in a conditioning room with an atmosphere of relative humidity of  $50 \pm 5$  % and a temperature of  $23 \pm 2$  °C. The test specimens were kept in this room until the tests were performed.

## 7. Test method

The test was performed in accordance with:

EN 13823:2010 + A1:2014      Reaction to fire tests for building products - Building products excluding flooring exposed to the thermal attack by a single burning item

## 8. Test results

Date of test: 2016-07-28.

1 test was performed.

During the test the following measurements were made: Volume flow in the exhaust duct, production of carbon dioxide, concentration of oxygen, and production of light-obscuring smoke. Based on these measurements the rate of heat release and the rate of smoke production were calculated.

The graphs, enclosures 1-4, show for the test performed:

Enclosure 1

- Average Heat Release Rate  $HRR_{av}(t)$
- Total Heat Release THR (t)





Enclosure 2

- Average Heat Release Rate per unit time  $[1000 \times \text{HRR}_{\text{av}}(t)/(t-300)]$
- $\text{Figra}_{0,2\text{MJ}}$ -values

Enclosure 3

- $\text{Figra}_{0,4 \text{ MJ}}$ -values
- Smoke Production Rate  $\text{SPR}_{\text{av}}(t)$

Enclosure 4

- Total Smoke Production  $\text{TSP}(t)$
- Smoke Production Rate per unit time  $[10000 \times \text{SPR}_{\text{av}}(t)/(t-300)]$

The test results are shown in table 1.

	Test No. 1
$\text{FIGRA}_{0,2 \text{ MJ}}$ [W/s]	130.2
$\text{FIGRA}_{0,4 \text{ MJ}}$ [W/s]	27.8
$\text{THR}_{600\text{s}}$ [MJ]	1.90
$\text{SMOGRA}$ [ $\text{m}^2/\text{s}^2$ ]	27.4
$\text{TSP}_{600 \text{ s}}$ [ $\text{m}^2$ ]	41.6
$\text{FDP}_{f \leq 10\text{s}}$ [yes/no]	No
$\text{FDP}_{f > 10\text{s}}$ [yes/no]	No
LFS < edge of specimen [yes/no]	Yes

Table 1.

- $\text{FDP}_{f \leq 10\text{s}}$ : Flaming Droplets/Particles burning less than 10 seconds.
- $\text{FDP}_{f > 10\text{s}}$ : Flaming Droplets/Particles burning more than 10 seconds.
- LFS: Lateral Flame Spread on the long wing of the test specimen.

There were no recorded observations of significance during the test.

Photographs of the test specimen show the effect of the damages, see enclosure 5



**DBI**

## 9. Statement

The test results relate to the behaviour of the test specimens of a product under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.

The product designated Sunniva, , 58 % new wool, 25 % viscose, 8 % linen, 5 % polyamide, 4 % polyester - Duraflam treatment indicates to fulfil the criteria for a class C-s1,d0 product according to EN 13501-1:2007 + A1:2009.

This report can not be used for classification purposes nor for approval by the authorities.

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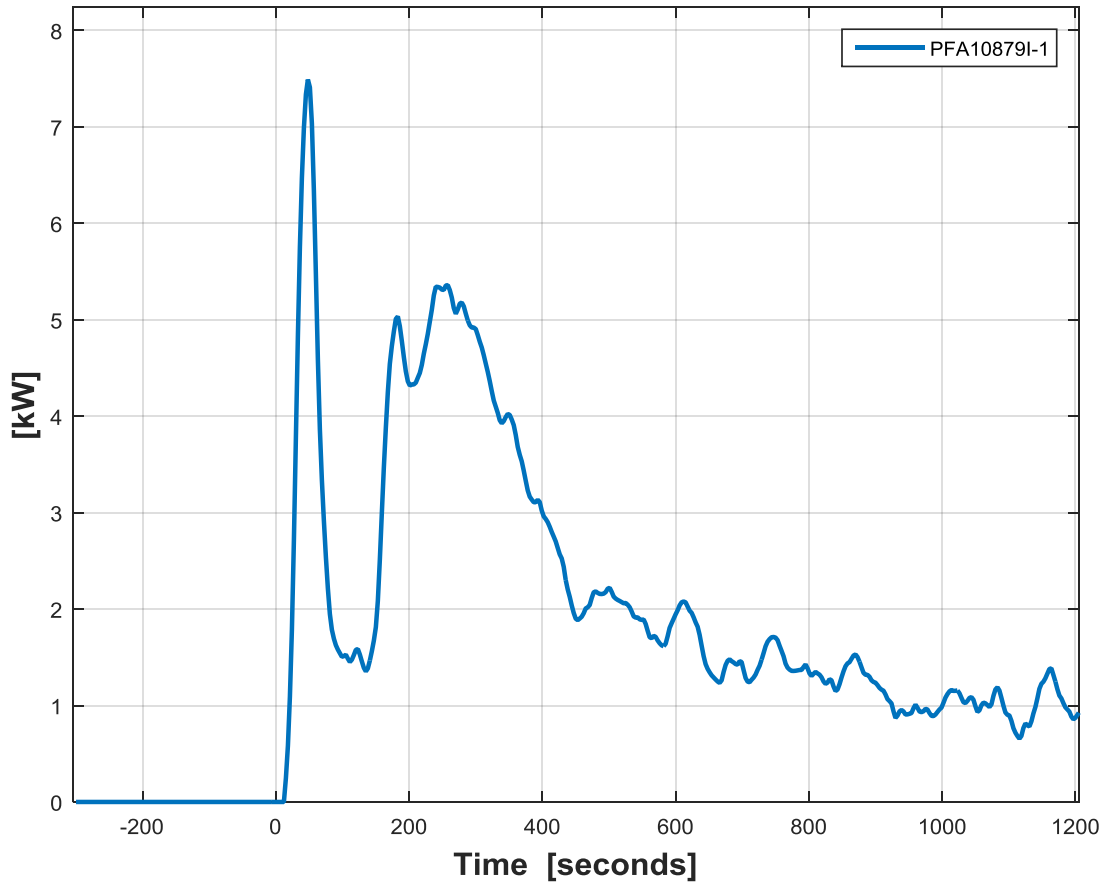
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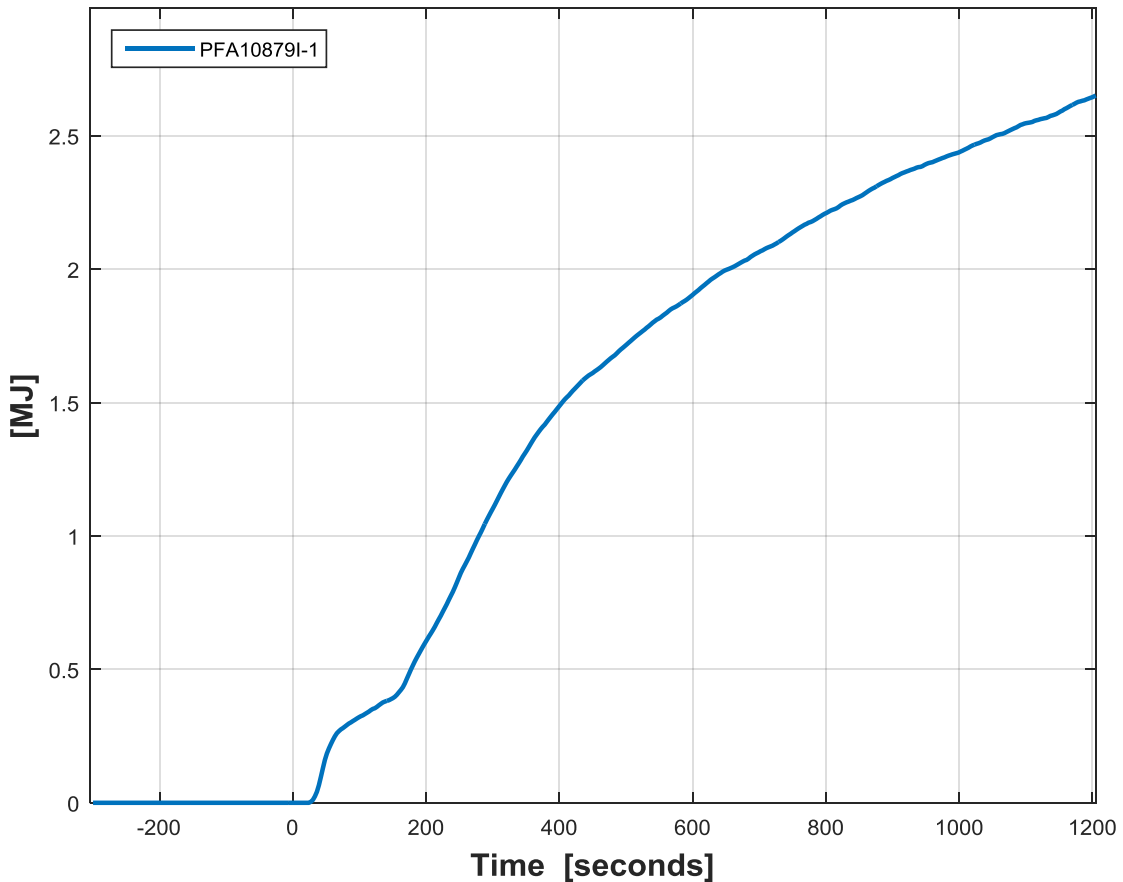


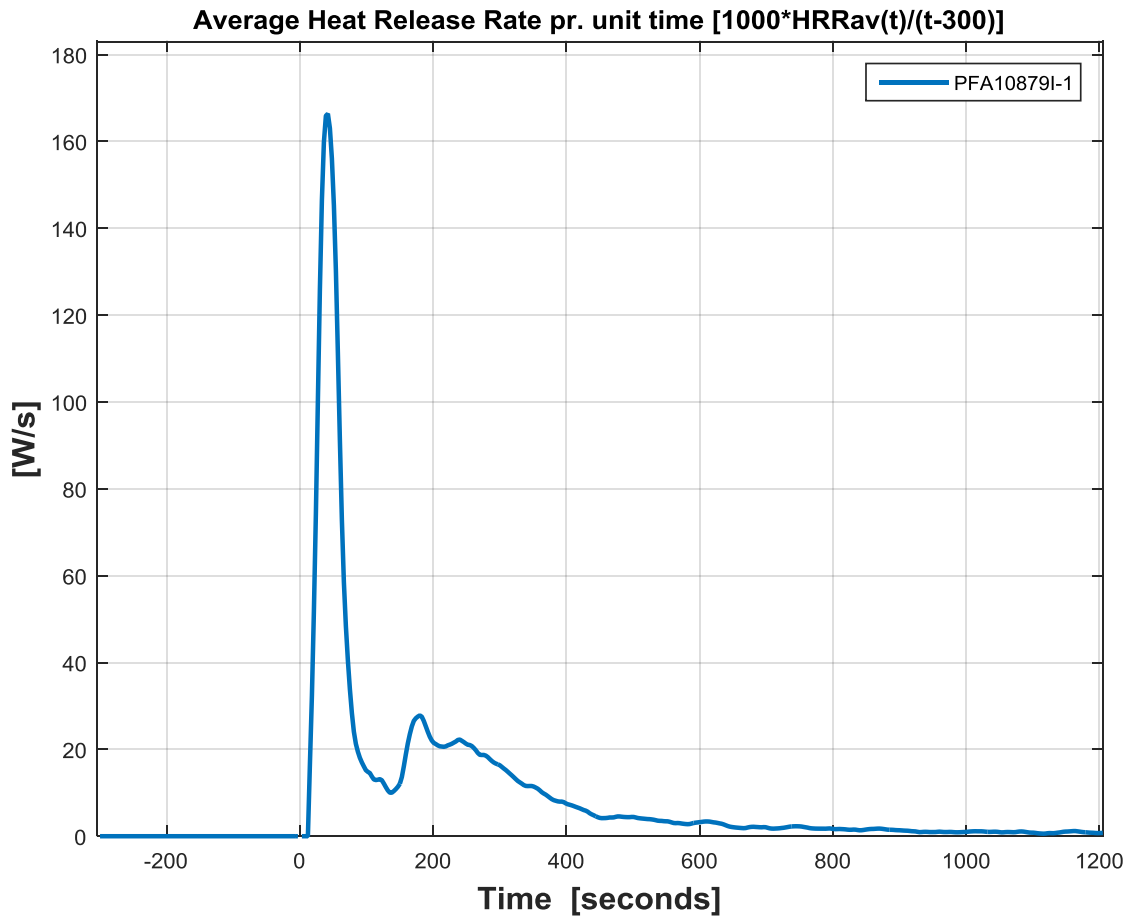
**DBI**

### Average Heat Release Rate HRRav(t)

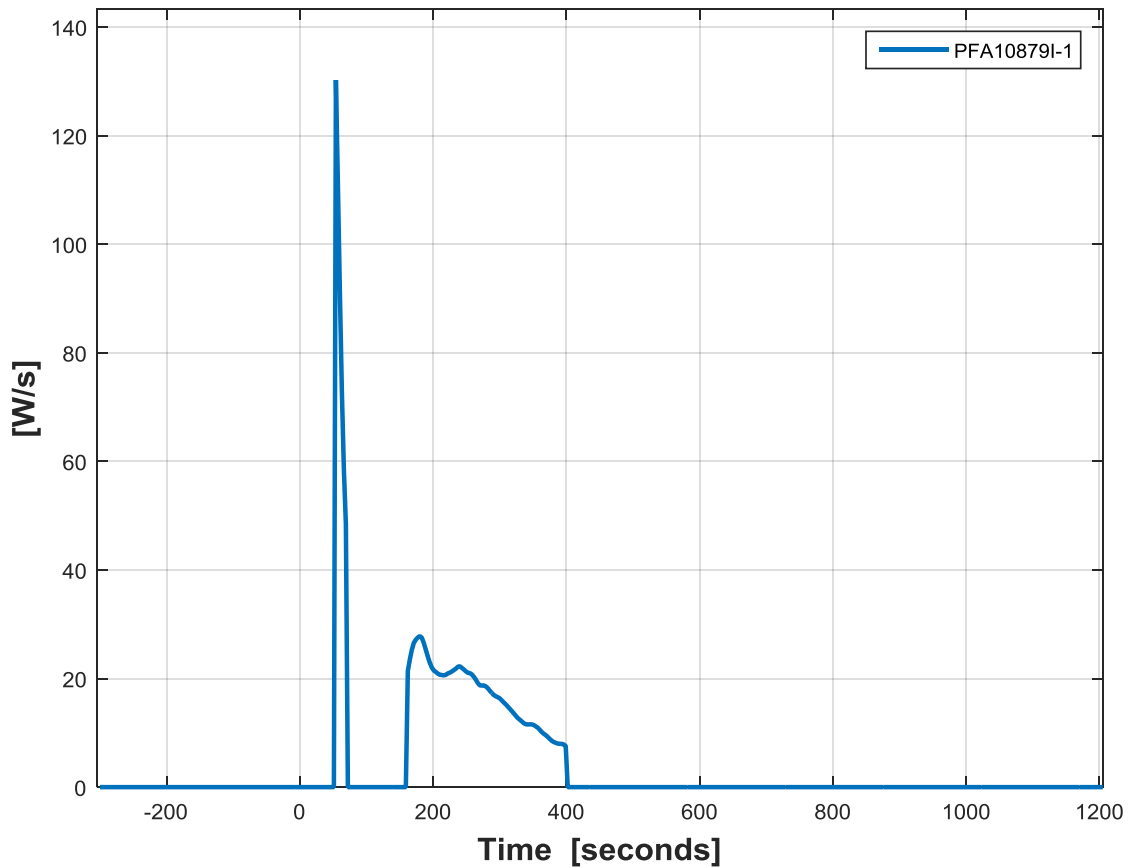


### Total Heat Release THR(t)





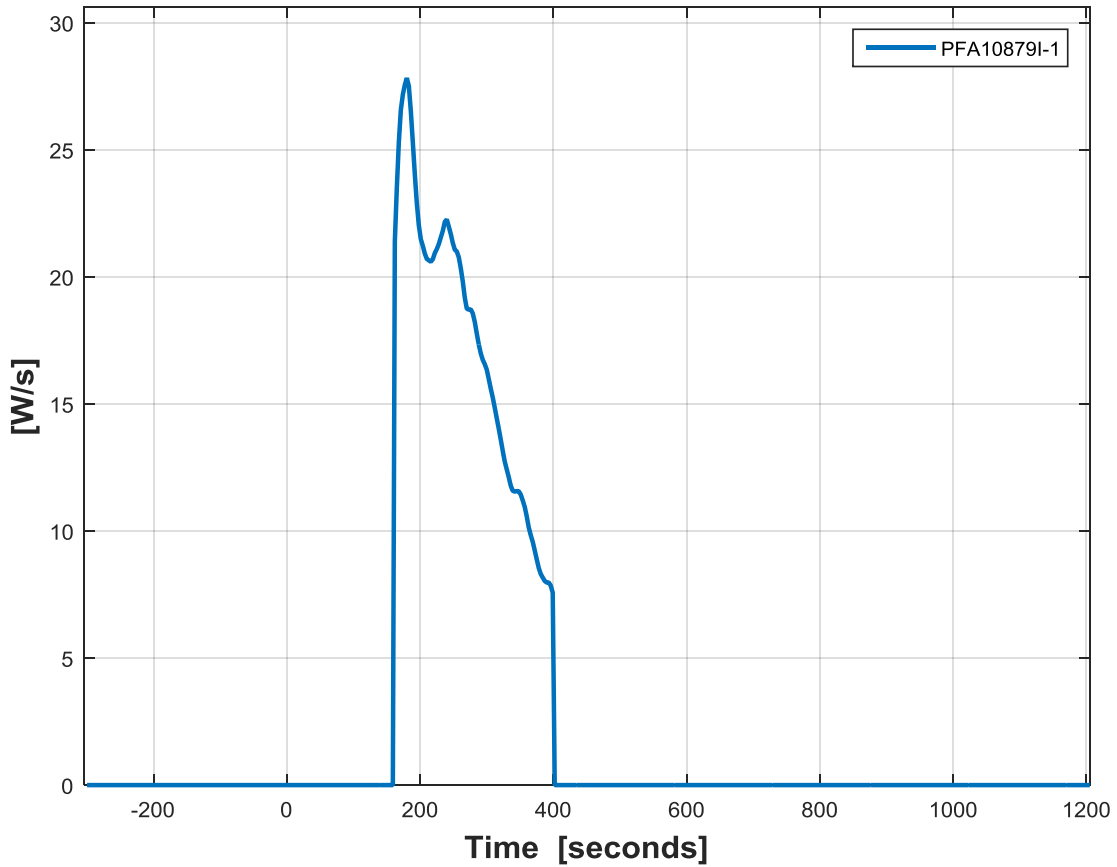
**FIGRA<sub>0.2MJ</sub>-values**



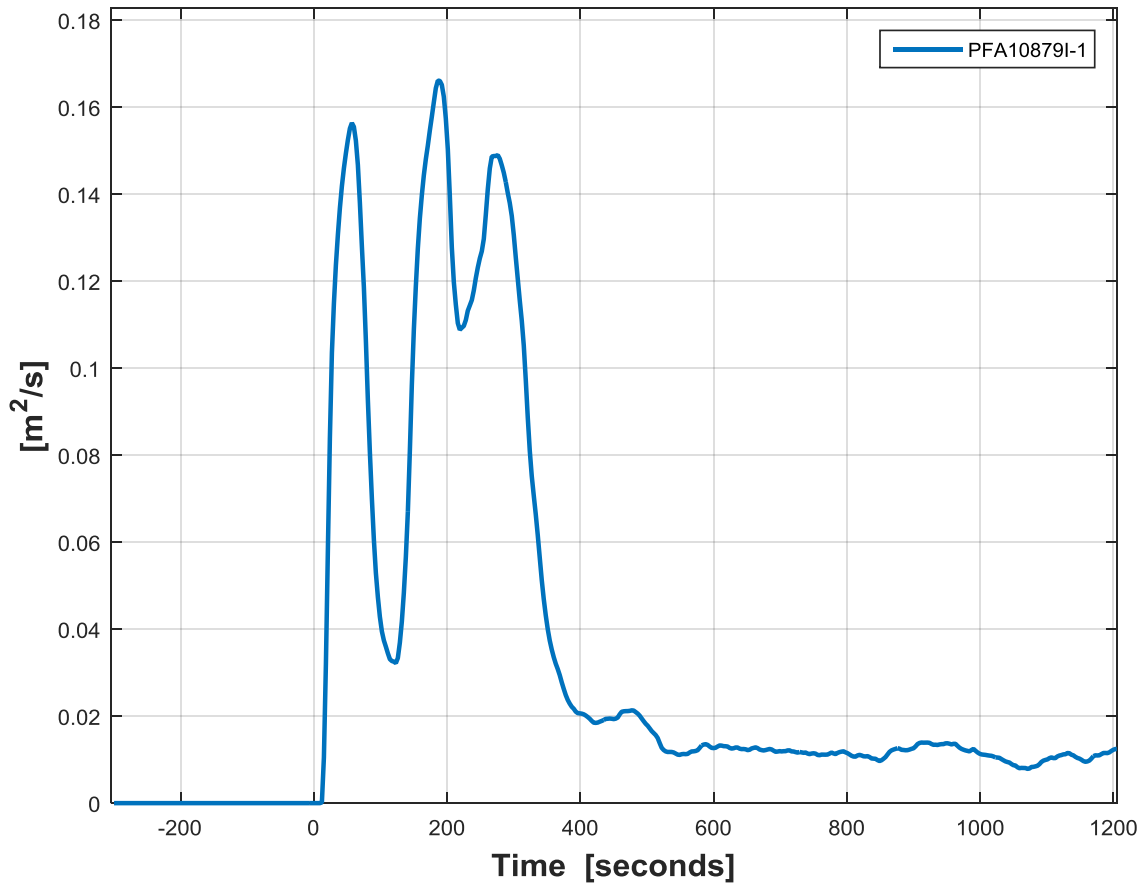


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### FIGRA<sub>0.4MJ</sub>-values



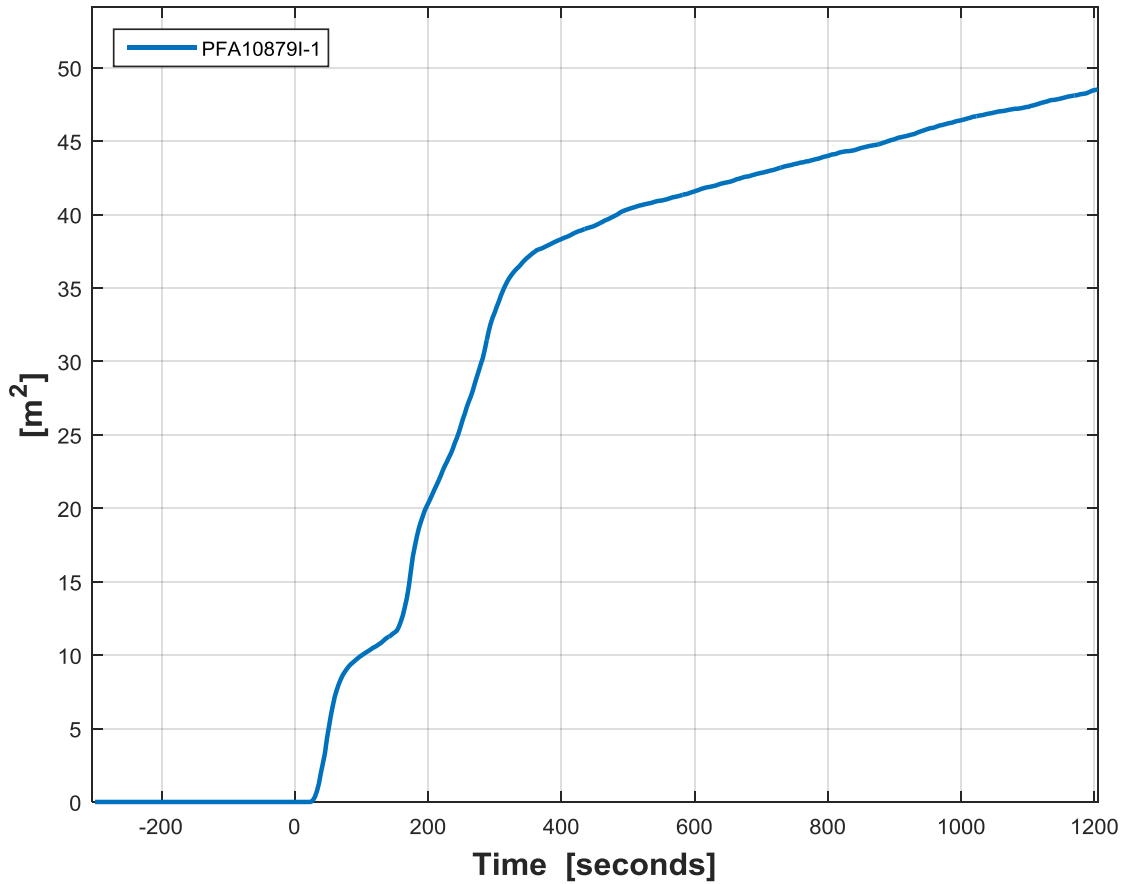
### Smoke Production Rate SPRav(t)



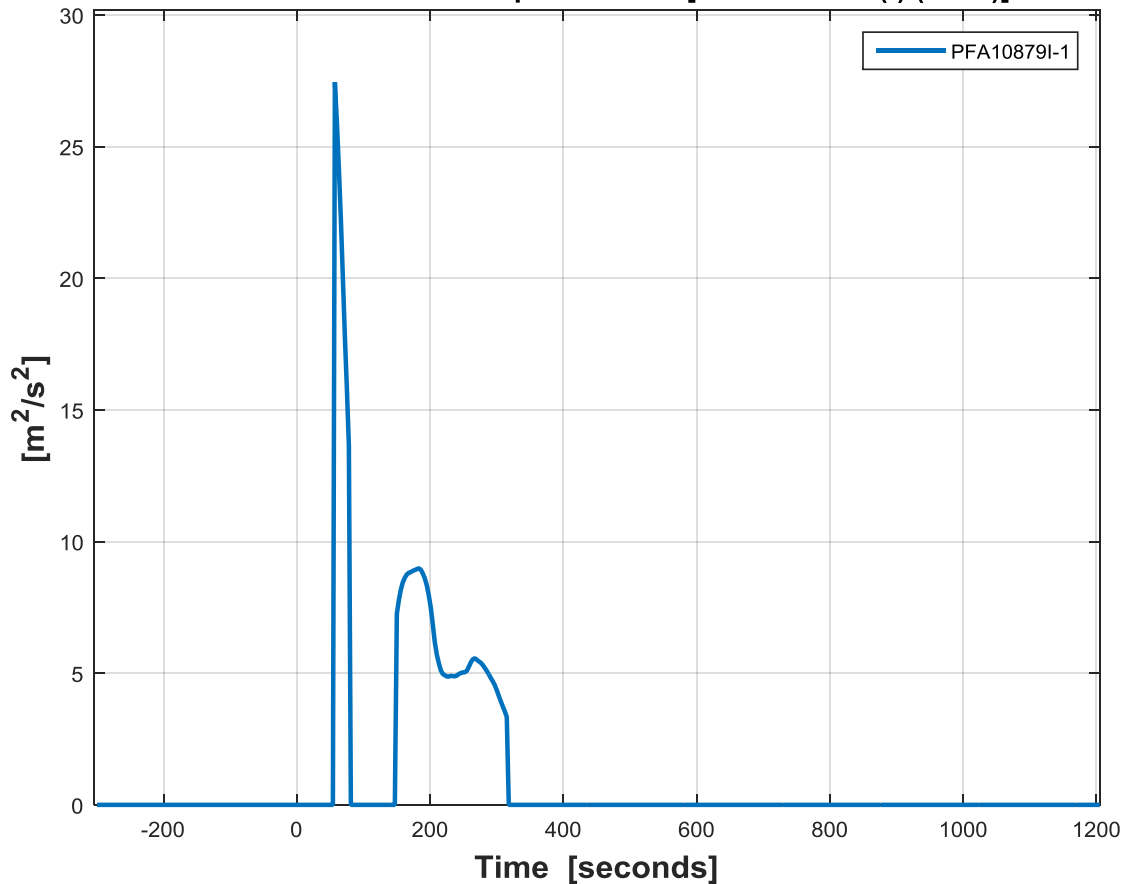


**DBI**

### Total Smoke Production TSP(t)



### Smoke Production Rate pr. unit time [ $10000 \cdot SPR_{av}(t)/(t-300)$ ]





**DBI**

TEST NO. 1

