

GTB

**Substitute Light Sources
Equivalence Reports for C5W, PY21W, and R5W**

In support of documents GRE/2017/2
and GRE/2017/3

Equivalence Report

C5W

According to Regulation No. 128
Equivalence Requirements GRE-77-02

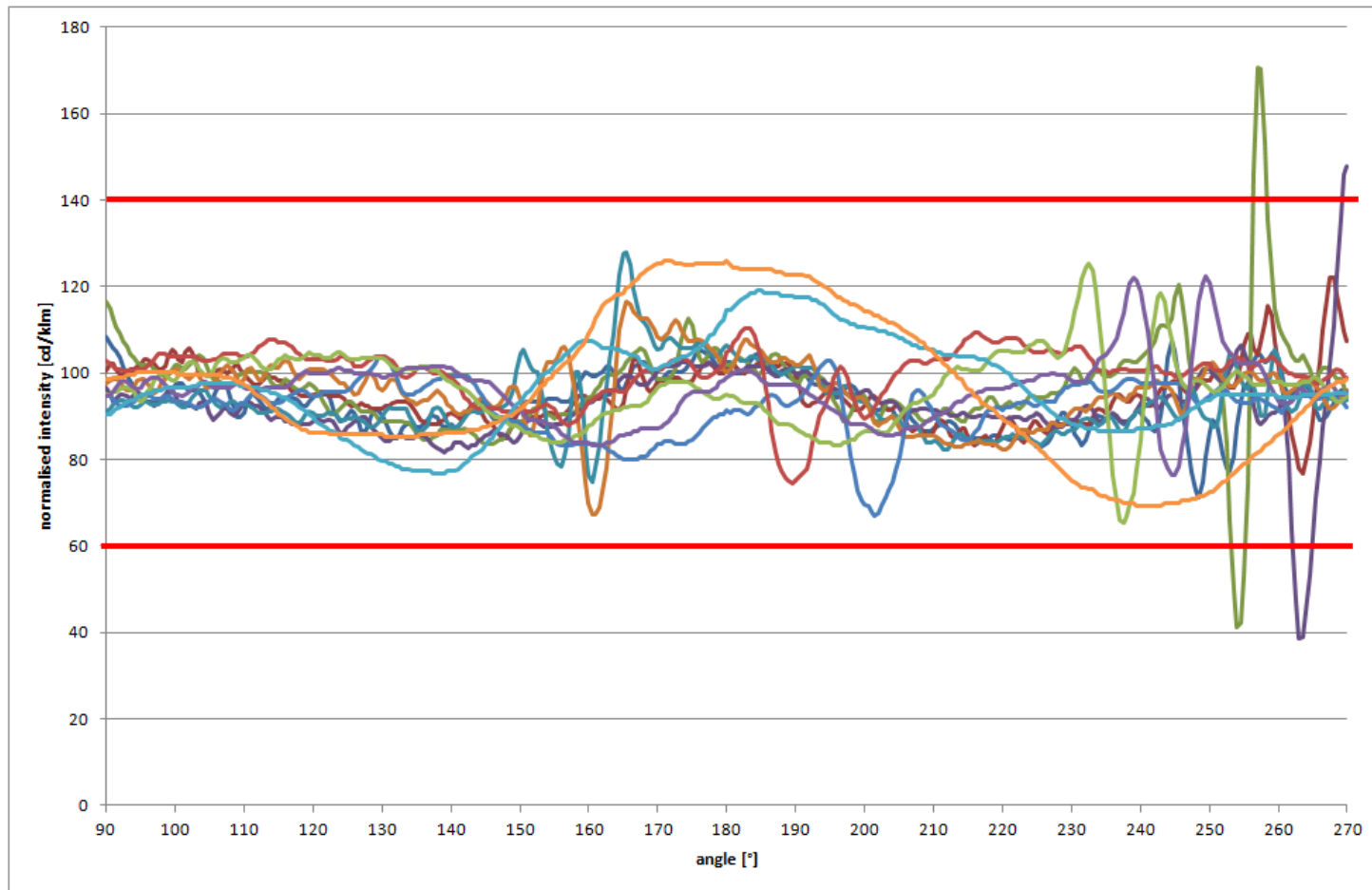
Checklist for Equivalence of Parameters

C5W

<u>Parameters</u>	<u>Check</u>
3.1. Parameters with the same values	
3.1.1. Cap (as in accordance with the given IEC Publication 60061)	✓
3.1.2. Maximum lamp outline dimensions	✓
3.1.3. Electrical connector	n/a
3.1.4. Test voltage	✓
3.1.5. Objective luminous flux	✓
3.1.6. Colour of emitted light	✓
3.1.7. Light centre length	✓
3.1.8. Distortion free zone (if any)	n/a
3.2. Parameters with similar values	
3.2.1. Normalized luminous intensity distribution	see page 3 ✓
3.2.2. Size and position of the light-emitting-area	see page 4 ✓
3.2.3. Homogeneity of the light-emitting-area	see page 4 ✓
3.3. Parameters with different values	
3.3.1. Maximum electrical power consumption	2W ✓
3.3.2. The minimum voltage range	R128 Annex 4 (9-16V) ✓
3.3.3. The spectral content	R128 par. 2.3.3. ✓
3.4. Additional parameters	
3.4.1. Thermal behaviour	R128 Annex 4 ✓
4. Requirements regarding failure detection	
4.1 Failure detection	75 170 mA ✓
4.2 Failure behaviour	below 25 mA ✓
	no flash R128 3.12.3. ✓

Normalised Intensity Distribution

C5W



Size, Position and Homogeneity of the Light-Emitting-Area C5W

R37: Filament length : **7.5mm min**, **15 mm max**

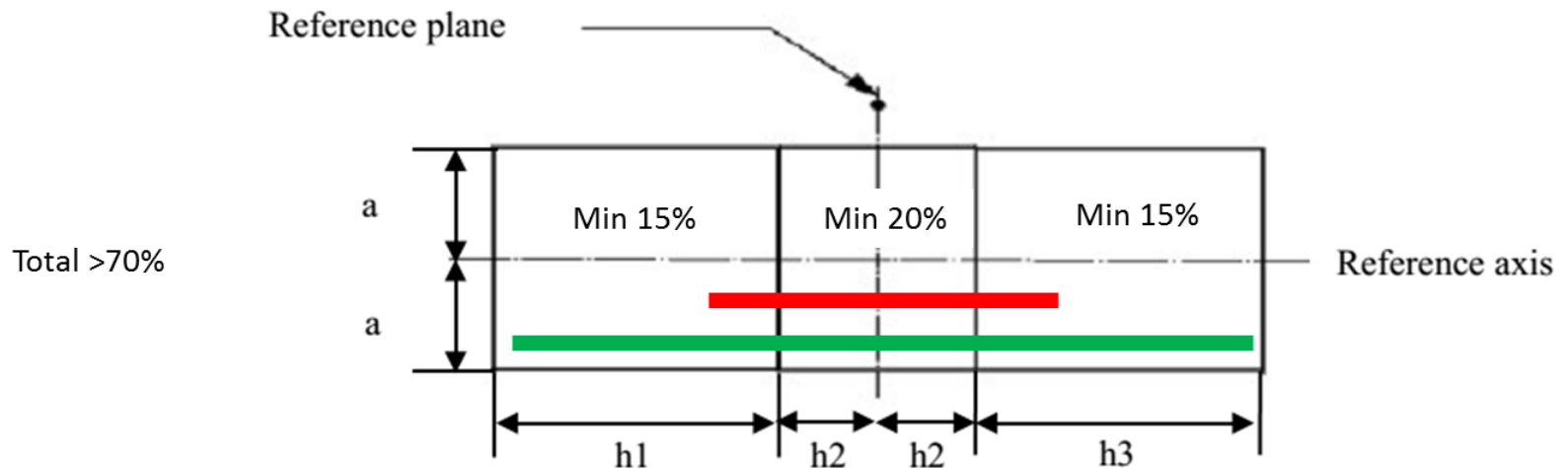


Table 2: Dimensions of the box system in figure 2 (Front, rear, top and bottom view)

Reference	a	h1, h3	h2
Dimension (mm)	2.5	6	2

Equivalence Report

PY21W

According to Regulation No. 128
Equivalence Requirements GRE-77-02

Checklist for Equivalence of Parameters

PY21W

Parameters

Check

3.1. Parameters with the same values

- 3.1.1. Cap (as in accordance with the given IEC Publication 60061)
- 3.1.2. Maximum lamp outline dimensions
- 3.1.3. Electrical connector
- 3.1.4. Test voltage
- 3.1.5. Objective luminous flux
- 3.1.6. Colour of emitted light
- 3.1.7. Light centre length
- 3.1.8. Distortion free zone (if any)

✓
✓
n/a
✓
✓
✓
✓
n/a

3.2. Parameters with similar values

- 3.2.1. Normalized luminous intensity distribution
- 3.2.2. Size and position of the light-emitting-area
- 3.2.3. Homogeneity of the light-emitting-area

see page 3 ✓
see page 4 ✓
see page 4 ✓

3.3. Parameters with different values

- 3.3.1. Maximum electrical power consumption
- 3.3.2. The minimum voltage range
- 3.3.3. The spectral content

9W (12V), 10W (24V) ✓
R128 Annex 4 ✓ (9-16V)
n/a for amber

3.4. Additional parameters

- 3.4.1. Thermal behaviour

R128 Annex 4 ✓

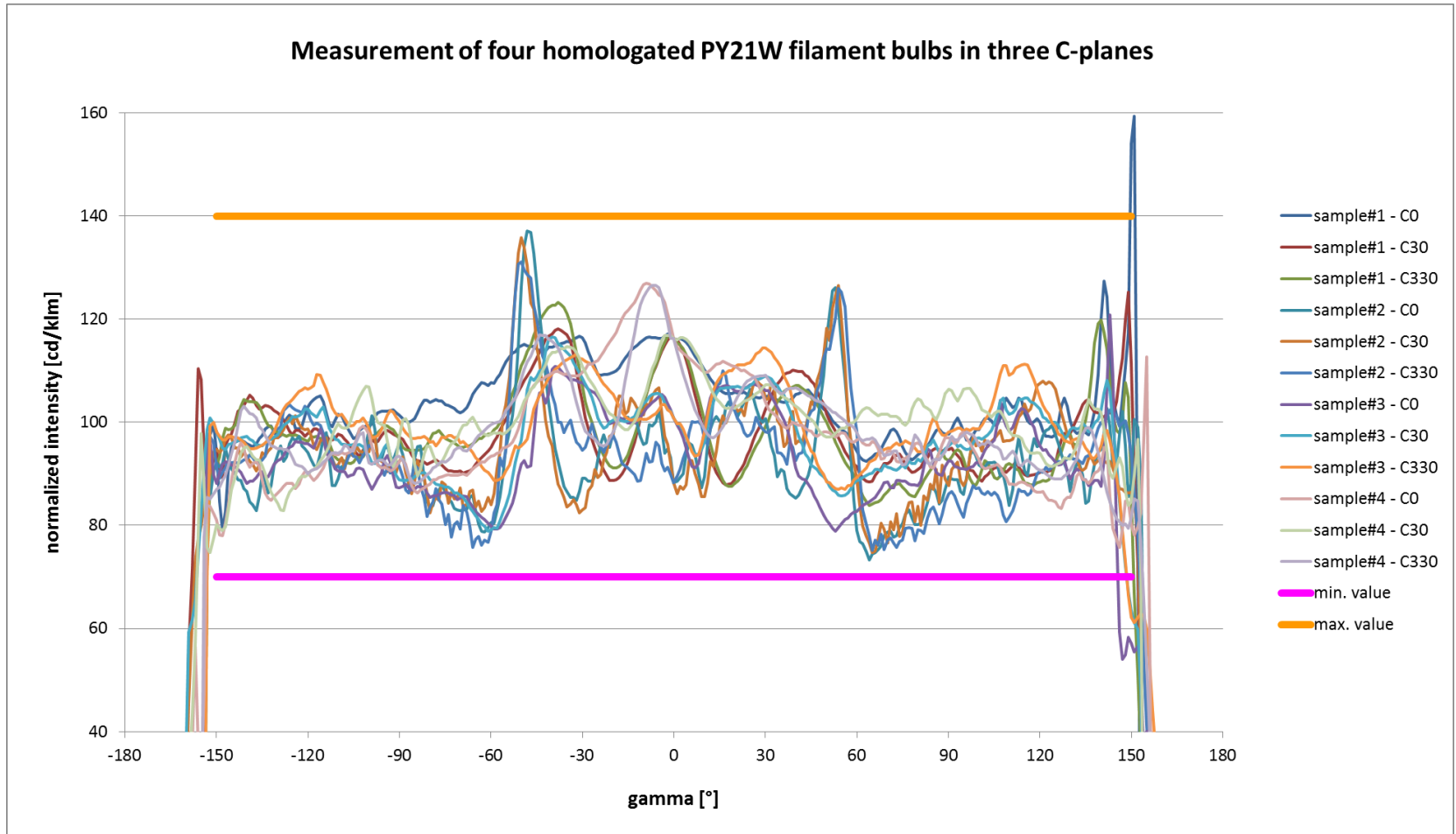
4. Requirements regarding failure

- 4.1. Failure detection
- 4.2. Failure behavior

150...750 mA ✓
below 50 mA ✓
no flash R128 3.12.3. ✓

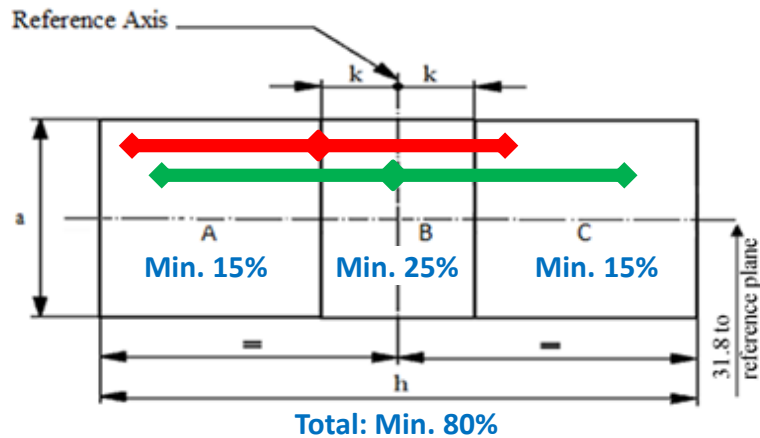
Normalised Intensity Distribution

PY21W



Size, Position and Homogeneity of the Light-Emitting-Area PY21W

R37 → Filament length : 5.5mm min, 7.0 mm max



Dimensions in mm	a	h	k
Top view ($\gamma = 0^\circ$)	5.0	9.0	1.0
Inclined view ($\gamma = \pm 45^\circ$)	7.0		
Front / Rear view ($\gamma = \pm 90^\circ$)	5.0		

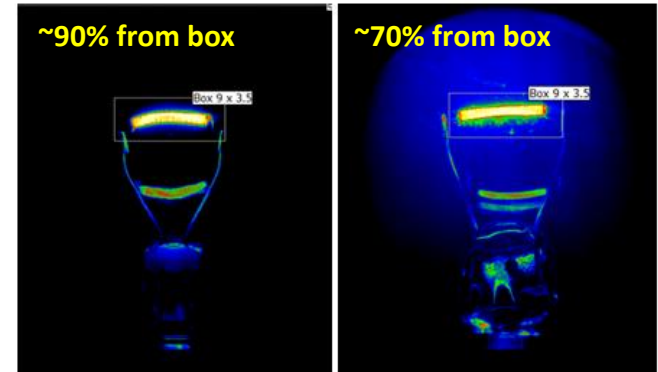


Figure 2: PY21W-samples with amber glass (left) and with amber coating (right)

Equivalence Report

R5W

According to Regulation No. 128
Equivalence Requirements GRE-77-02

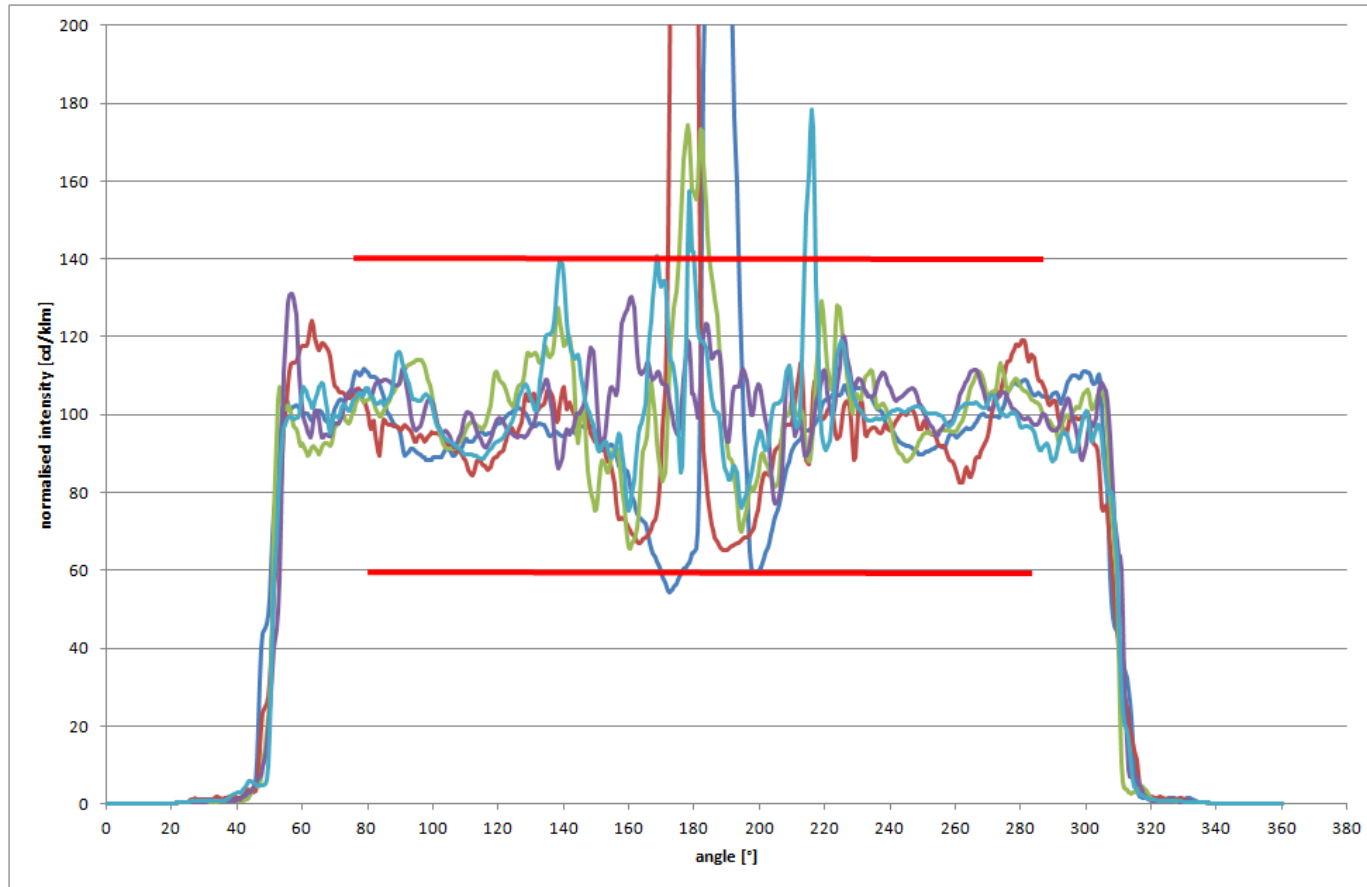
Checklist for Equivalence of Parameters

R5W

<u>Parameters</u>	<u>Check</u>
3.1. Parameters with the same values	
3.1.1. Cap (as in in accordance with the given IEC Publication 60061)	✓
3.1.2. Maximum lamp outline dimensions	✓
3.1.3. Electrical connector	n/a
3.1.4. Test voltage	✓
3.1.5. Objective luminous flux	✓
3.1.6. Colour of emitted light	✓
3.1.7. Light centre length	✓
3.1.8. Distortion free zone (if any)	n/a
3.2. Parameters with similar values	
3.2.1. Normalized luminous intensity distribution	see page 3 ✓
3.2.2. Size and position of the light-emitting-area	see page 4 ✓
3.2.3. Homogeneity of the light-emitting-area	see page 4 ✓
3.3. Parameters with different values	
3.3.1. Maximum electrical power consumption	2W ✓
3.3.2. The minimum voltage range	R128 Annex 4 (9-16V) ✓
3.3.3. The spectral content	R128 par. 2.3.3. ✓
3.4. Additional parameters	
3.4.1. Thermal behaviour	R128 Annex 4
4. Requirements regarding failure detection	
4.1 Failure detection	75 170 mA ✓
4.2 Failure behaviour	below 25 mA ✓
	no flash R128 3.12.3. ✓

Normalised Intensity Distribution

R5W



Size, Position and Homogeneity of the Light-Emitting-Area R5W

R37: no requirements for filament length and no box definition

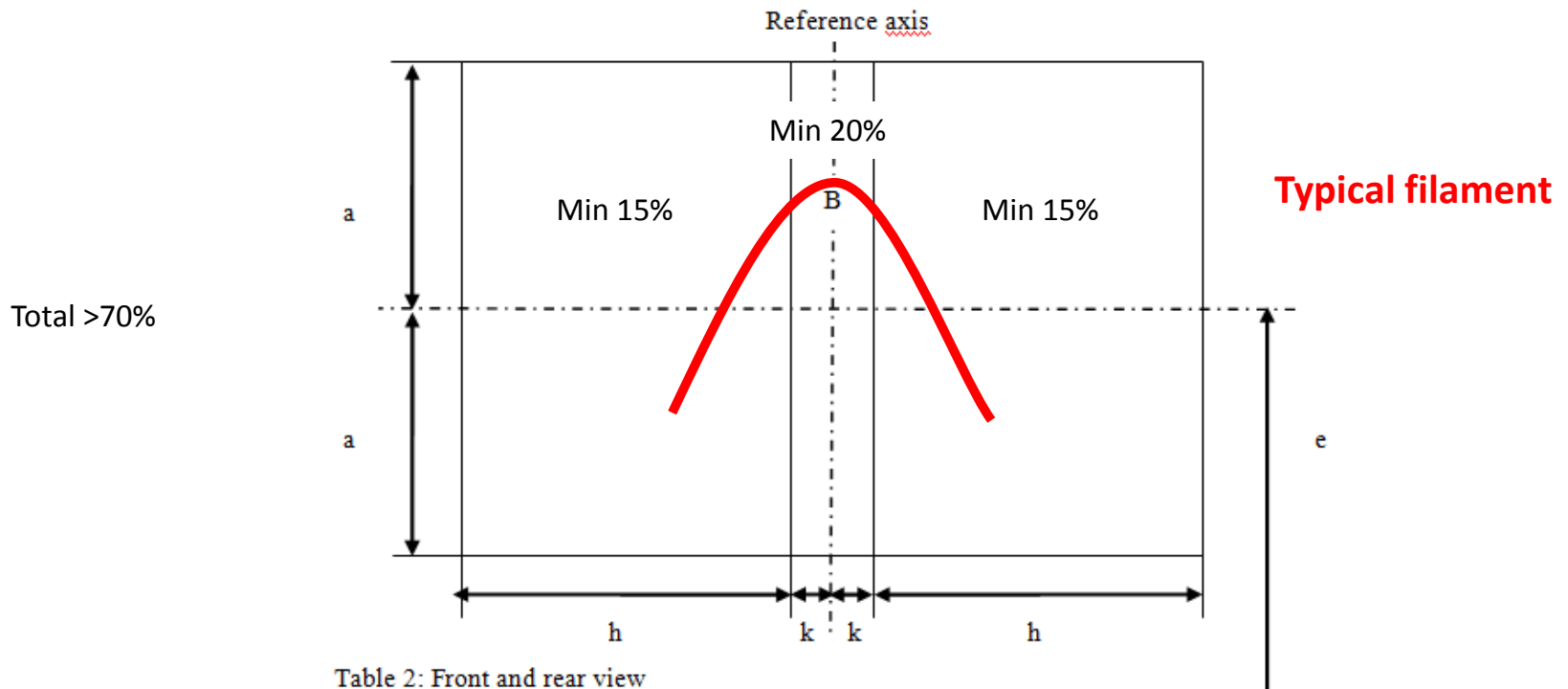


Table 2: Front and rear view

Reference	a	h	k
Dimension (mm)	3	4	0.5

END