

# PCN

## AO-PCN-2024-031-A

### Introduction of new chip generation for OSLON Signal device LB CRBP.01

15.10.2024

Dear Customer,

please review this **PCN** and provide your feedback in the **Customer approval form** (at the end of this PCN document) to your ams OSRAM sales partner before **22.11.2024 \***).

Your prompt reply will help ams OSRAM to assure a smooth and well executed transition. If ams OSRAM does not hear from your side by the due date, we will assume your (if you are a Distributor: and your customer's) full acceptance to this proposed change and its implementation.

ams OSRAM understands the time requirements your organization needs to approve this PCN. However, if you can provide ams OSRAM an estimated date your organization will have finalized this PCN review, ams OSRAM can use this date to plan continued production to secure your order needs during the transition time.

Your attention and response to this matter is highly appreciated.

**Please direct your inquiries to your local Sales office.**

- \*) ams OSRAM aligns with the widely recognized JEDEC/ECIA/IPC Joint Standard No. 46, which stipulates:
- Customers should acknowledge receipt of the PCN within 30 days of delivery of the PCN.
  - Lack of acknowledgement of the PCN within 30 days constitutes acceptance of the change.
  - After acknowledgement, lack of additional response within the 90 day period constitutes acceptance of the change. If the customer requires additional time to perform sample testing, beyond the 90 day review period, an extension must be negotiated with the supplier.

Subject of change:	Introduction of new chip generation for OSOLON Signal device LB CRBP.01	
Affected products:	LB CRBP.01	
Reason for change:	<ul style="list-style-type: none"><li>• Secure continuous supply</li><li>• Chip performance improvement</li></ul>	
Description of change:	<u>Current status</u> <ul style="list-style-type: none"><li>• Current Chip</li><li>• 38µm wire diameter</li></ul>	<u>New status</u> <ul style="list-style-type: none"><li>• Next Generation Chip</li><li>• 30µm wire diameter</li><li>• Appearance change</li></ul>
	For details refer to document 2_cip_AO-PCN-2024-031-A	
Product identification:	e.g. Date code / Laser marking on device	
Time schedule for PCN material: (after implementation of change):	Final qualification report:	15.10.2024
	Samples available:	On request
	Intended Start of delivery:	01.01.2025 <sup>*)</sup> <small>*) or earlier if released by customer and upon mutual agreement</small>
Time schedule for Pre-PCN material: (prior to implementation of change):	Last time order date (LTO):	01.01.2025 <sup>**) </sup> <small>**) Lead time and LTO quantity shall be mutually agreed between ams OSRAM and customer.</small>
	Last time delivery date (LTD):	01.04.2025 <sup>***)</sup> <small>***) planned last date for delivery of products of current status</small>
Assessment:	No change in product dimension	
Documentation:	Customer information package 2_cip_AO-PCN-2024-031-A 3_Qual_AO-PCN-2024-031-A	

Note:

Pre-PCN material: Products of current status, means before implementation of the changes as described in the PCN.

PCN material: Products with implementation of the changes as described in the PCN.

## Customer approval form AO-PCN-2024-031-A

### Introduction of new chip generation for OSOLON Signal device LB CRBP.01

Please list product(s) affected in your application(s):

Please check the appropriate box below:

<input type="radio"/> <b>Approval:</b> We agree with the proposed change and accept start of the shipment upon availability of PCN material	<input type="radio"/> <b>Not relevant:</b> Change is not relevant for products in use.
<input type="radio"/> <b>Change cannot be accepted:</b>	
<input type="radio"/> <b>We have objections:</b>	
<input type="radio"/> <b>We request following Information:</b>	
<input type="radio"/> <b>We request following Samples:</b>	
<input type="radio"/> <b>Expected approval date:</b>	
<input type="radio"/> <b>Volume requirements for Pre-PCN material:</b>	
<input type="radio"/> <b>Remarks:</b>	

Sender:

Company:

Address / Location:

Signature:

Date:

Please return this approval form to your Sales partner.



# PCN AO-PCN-2024-031-A Introduction of new chip generation for OSOLON Signal device LB CRBP.01

Customer information package

Department  
2024-10-15

# Agenda

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# AO-PCN-2024-031-A

## Introduction of new chip generation for OSOLON Signal device LB CRBP.01

### Reason for change

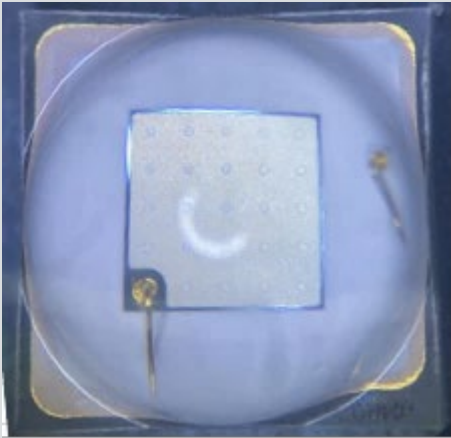
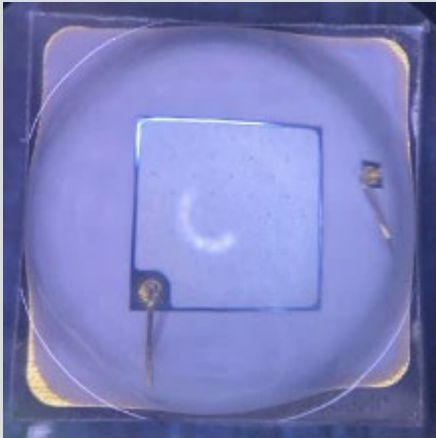
Item	Description
1.	Secure continious supply
2.	Chip performance improvement



# AO-PCN-2024-031-A

## Introduction of new chip generation for OSOLON Signal device LB CRBP.01

### Description of change

Item	Current status	New status
1.	Current Chip	Next Generation Chip
2.	Wire diameter of 38μm	Change of wire diameter to 30μm
3.	Current appearance LB CRBP.01 	New appearance LB CRBP.01 

# AO-PCN-2024-031-A

## Introduction of new chip generation for OSOLON Signal device LB CRBP.01

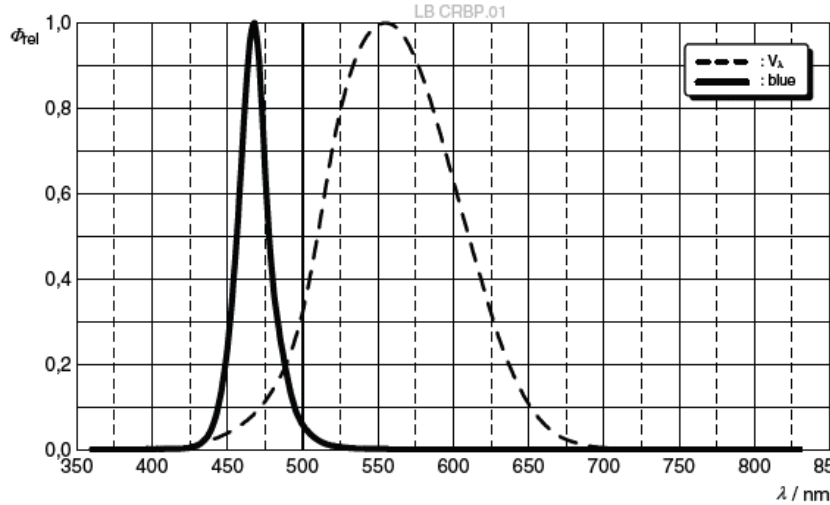
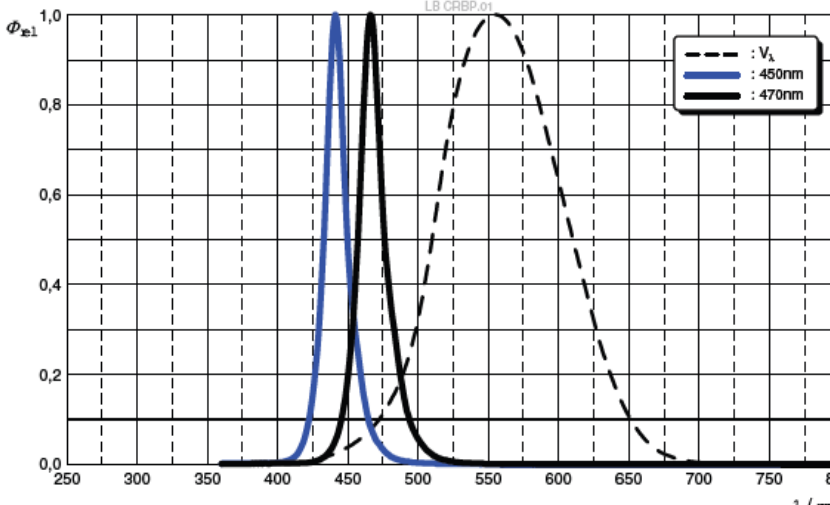
### Changes in the datasheets

Item	Current status	New status
1.	<div><b>Characteristics</b> I<sub>F</sub> = 350 mA; T<sub>S</sub> = 25 °C</div>	<div><b>Characteristics</b> I<sub>F</sub> = 350 mA; T<sub>S</sub> = 25 °C</div>
	<div>Viewing angle at 50% I<sub>V</sub>2φtyp.110 °</div>	<div>Viewing angle at 50% I<sub>V</sub>2φtyp.130 °</div>

# AO-PCN-2024-031-A

## Introduction of new chip generation for OSOLON Signal device LB CRBP.01

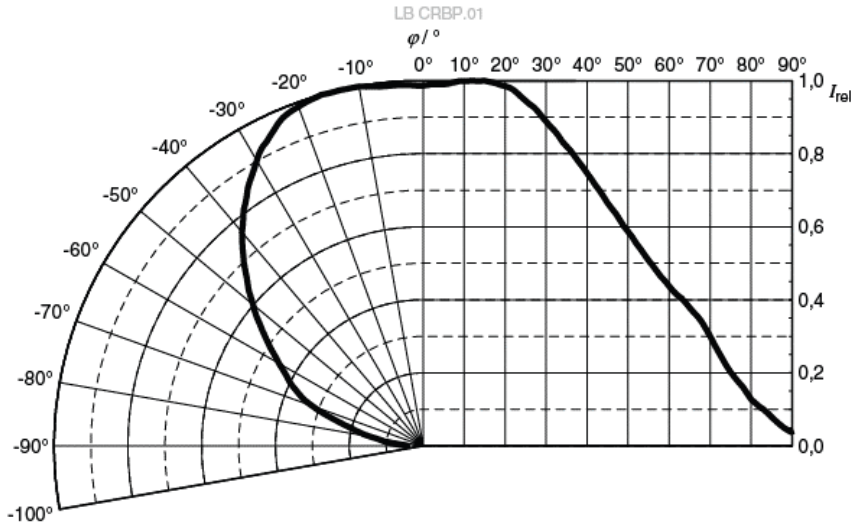
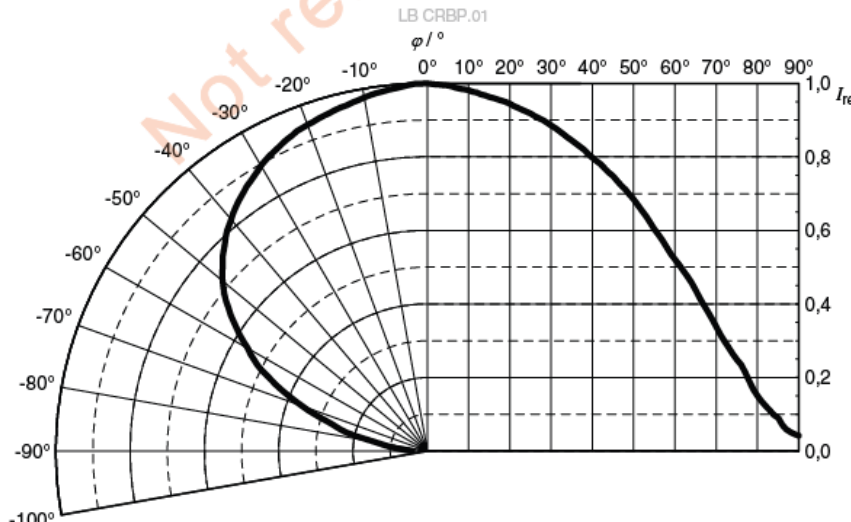
### Changes in the datasheets

Item	Current status	New status
2.	<div><p><b>Relative Spectral Emission</b> <sup>6)</sup></p><p><math>\Phi_{rel} = f(\lambda); I_F = 350\text{ mA}; T_S = 25\text{ °C}</math></p></div>	<div><p><b>Relative Spectral Emission</b> <sup>6)</sup></p><p><math>\Phi_{rel} = f(\lambda); I_F = 350\text{ mA}; T_S = 25\text{ °C}</math></p></div>

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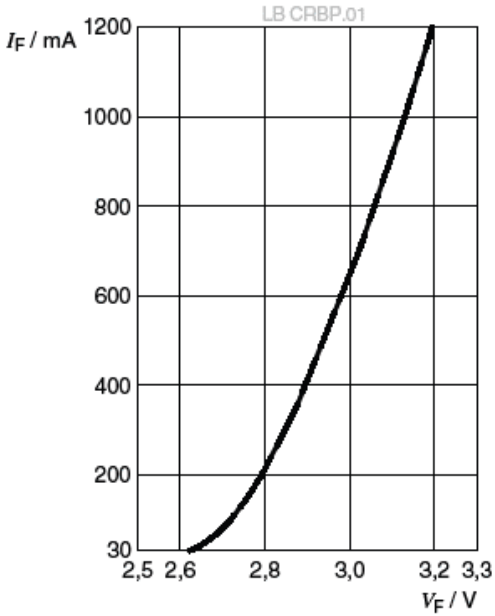
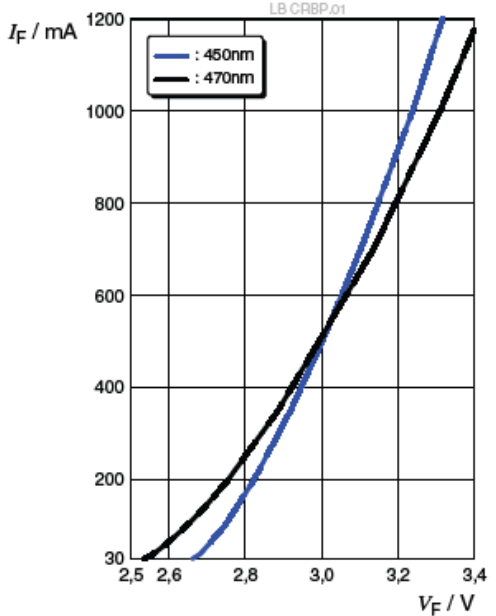
### Changes in the datasheets

Item	Current status	New status
3.	<p><b>Radiation Characteristics</b> <sup>6)</sup></p> <p><math>I_{rel} = f(\varphi); T_s = 25\text{ °C}</math></p> 	<p><b>Radiation Characteristics</b> <sup>6)</sup></p> <p><math>I_{rel} = f(\varphi); T_s = 25\text{ °C}</math></p> 

# AO-PCN-2024-031-A

## Introduction of new chip generation for OSOLON Signal device LB CRBP.01

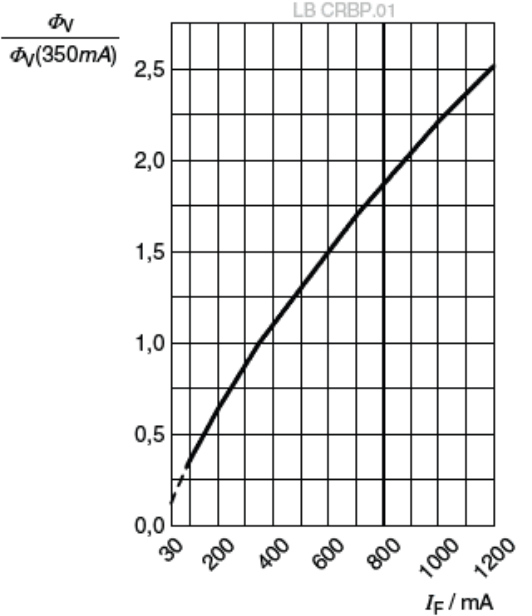
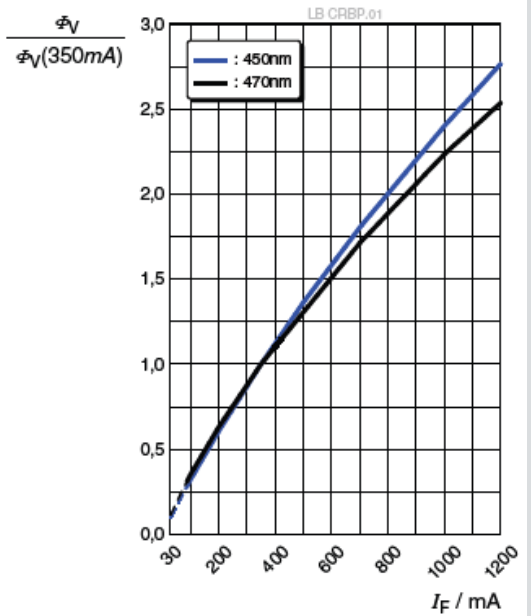
### Changes in the datasheets

Item	Current status	New status
4.	<div><p><b>Forward current</b> <sup>6)</sup></p><p><math>I_F = f(V_F); T_s = 25\text{ °C}</math></p></div>	<div><p><b>Forward current</b> <sup>6)</sup></p><p><math>I_F = f(V_F); T_s = 25\text{ °C}</math></p></div>

# AO-PCN-2024-031-A

## Introduction of new chip generation for OSOLON Signal device LB CRBP.01

### Changes in the datasheets

Item	Current status	New status
5.	<p><b>Relative Luminous Flux</b> <sup>6), 7)</sup></p> <p><math>\Phi_V/\Phi_V(350\text{ mA}) = f(I_F); T_s = 25\text{ °C}</math></p> <p>LB CRBP.01</p> 	<p><b>Relative Luminous Flux</b> <sup>6), 7)</sup></p> <p><math>\Phi_V/\Phi_V(350\text{ mA}) = f(I_F); T_s = 25\text{ °C}</math></p> <p>LB CRBP.01</p> 

# AO-PCN-2024-031-A

## Introduction of new chip generation for OSOLON Signal device LB CRBP.01

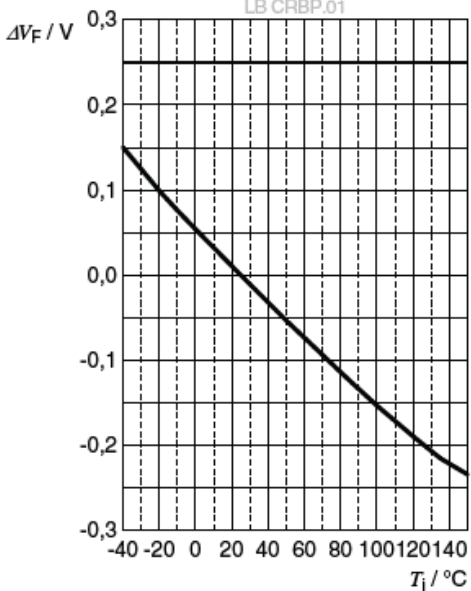
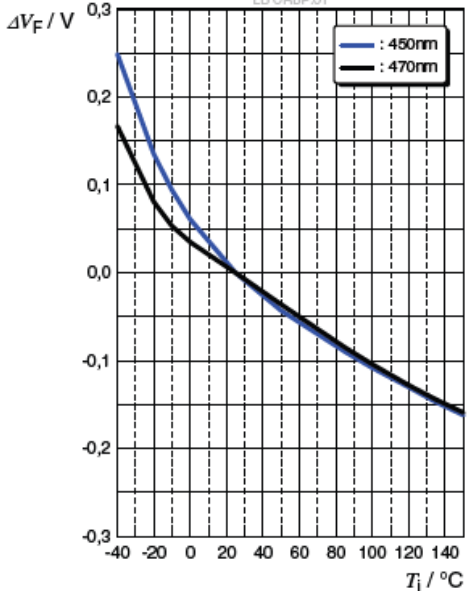
### Changes in the datasheets

Item	Current status	New status
6.	<div><p><b>Dominant Wavelength</b> <sup>6)</sup></p><p><math>\Delta\lambda_{\text{dom}} = f(I_F); T_S = 25\text{ °C}</math></p><p>LB CRBP.01</p></div>	<div><p><b>Dominant Wavelength</b> <sup>6)</sup></p><p><math>\Delta\lambda_{\text{dom}} = f(I_F); T_S = 25\text{ °C}</math></p><p>LB CRBP.01</p></div>

# AO-PCN-2024-031-A

## Introduction of new chip generation for OSOLON Signal device LB CRBP.01

### Changes in the datasheets

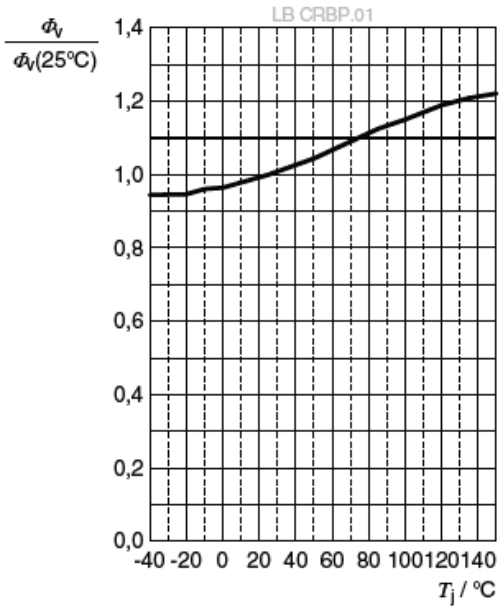
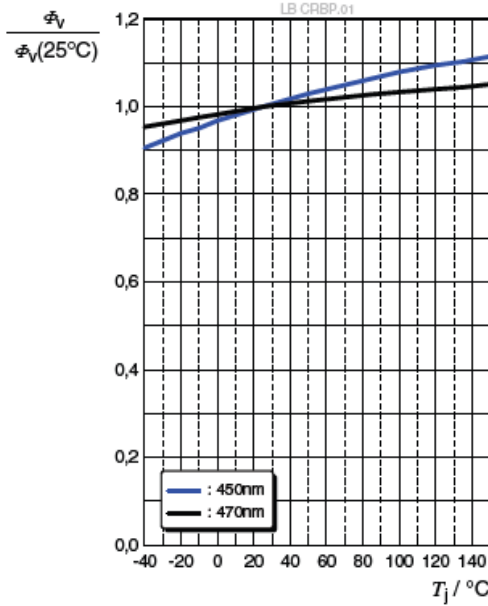
Item	Current status	New status
7.	<p><b>Forward Voltage</b> <sup>6)</sup></p> <p><math>\Delta V_F = V_F - V_F(25\text{ °C}) = f(T_j); I_F = 350\text{ mA}</math></p> <p>LB CRBP.01</p> 	<p><b>Forward Voltage</b> <sup>6)</sup></p> <p><math>\Delta V_F = V_F - V_F(25\text{ °C}) = f(T_j); I_F = 350\text{ mA}</math></p> <p>LB CRBP.01</p> 



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## Introduction of new chip generation for OSOLON Signal device LB CRBP.01

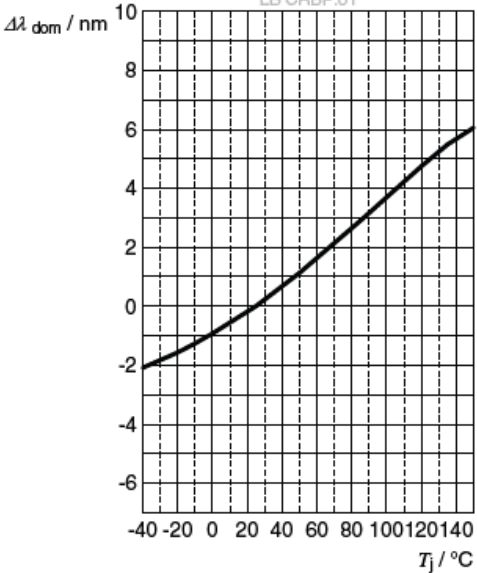
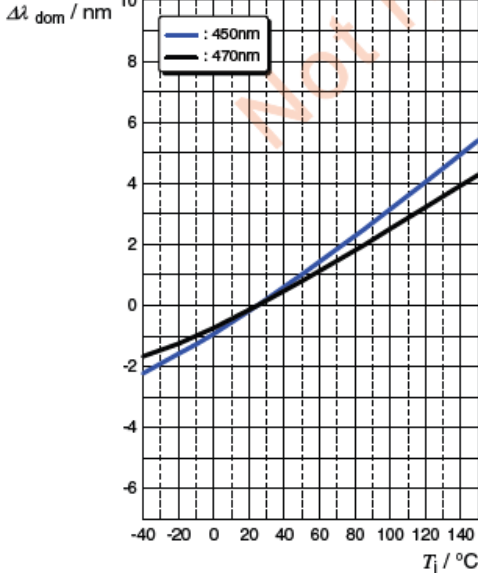
### Changes in the datasheets

Item	Current status	New status
8.	<p><b>Relative Luminous Flux</b> <sup>6)</sup></p> <p><math>\Phi_v/\Phi_v(25\text{ °C}) = f(T_j); I_F = 350\text{ mA}</math></p> 	<p><b>Relative Luminous Flux</b> <sup>6)</sup></p> <p><math>\Phi_v/\Phi_v(25\text{ °C}) = f(T_j); I_F = 350\text{ mA}</math></p> 

# AO-PCN-2024-031-A

## Introduction of new chip generation for OSOLON Signal device LB CRBP.01

### Changes in the datasheets

Item	Current status	New status
9.	<div><p><b>Dominant Wavelength</b> <sup>6)</sup></p><p><math>\Delta\lambda_{\text{dom}} = \lambda_{\text{dom}} - \lambda_{\text{dom}}(25\text{ °C}) = f(T_j); I_F = 350\text{ mA}</math></p><p>LB CRBP.01</p></div>	<div><p><b>Dominant Wavelength</b> <sup>6)</sup></p><p><math>\Delta\lambda_{\text{dom}} = \lambda_{\text{dom}} - \lambda_{\text{dom}}(25\text{ °C}) = f(T_j); I_F = 350\text{ mA}</math></p><p>LB CRBP.01</p></div>

# AO-PCN-2024-031-A

## Introduction of new chip generation for OSLON Signal device LB CRBP.01

**Changes in the datasheets:** Updated Datasheet Version .

Product type	Data sheet version <u>before</u> IN	Data sheet version <u>after</u> IN
LB CRBP.01	1.2	1.4

Note:  
Version 1.2 is according to current production  
Version 1.3 includes first information of new chip generation  
Version 1.4 is based on Version 1.3 with correction.  
Latest version of data sheet will be accessible on the ams OSRAM homepage.

# AO-PCN-2024-031-A

## Introduction of new chip generation for OSOLON Signal device LB CRBP.01

### List of affected products

OSOLON Signal

LB CRBP.01



# AO-PCN-2024-031-A

## Introduction of new chip generation for OSOLON Signal device LB CRBP.01

### PCN Samples

OSOLON Signal

LB CRBP.01

Color code:  available  on request

# AO-PCN-2024-031-A

## Introduction of new chip generation for OSLON Signal device LB CRBP.01

### Time schedule

for PCN material ( <u>after</u> implementation of change):		
Final qualification report	15.10.2024	
Samples available	On request	
Intended Start of delivery	01.01.2025 *)	*) or earlier if released by customer and upon mutual agreement

for Pre-PCN material ( <u>prior to</u> implementation of change):		
Last time order date (LTO)	01.01.2025 **)	** ) Lead time and LTO quantity shall be mutually agreed between ams OSRAM and customer.
Last time delivery date (LTD)	01.04.2025 ***)	*** ) planned last date for delivery of products of current status

Note:

Pre-PCN material: Products of current status, means before implementation of the changes as described in the PCN.

PCN material: Products with implementation of the changes as described in the PCN.

Sensing is life



# Qualification Report 230043C1

Subject	Qualification report for OSOLON Signal LB CRBP.01, LCY CRBP.01 and LUW CRBP.01 according to AO-PCN-2024-031-A
Date	15.10.2024
Tested device	LUW CRBP.01
Brand (including sub brands)	OSOLON Signal
Applies to	LB CRBP.01, LCY CRBP.01, LUW CRBP.01



Pre-conditioning according to Jedec Level 2

Test Performed		Condition	Duration	Sample Size	Failures		
					El.	Opt.	Vis
Low Temperature Operating Life	LTOL	T <sub>A</sub> = -40°C	1000h	4x30	0	0	0
		I <sub>F</sub> = 1200mA					
	JESD22-A108						
High Temperature Operating Life	HTOL	T <sub>A</sub> = 100°C	1000h	4x30	0	0	0
		I <sub>F</sub> = 1200mA					
	JESD22-A108						
Wet High Temperature Operating Life	WHTOL	T <sub>A</sub> = 60°C	1000h	4x30	0	0	0
		r.H.= 93%					
	JESD22-A101	I <sub>F</sub> = 30mA					
Wet High Temperature Operating Life	WHTOL	T <sub>A</sub> = 60°C	1000h	4x30	0	0	0
		r.H.= 93%					
	JESD22-A101	I <sub>F</sub> = 1200mA					
Pulse life test	PLT	T <sub>A</sub> = 25°C	1000h	4x30	0	0	0
		I <sub>F</sub> = 2000mA					
	JESD22-A108	t <sub>p</sub> = 0.1ms; D = 3%					
Temperature cycle	TC	T <sub>A</sub> = -40°C/+125°C	1000h	4x30	0	0	0
		15min each extreme					
	JESD22-A104						
Electrostatic Discharge	HBM	Human Body Model	1000h	4x30	0	0	0
	ANSI/ESDA/ JEDEC JS-001						
Gas corrosion test		T <sub>A</sub> = 25°C	500h	4x30	0	0	0
		r.H.= 75%					
	IEC 60068-2-60	Methode 4					
Damp heat cyclic		T <sub>A,min</sub> = 25°C; T <sub>A,max</sub> = 65°C	10c	4x30	0	0	0
		r.H.= 90%					
	IEC 60068-2-30	I <sub>F</sub> = 30mA					

**Note:** Lot A-C evaluation lot, Lot D control lot

Failure criteria:

Electrical failures:	V <sub>f</sub> (I <sub>f</sub> =350mA)	> 3.25V; ± 10% from initial value
Optical failures:	Φ <sub>v</sub> (I <sub>f</sub> =350mA)	> ± 30% from initial value
	C <sub>x</sub> /C <sub>y</sub> (I <sub>f</sub> =350mA)	± 0.01 from initial value
Visual failures:	acc JEDEC JESD22-B101	

**Conclusion: The tested device fulfills the reliability requirements.**

## Disclaimer

PLEASE CAREFULLY READ THE BELOW TERMS AND CONDITIONS BEFORE USING THE INFORMATION.  
IF YOU DO NOT AGREE WITH ANY OF THESE TERMS AND CONDITIONS, DO NOT USE THE INFORMATION.

The Information contained in this Document does not constitute an independent warranty. The committed behavior is described in the Product data sheet and/or further, mutually agreed specifications.

Distribution of part or all of the contents of this Document to any 3rd party in any form without the prior permission of ams-OSRAM International GmbH is prohibited except in accordance with applicable mandatory law.

Further explanations:

Data: The Data used in this Document consider the reliability test results under the mentioned driving conditions only. For Product information on the maximum operating conditions and the OSRAM standard qualification profile please refer to the Product data sheet or contact your local sales partner.

Conditions: The conditions for the generation of the Data are as follows:

1. The Data and curves shown in this Document are based on experiments carried out under laboratory conditions on a random sample size of LED/IRED/Laser/Detector with readouts at discrete readout times (where applicable). Thus, the Data above represent a limited number of production lots only and may differ between different assembly lots over time (including chip or package changes). Thus, the behavior of the LED/IRED/Laser/Detector in the final application may differ from the Data. The behavior of the LED/IRED/Laser/Detector at conditions or readout times deviating from those stated above may not be deduced from the Data.

2. If applicable:

a) Extended driving conditions:

The tested driving conditions exceed the maximum limits stated in the Product data sheet. Therefore, a reduced lifetime or an accelerated degradation is expected. Failure limits noted in the Document refer to the testing condition according to the OSRAM standard Product qualification profile and not to the actual testing condition.

b) Extended testing duration:

The testing duration exceed the OSRAM standard qualification profile of the mentioned Product. Failure limits noted in the Document refer to the testing duration according to the OSRAM standard Product qualification profile and not to the actual testing duration.

c) Exceeding standard qualification conditions – (Product data sheet limits not affected):

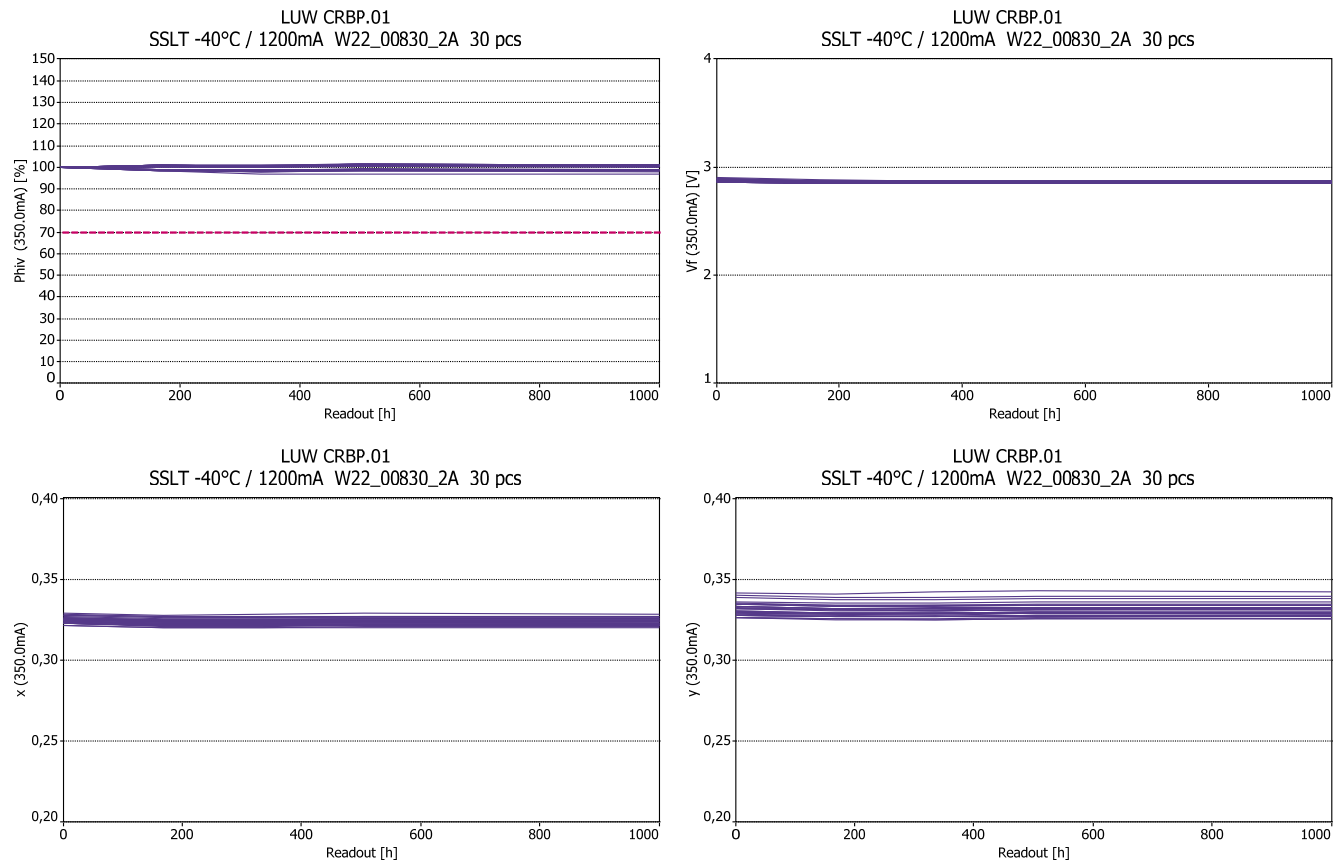
The tested driving conditions exceed the OSRAM standard qualification profile of the mentioned Product. Therefore a reduced lifetime or an accelerated degradation is expected. Failure limits noted in the Document refer to the testing condition according to the OSRAM standard Product qualification profile and not to the actual testing condition.

3. For long term operation additional failure modes of the chip or package can occur which are not shown in this Document.

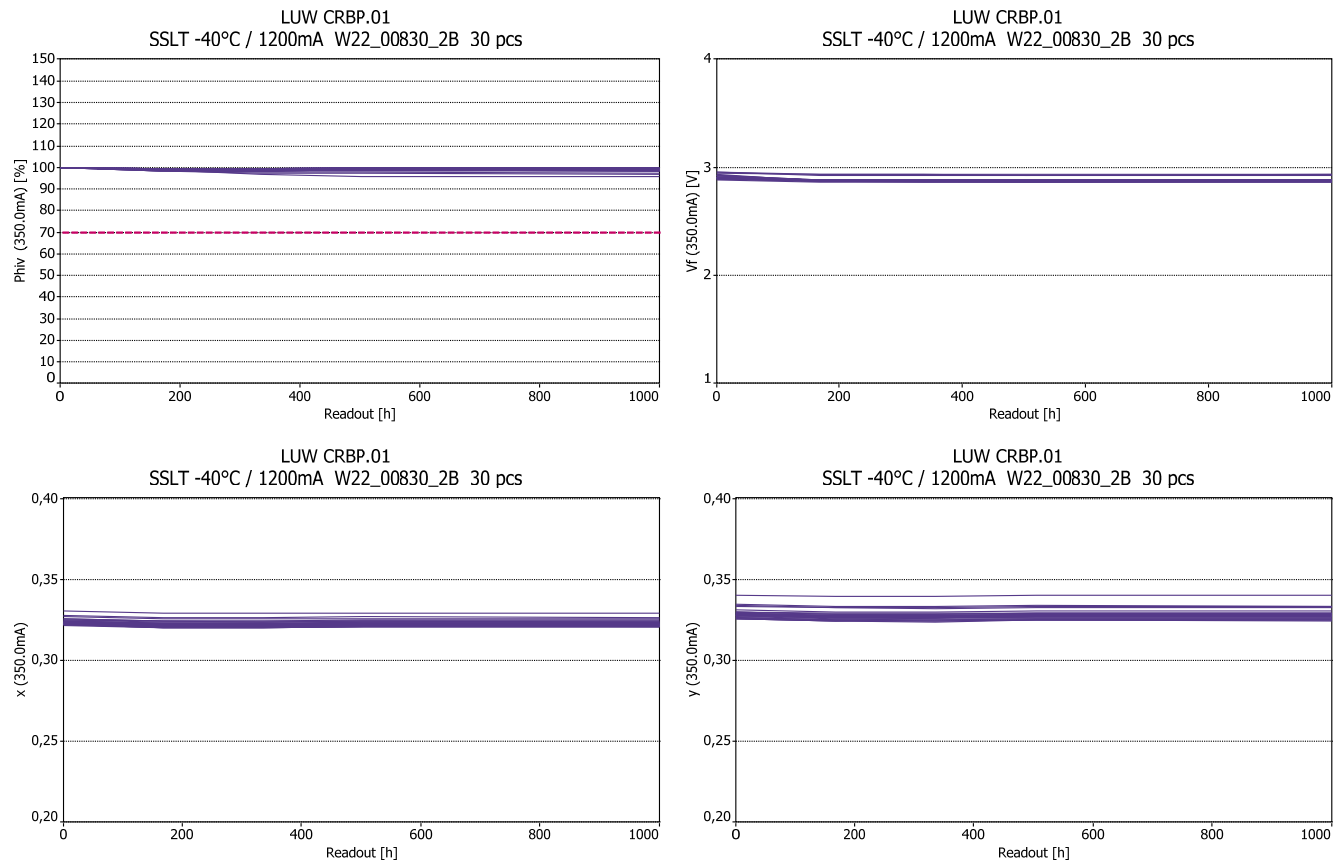
4. Possible differences in the thermal management of OSRAM and customer's setup may lead to a different aging behavior.

LTOL -40°C / 1200mA

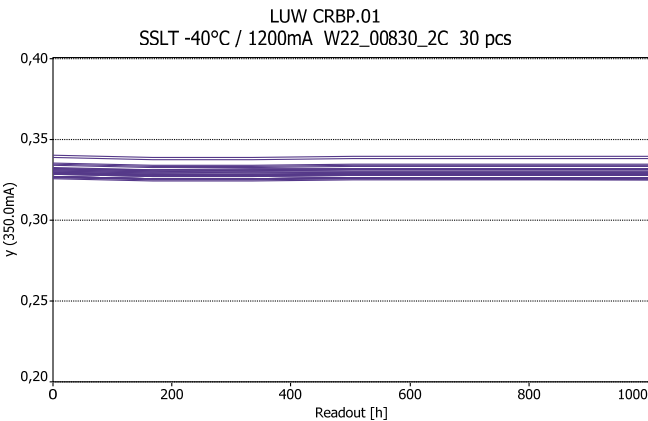
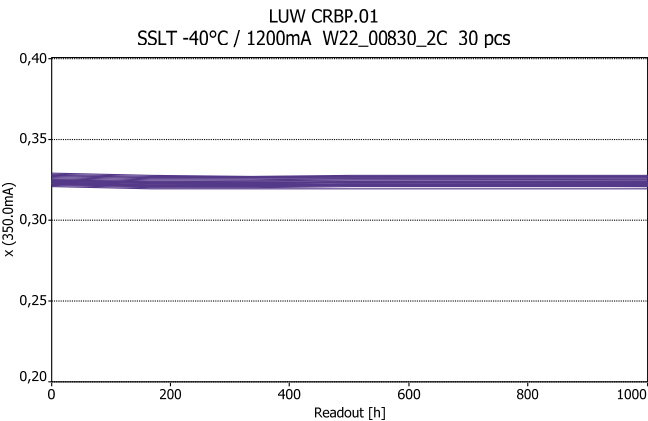
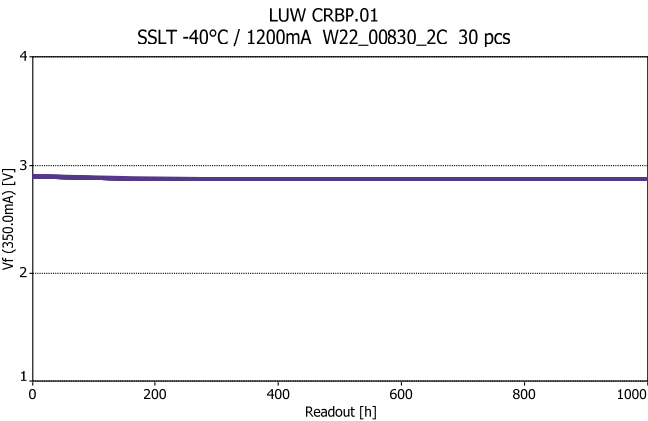
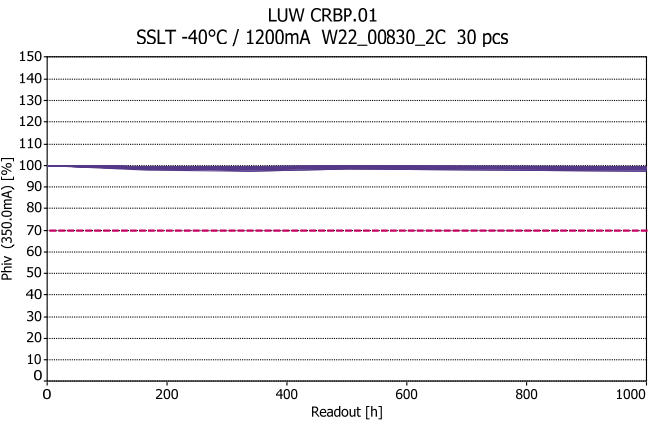
Lot A



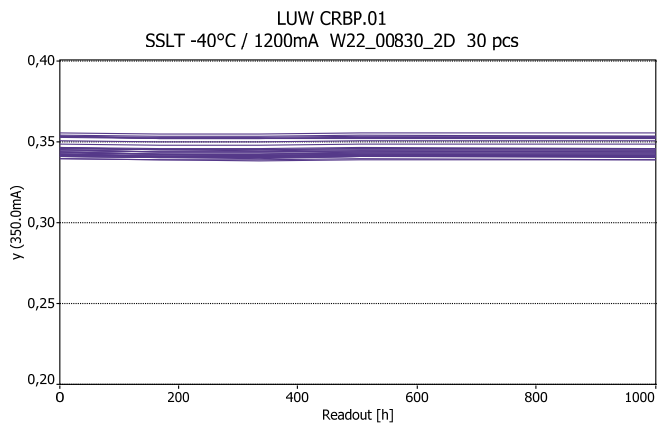
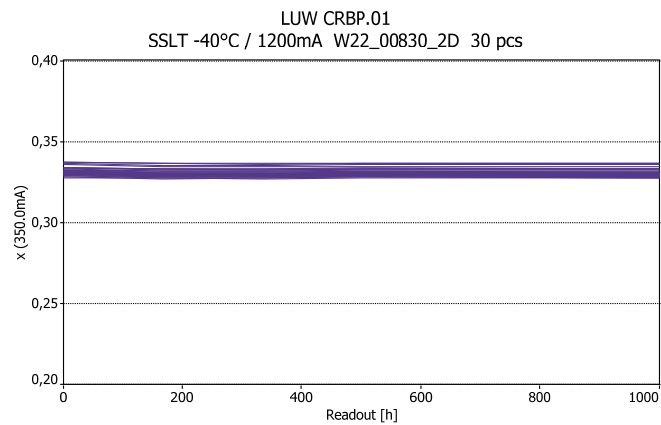
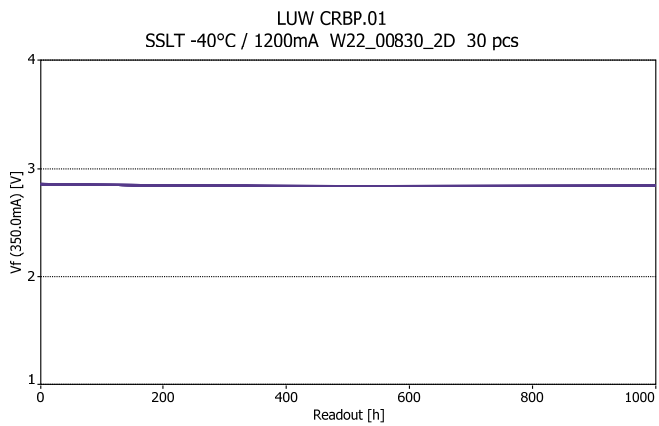
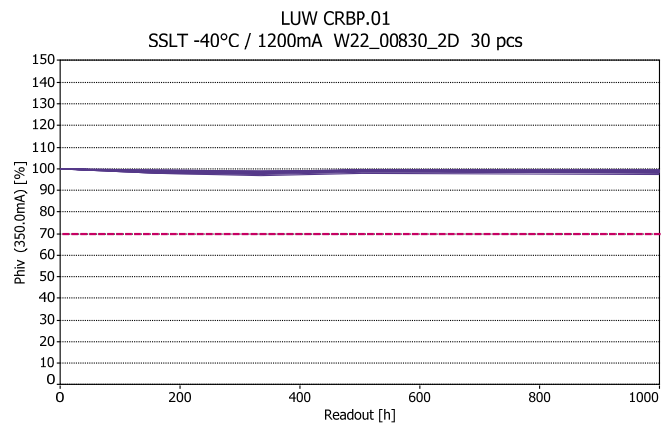
Lot B



Lot C

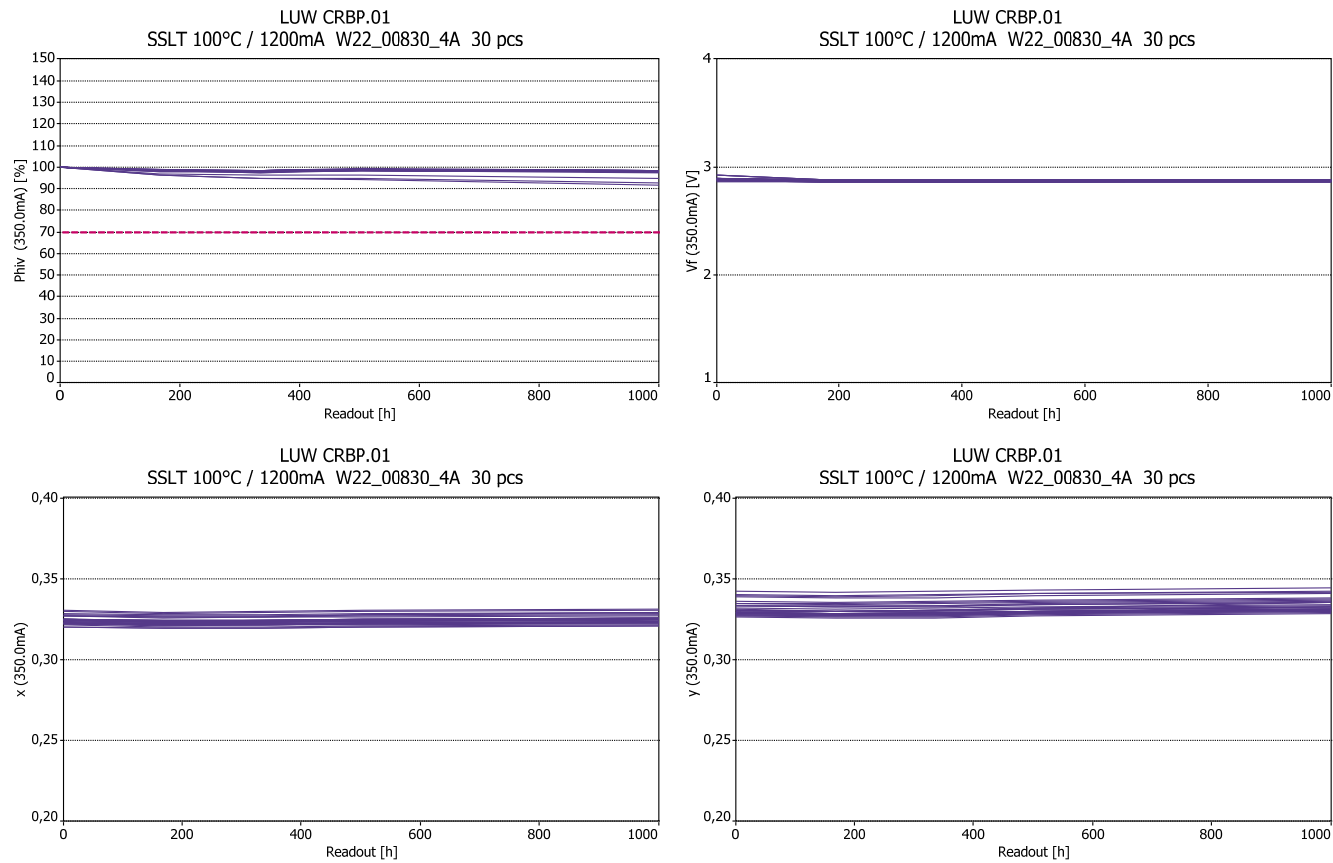


Lot D



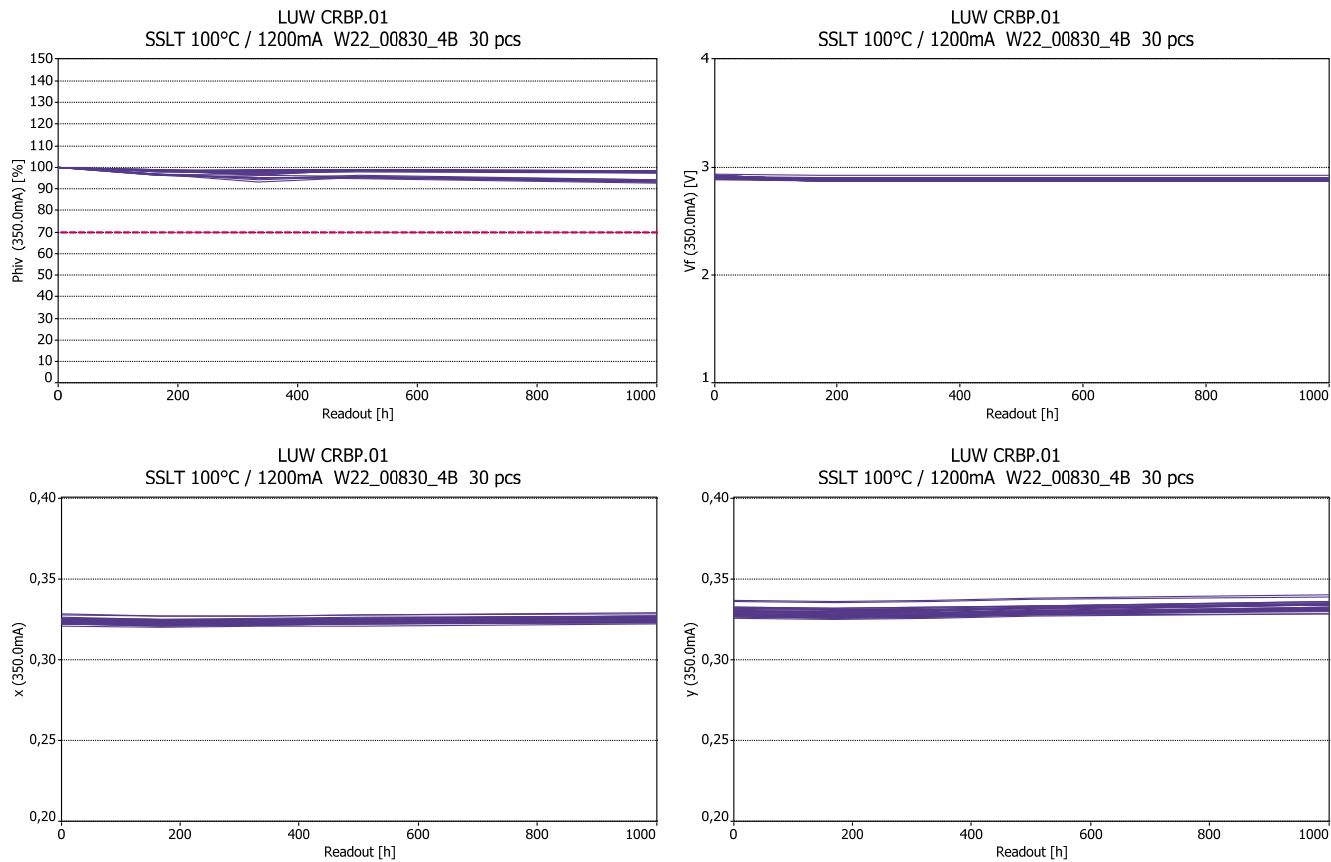
HTOL 100°C / 1200mA

Lot A

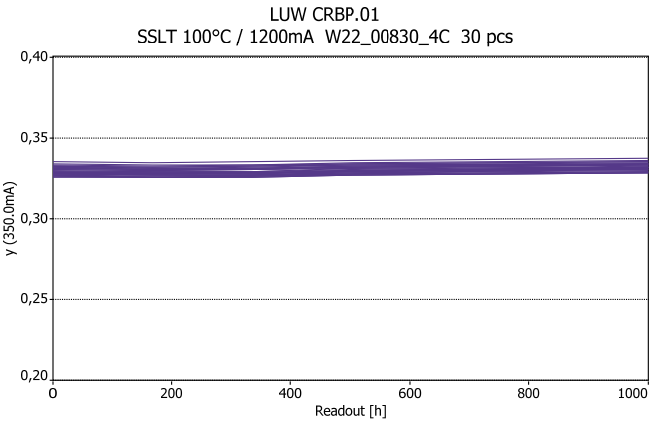
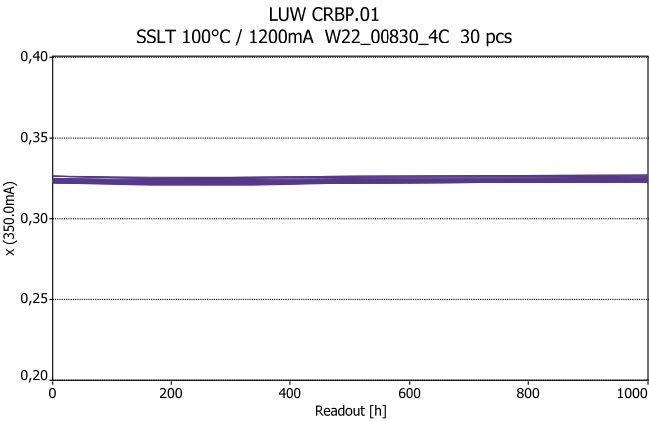
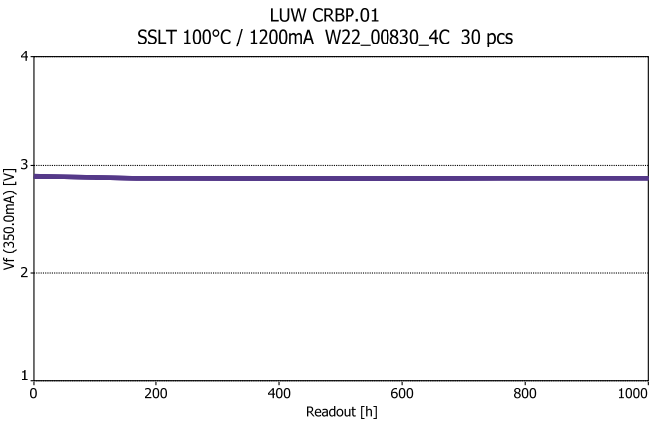
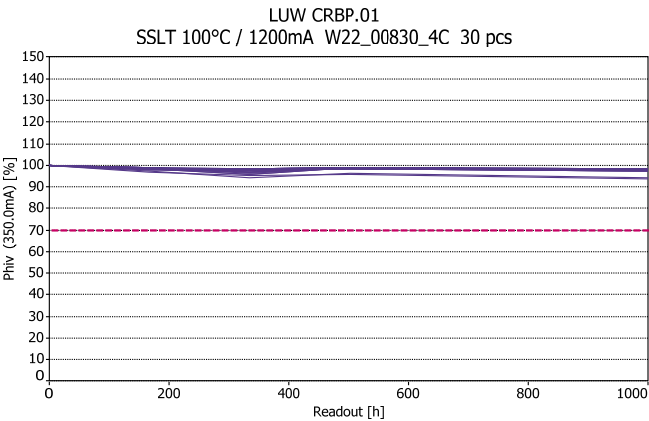




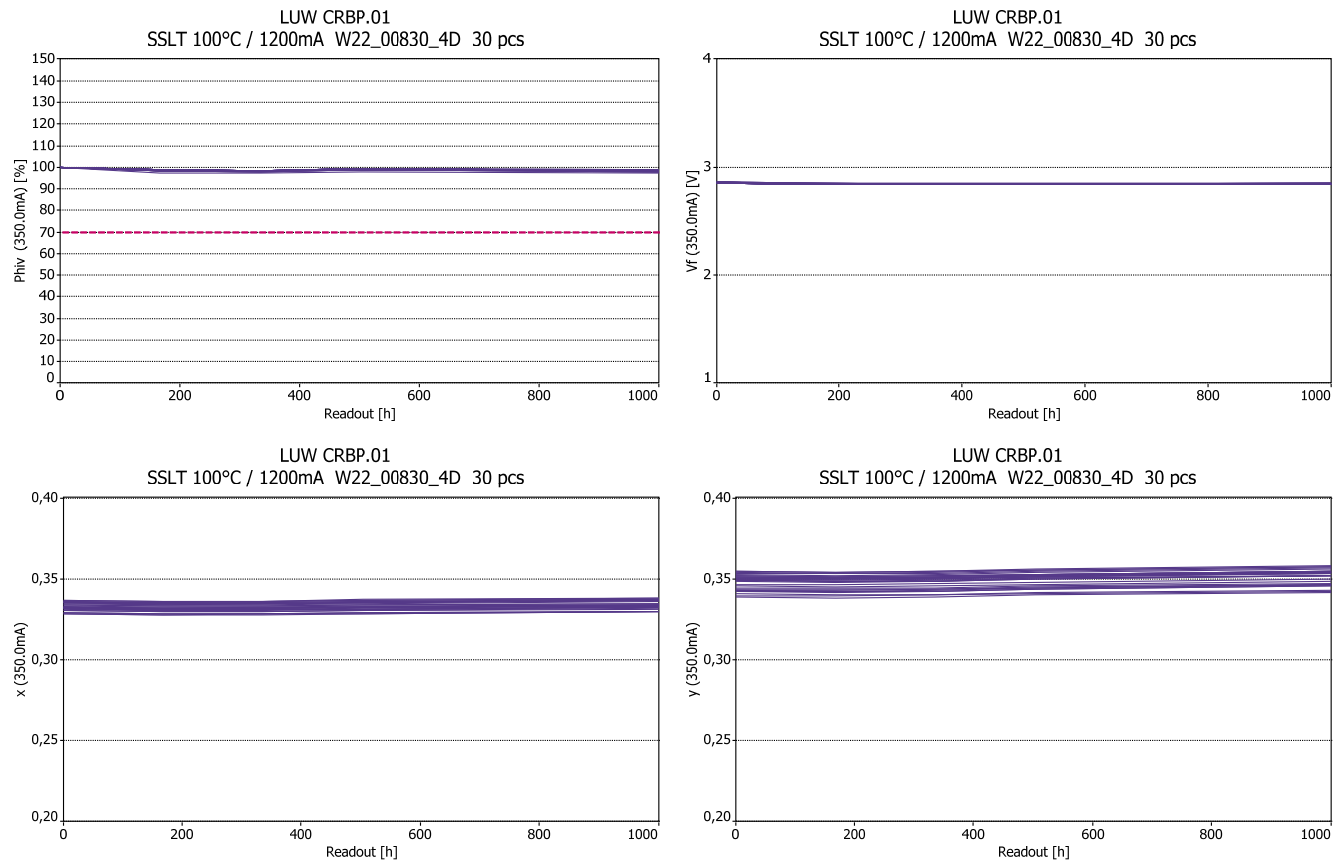
Lot B



Lot C

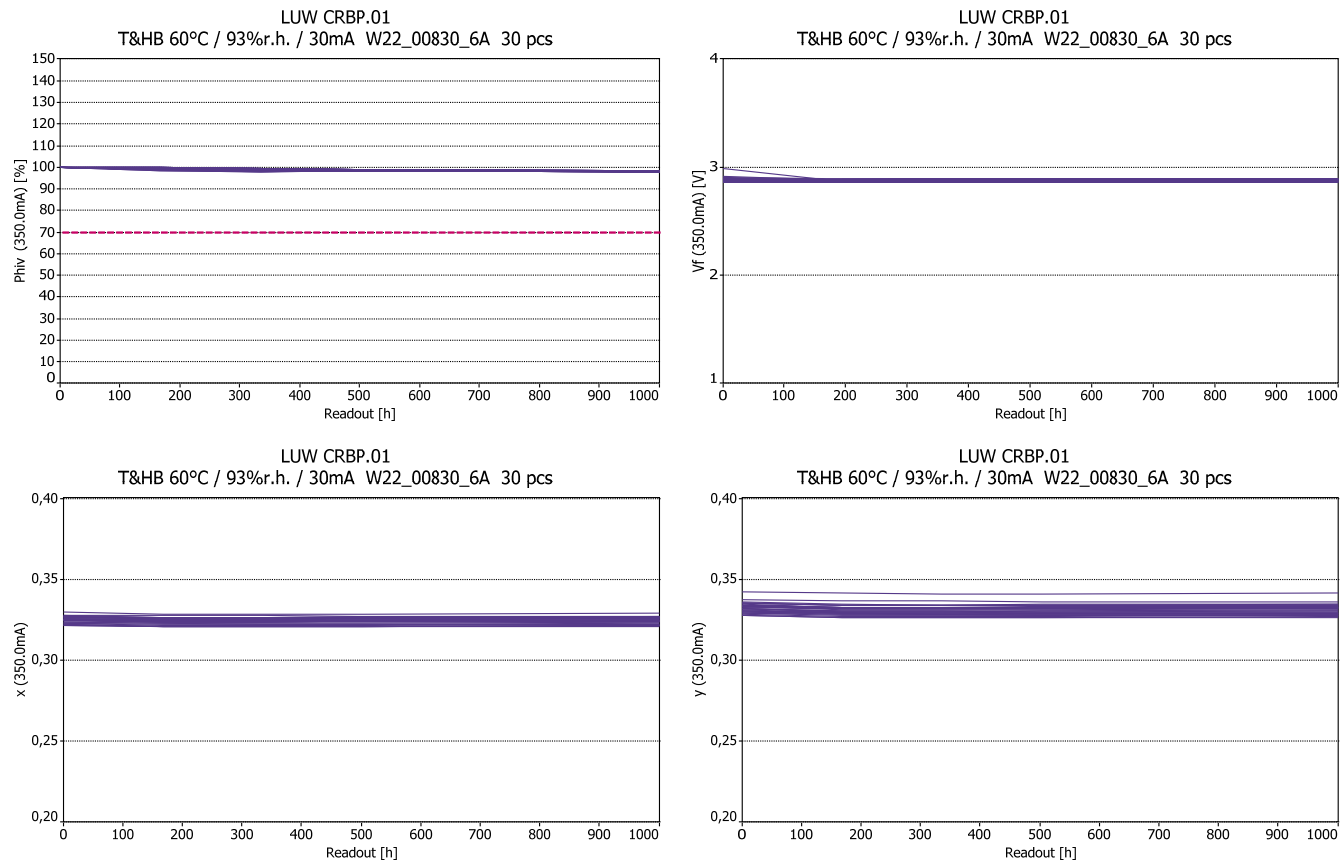


Lot D

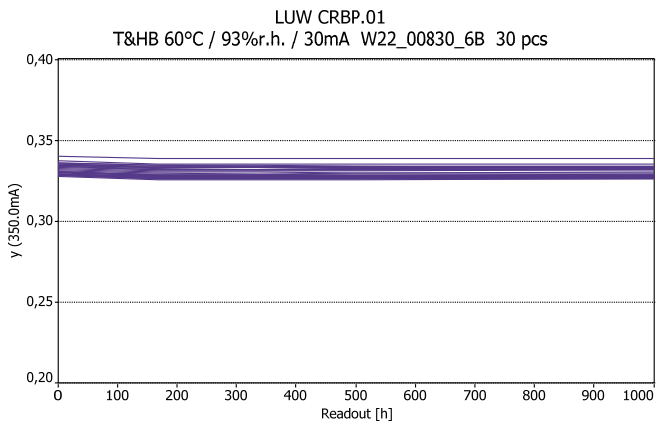
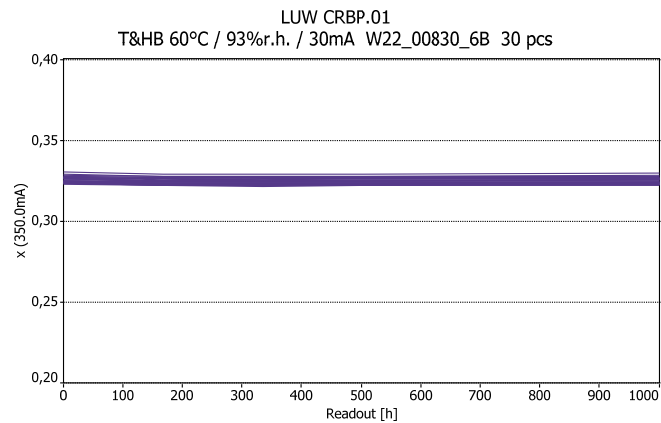
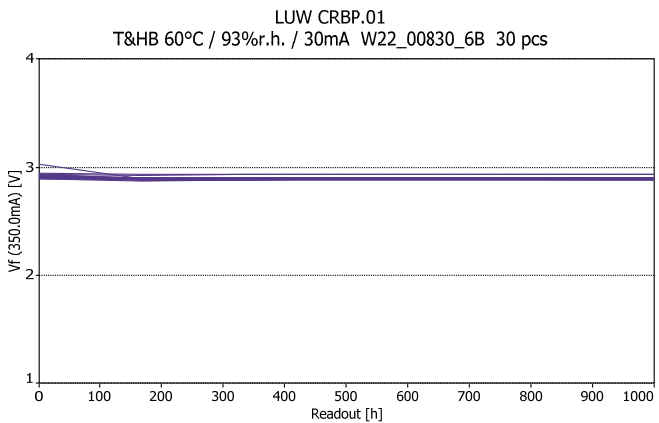
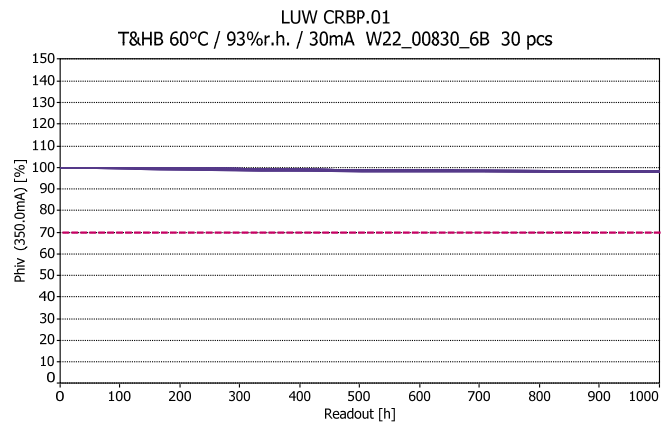


WHTOL 60°C / 93%r.h. / 30mA

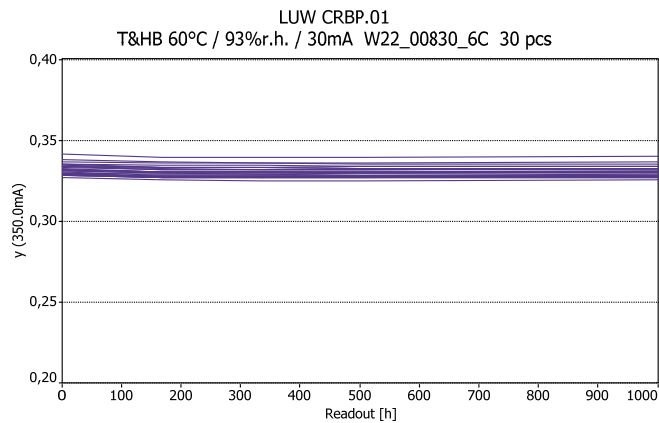
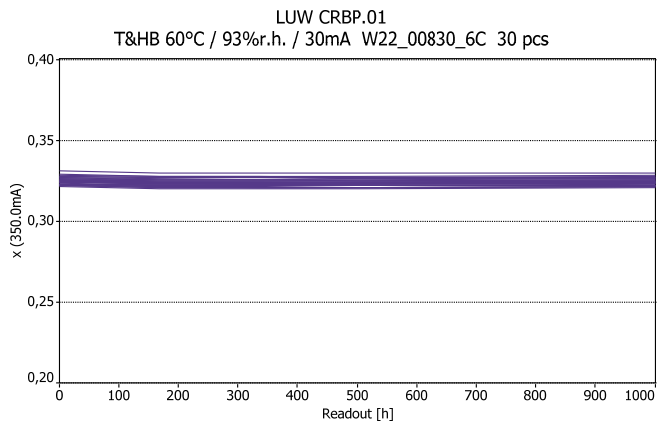
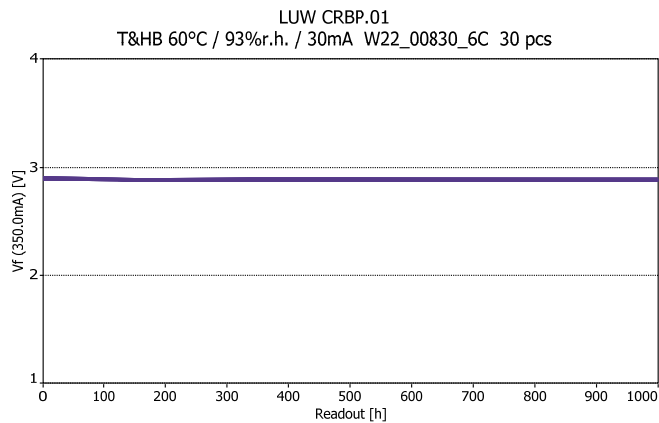
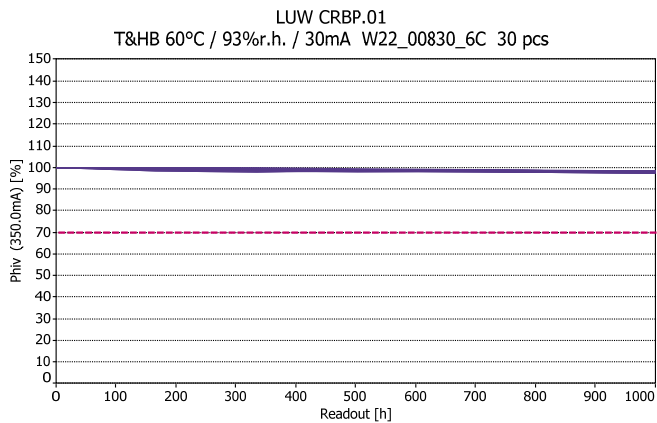
Lot A



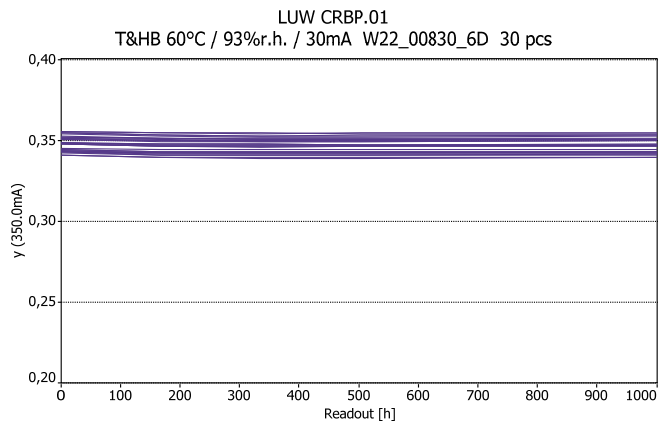
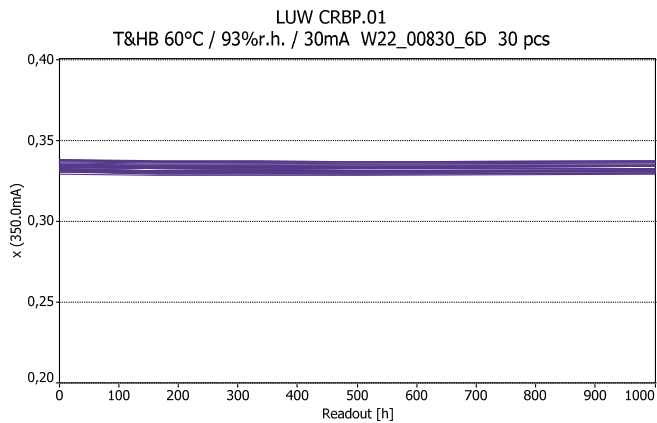
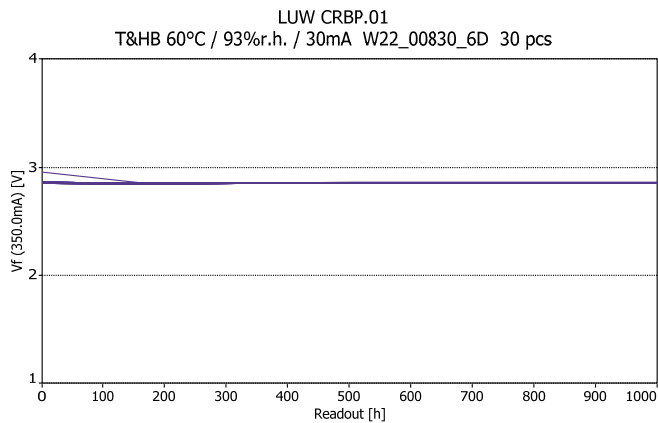
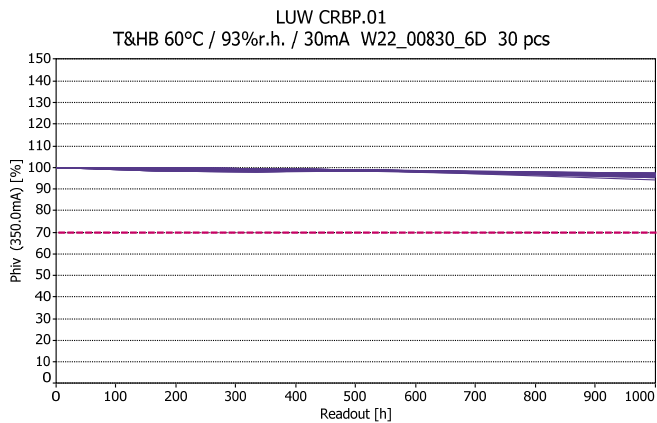
Lot B



Lot C

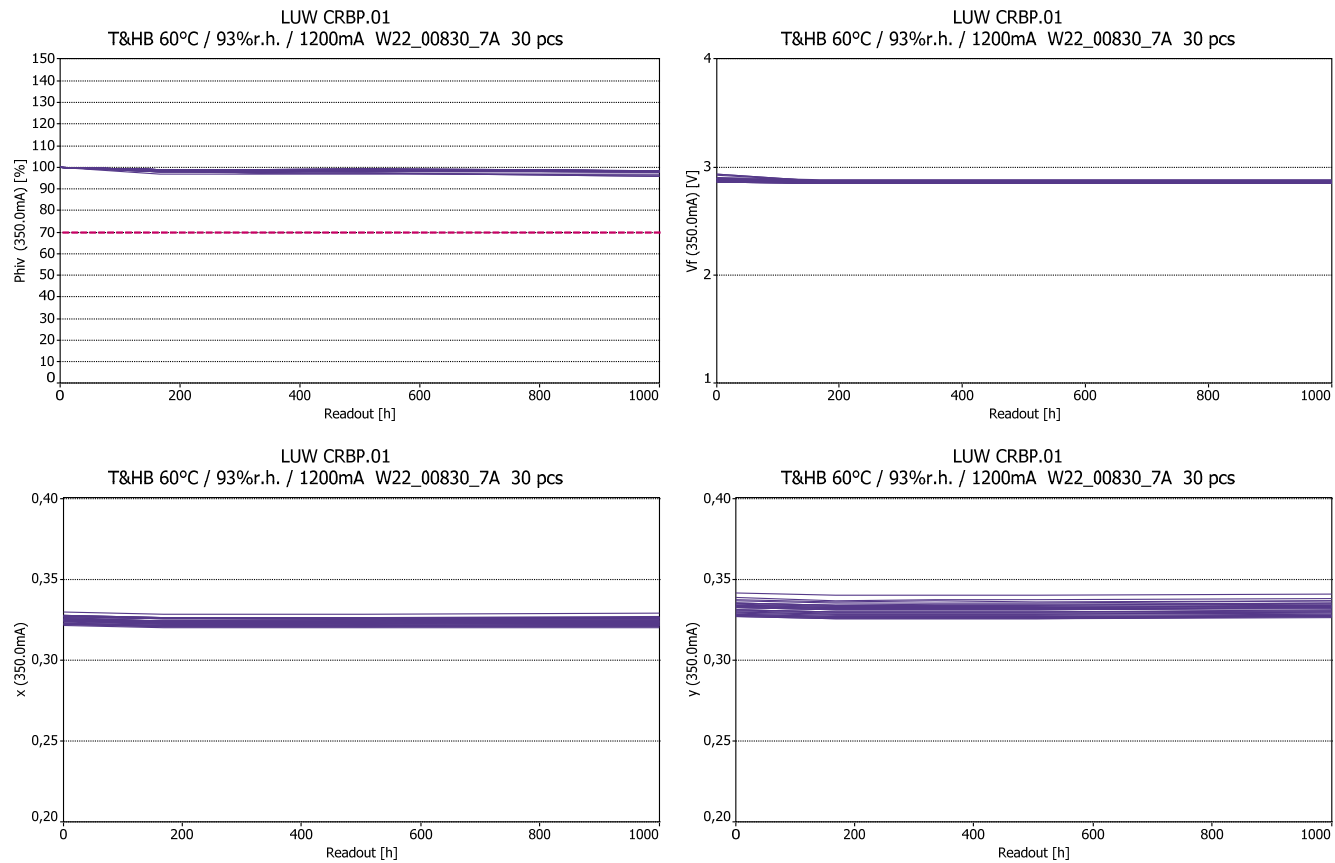


Lot D



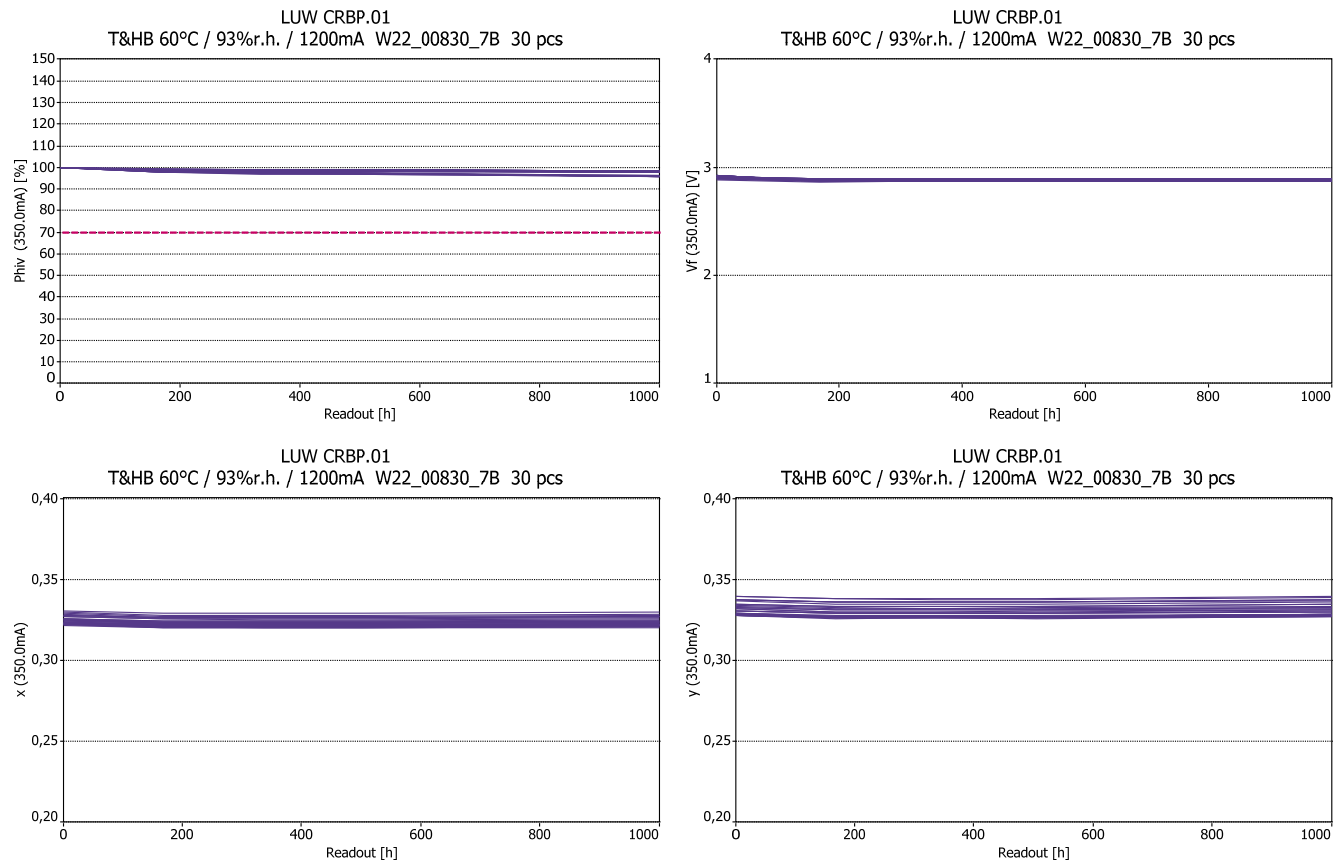
WHTOL 60°C / 93%r.h. / 1200mA

Lot A

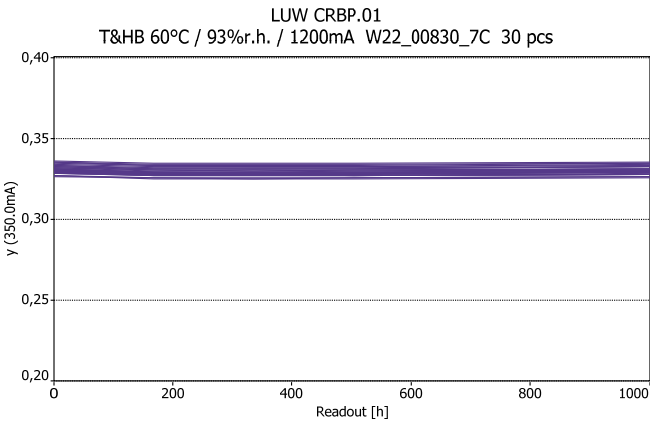
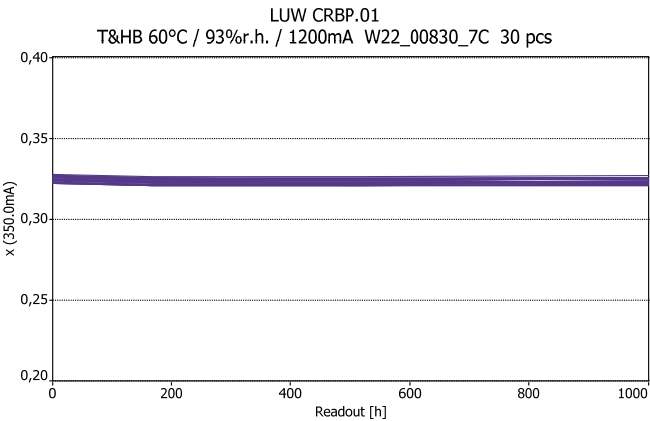
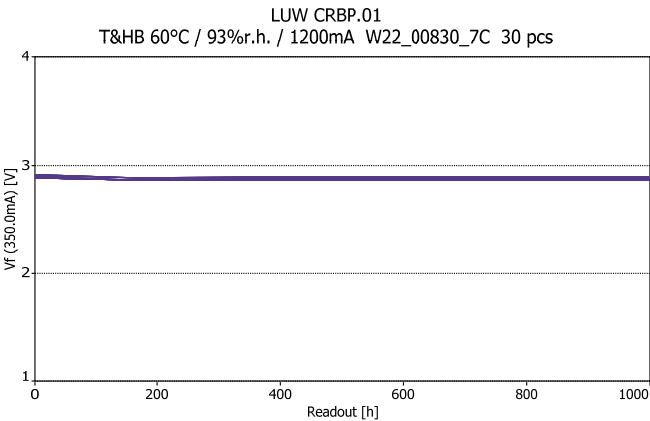
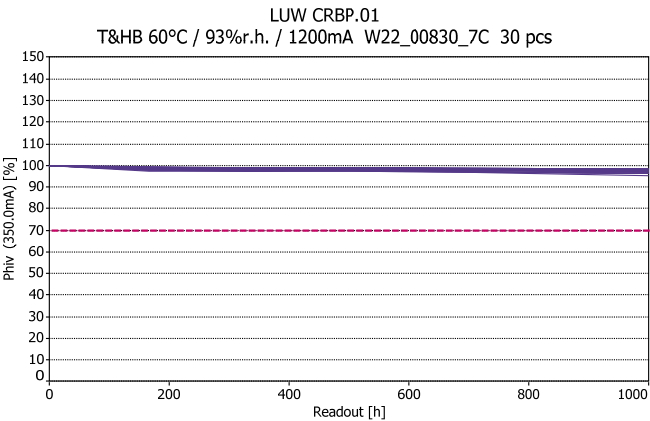




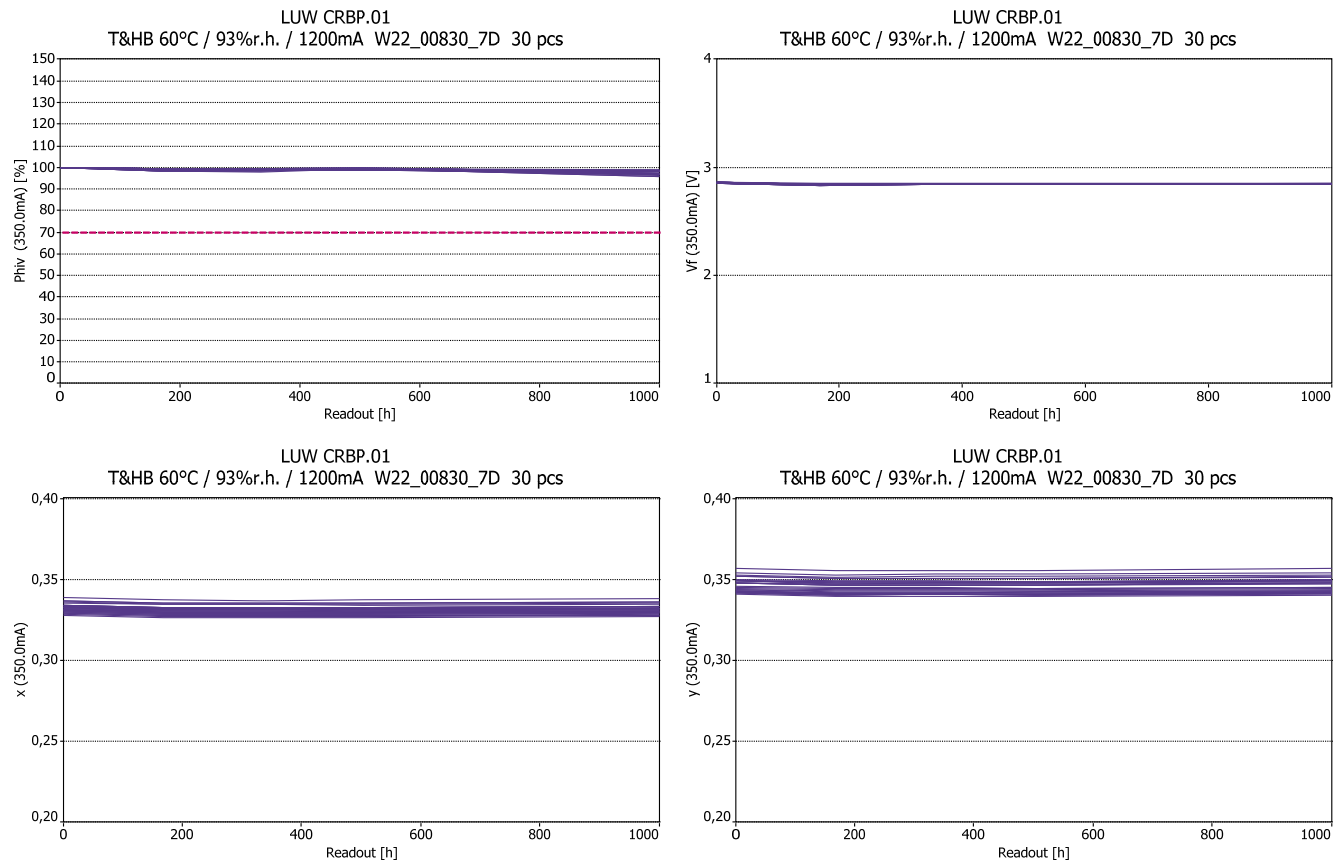
Lot B



Lot C

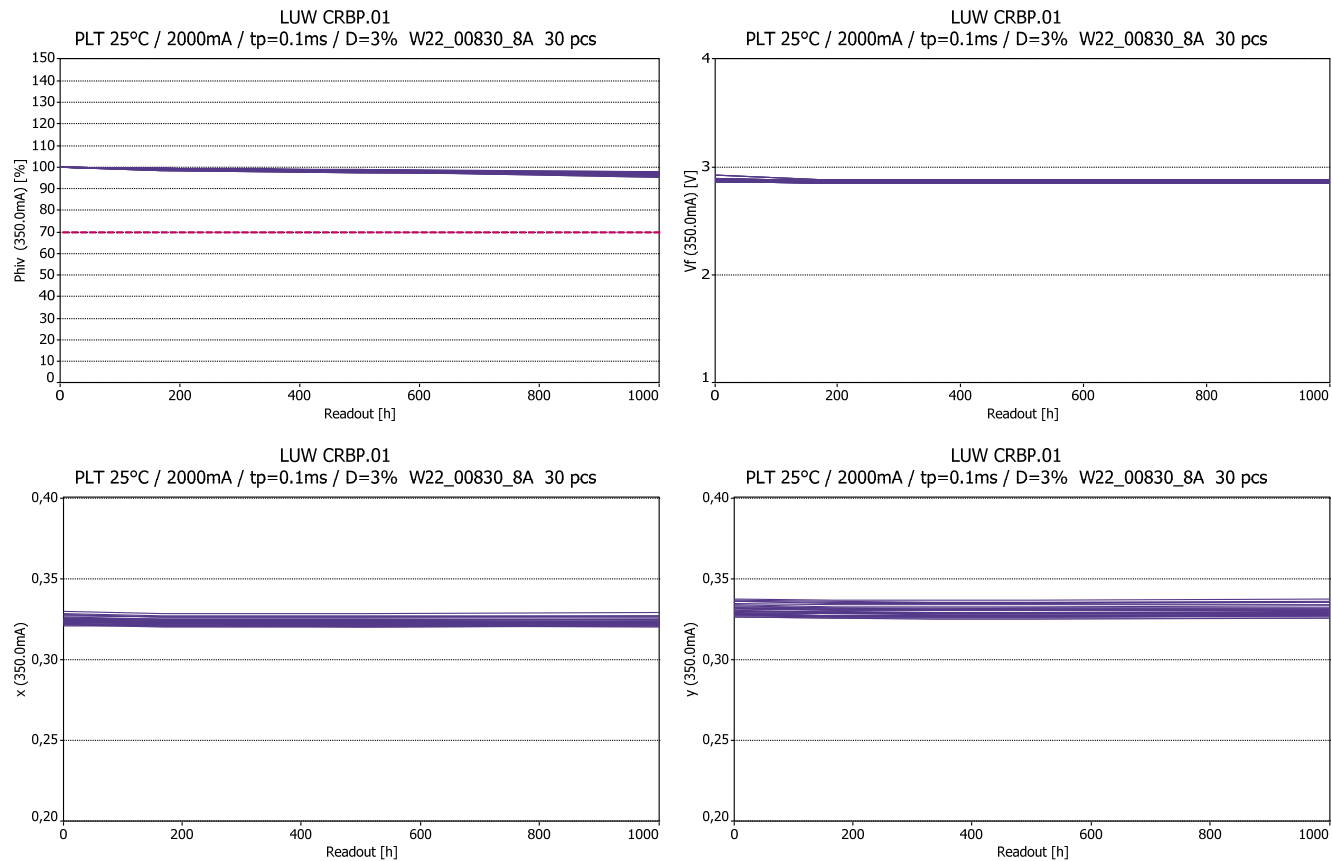


Lot D

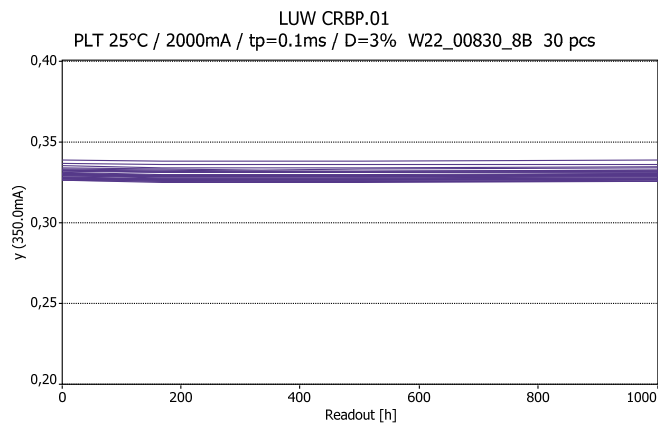
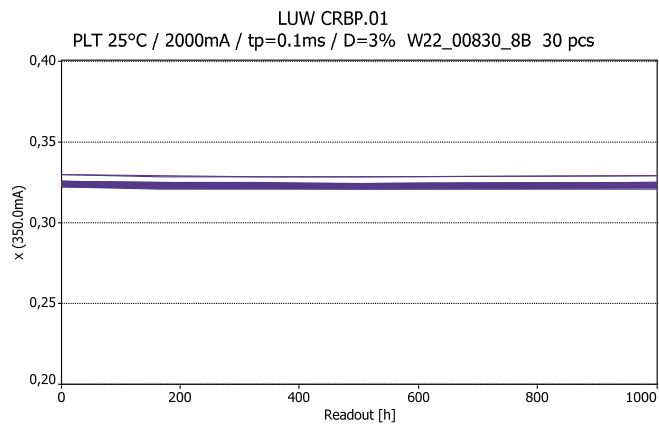
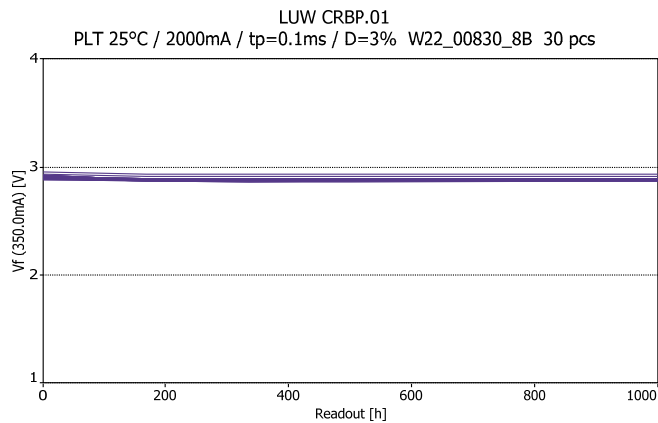
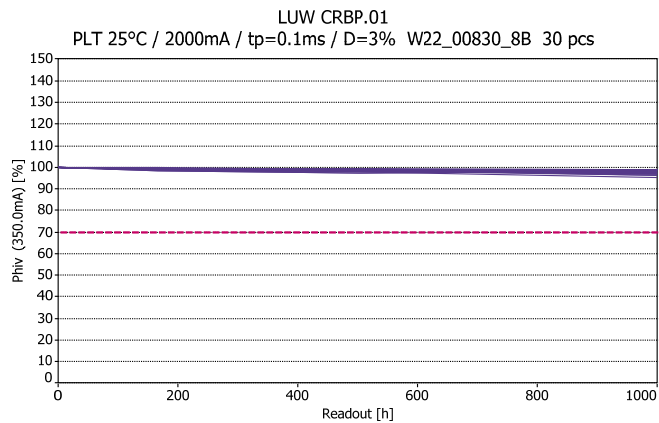


PLT 25°C / 2000mA / tp=0.1ms / D=3%

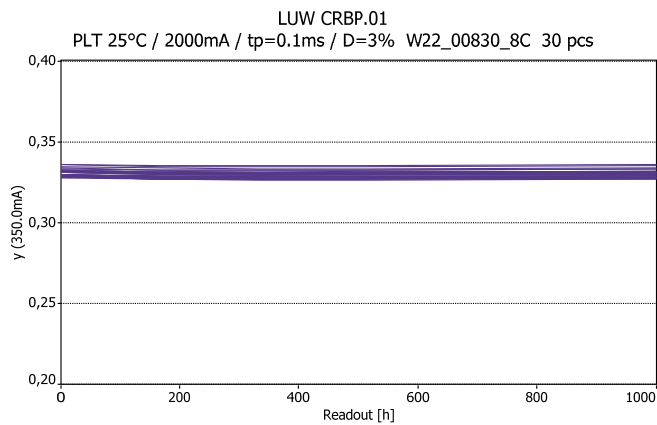
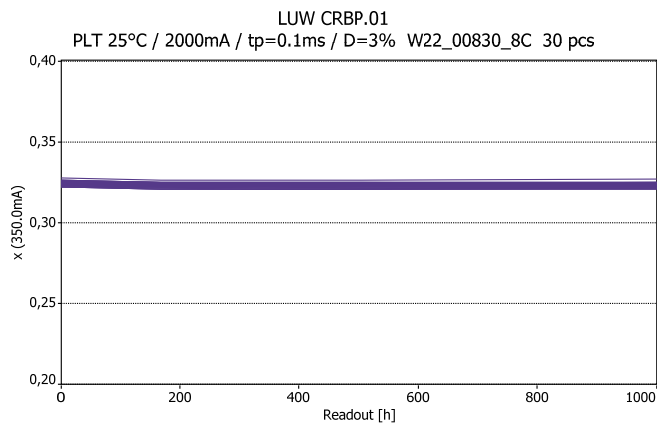
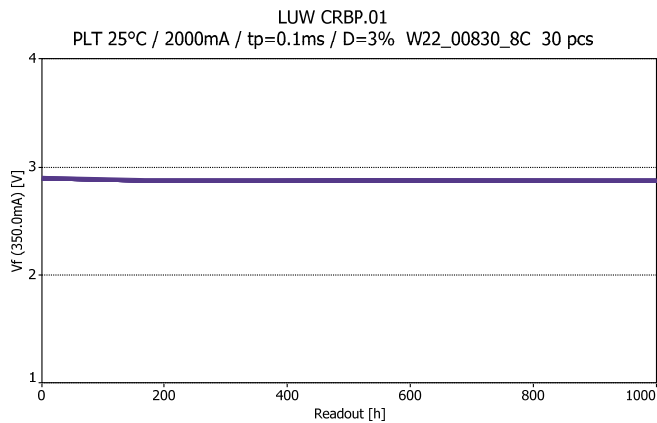
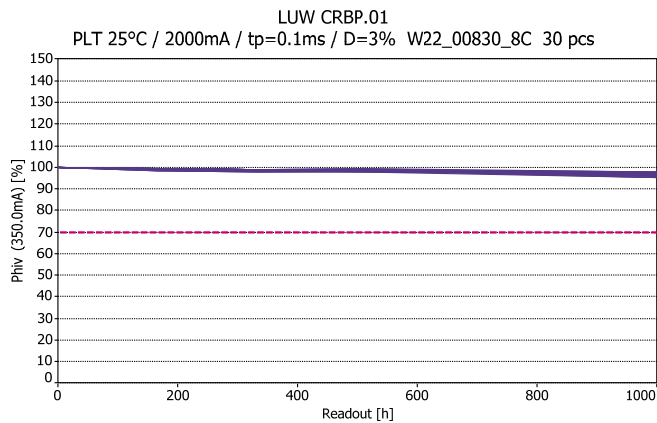
Lot A



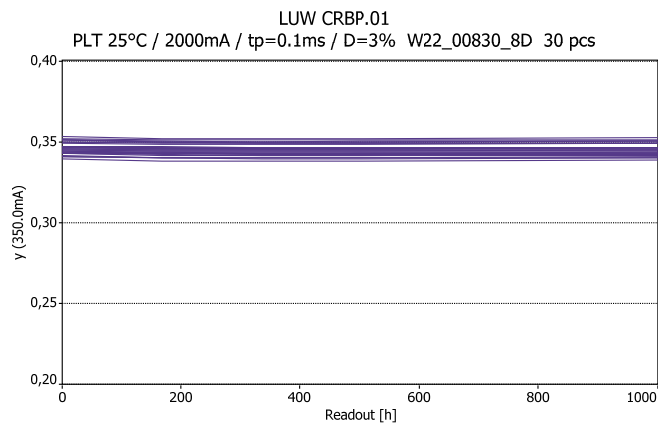
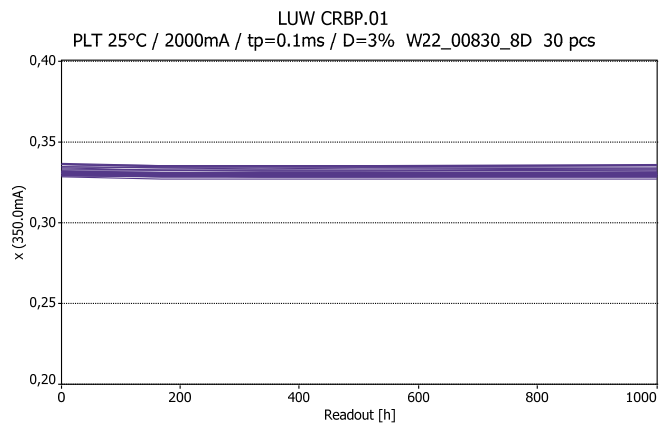
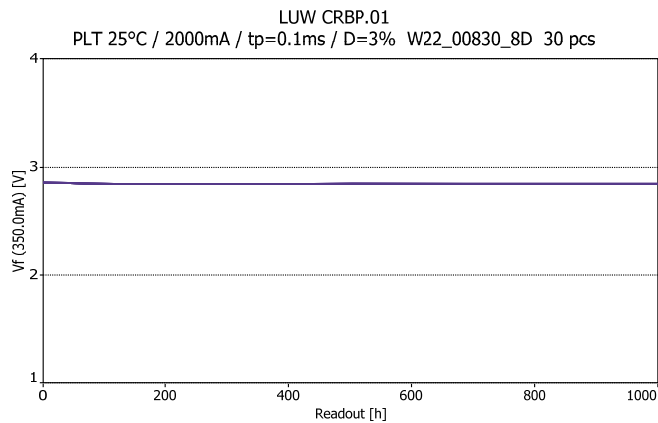
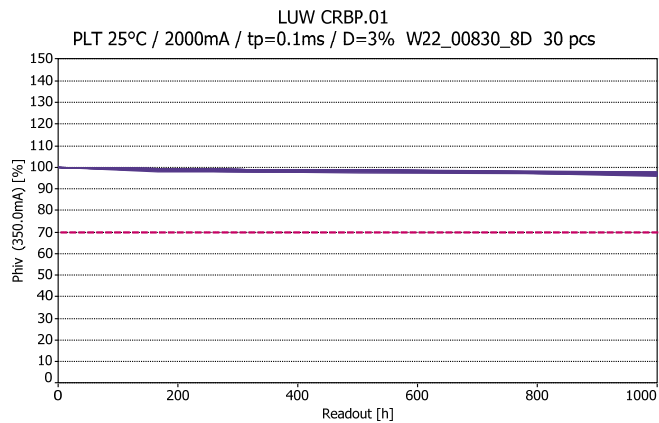
Lot B



Lot C

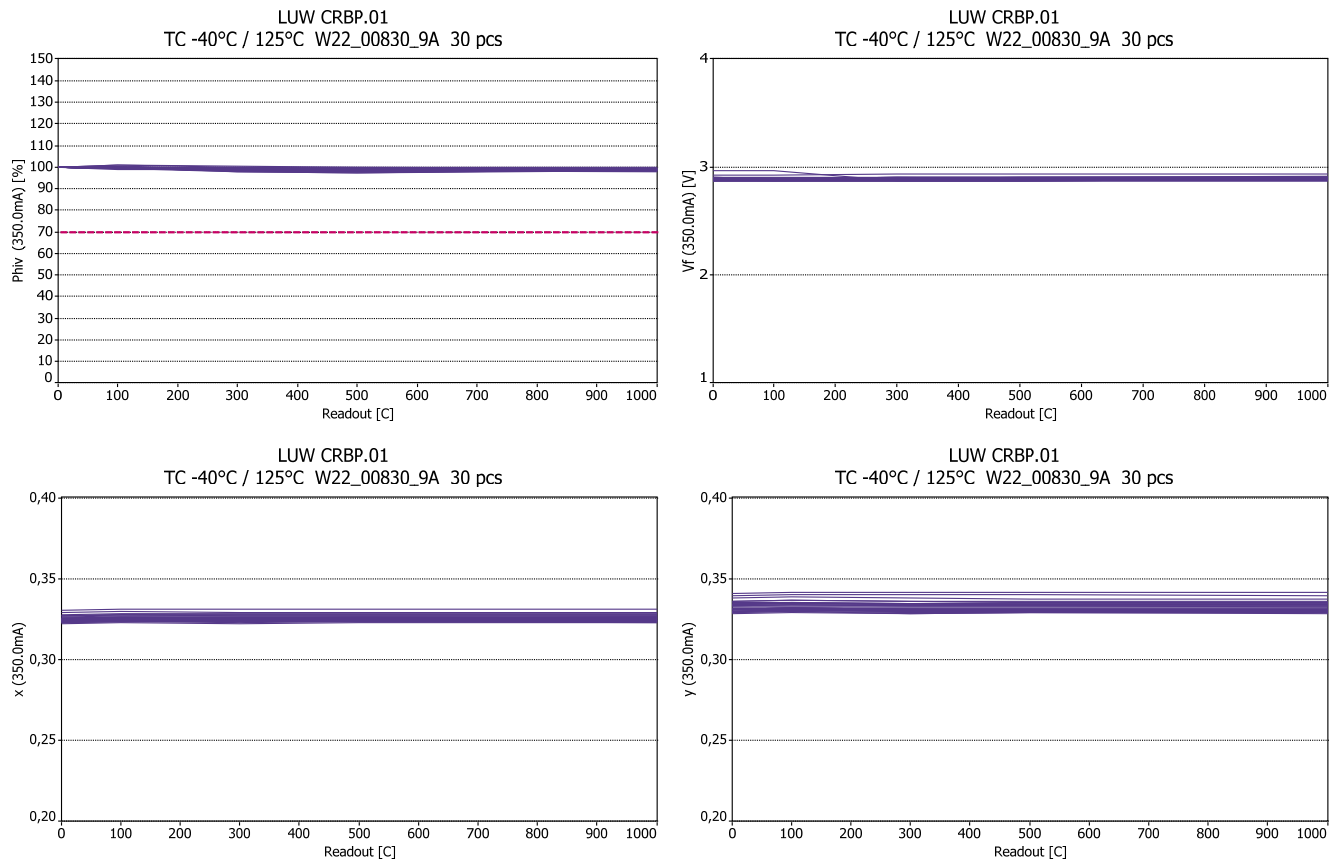


Lot D



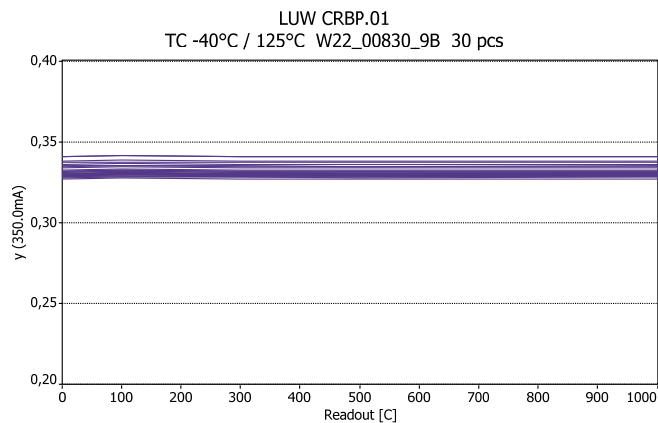
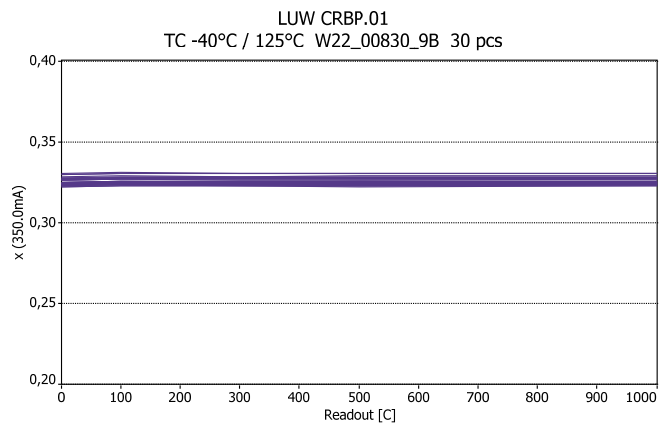
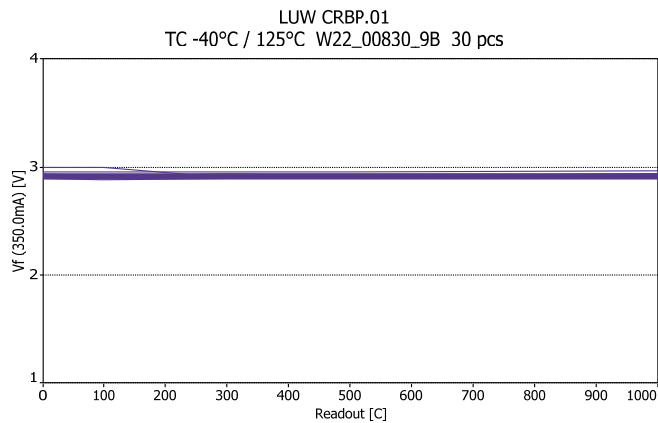
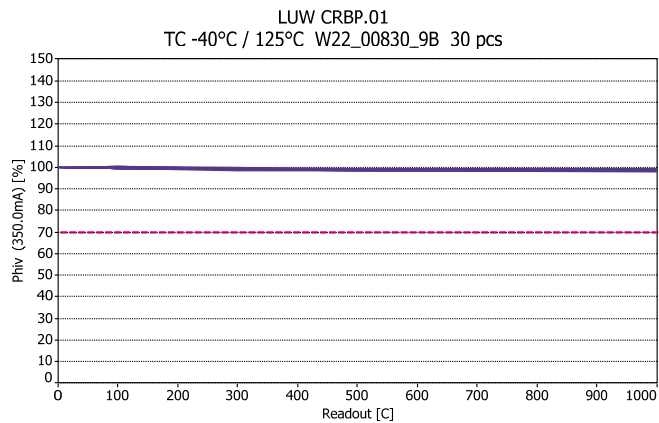
TC -40°C / 125°C

Lot A

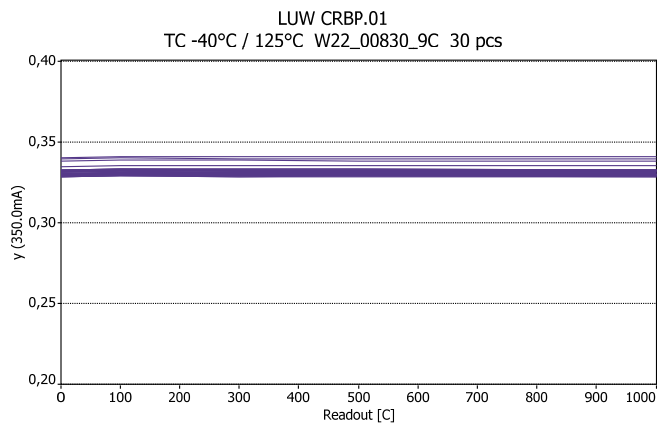
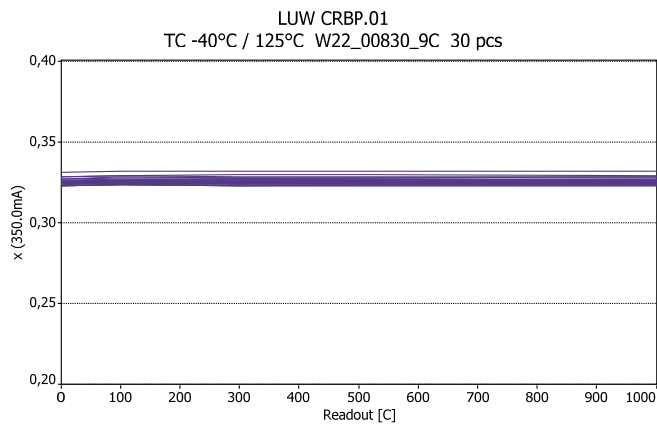
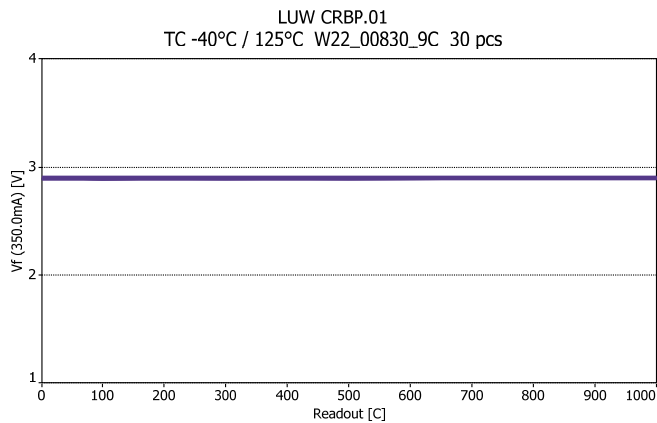
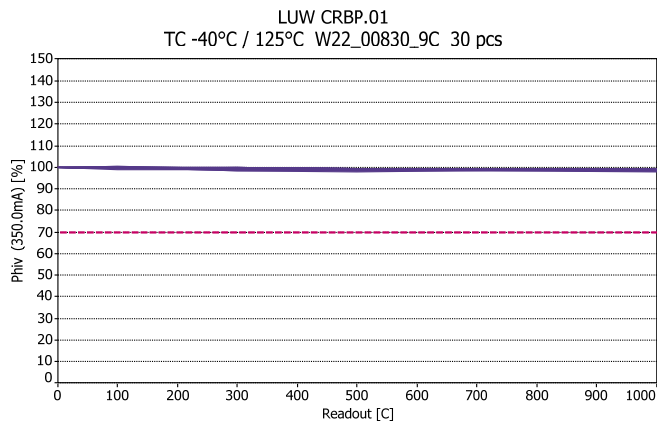




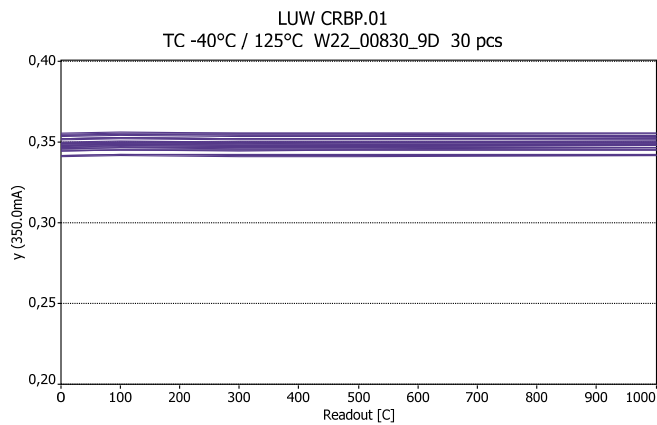
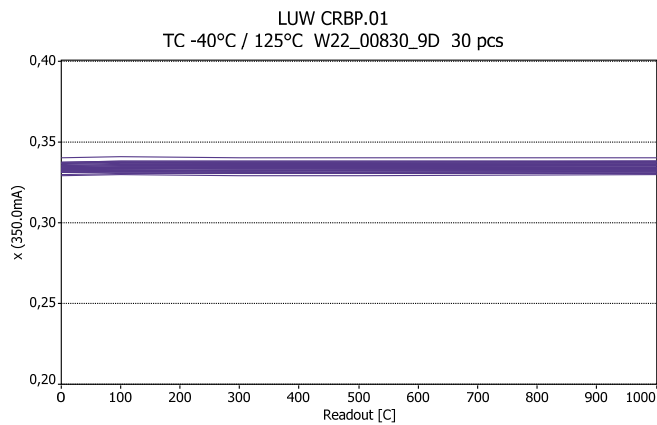
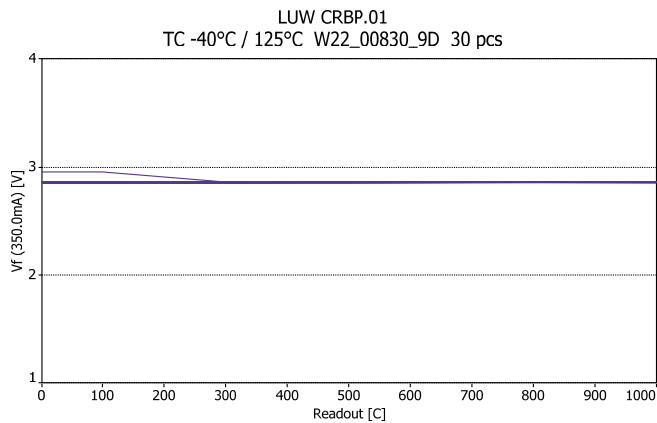
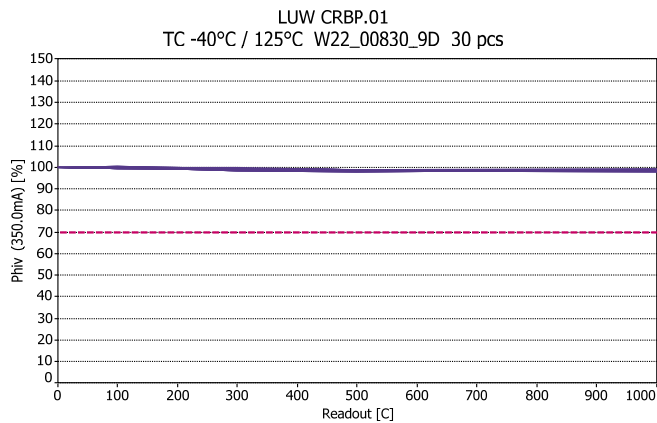
Lot B



Lot C

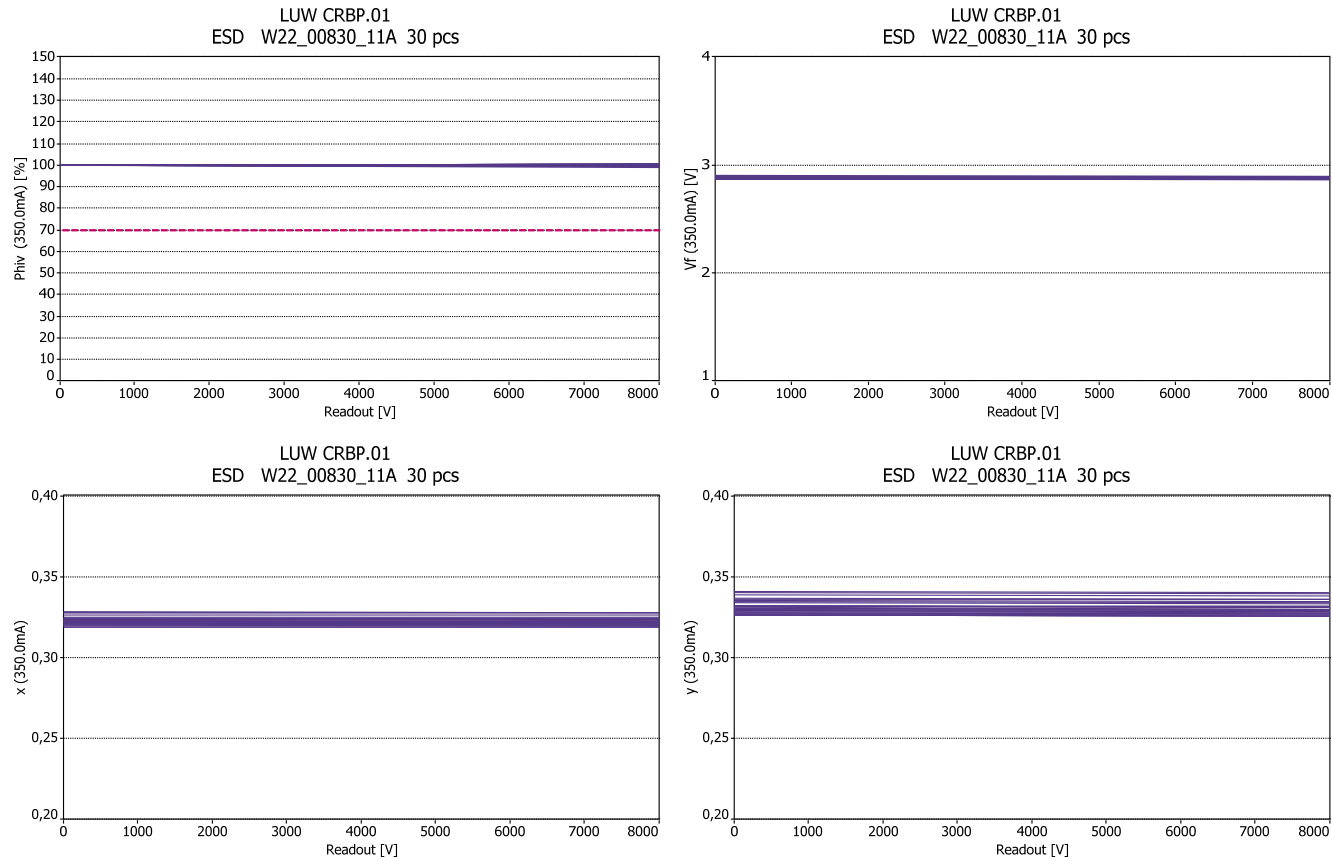


Lot D

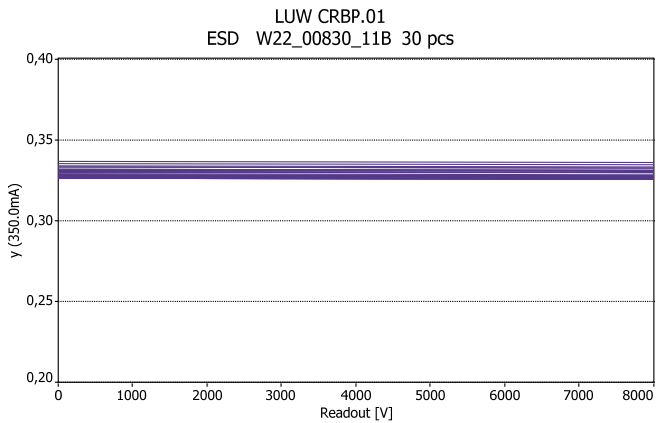
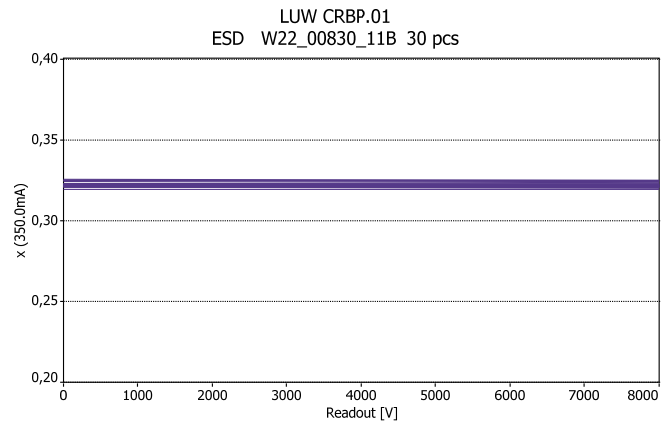
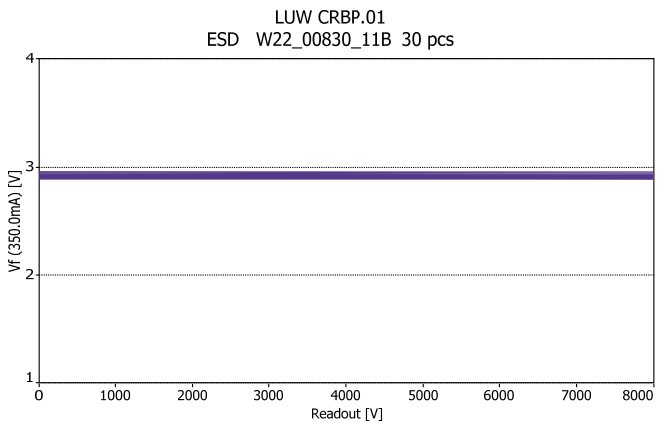
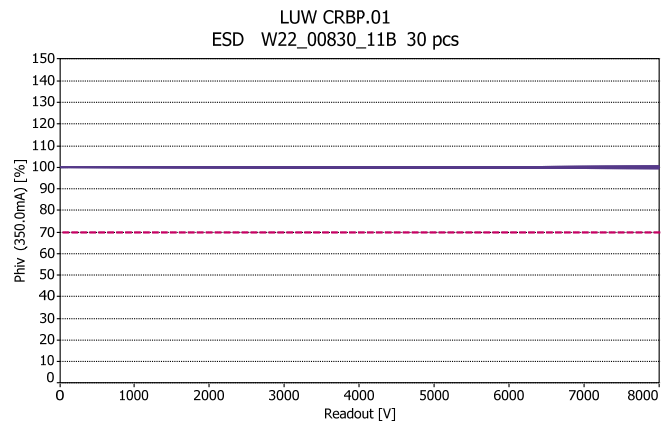


ESD HBM

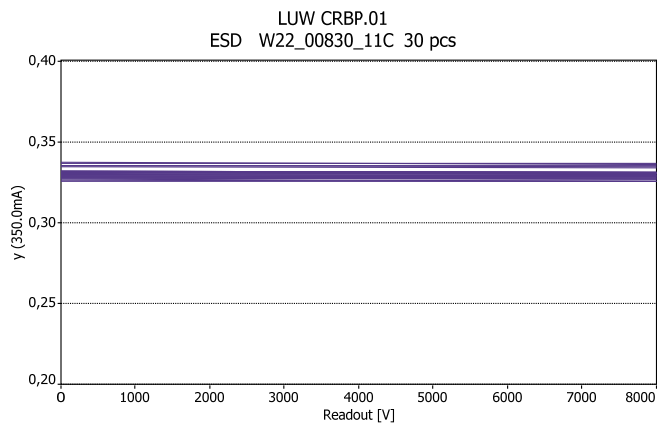
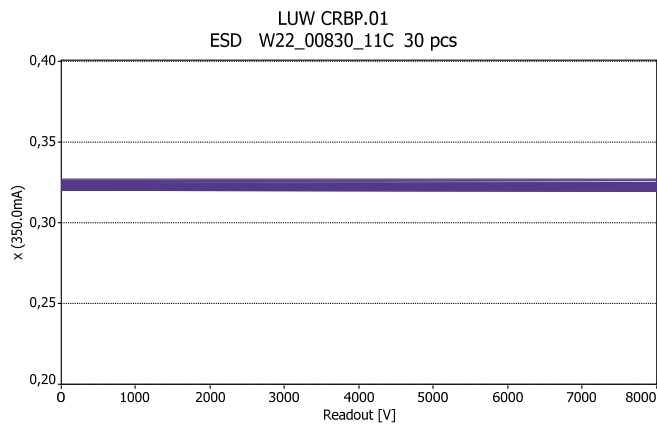
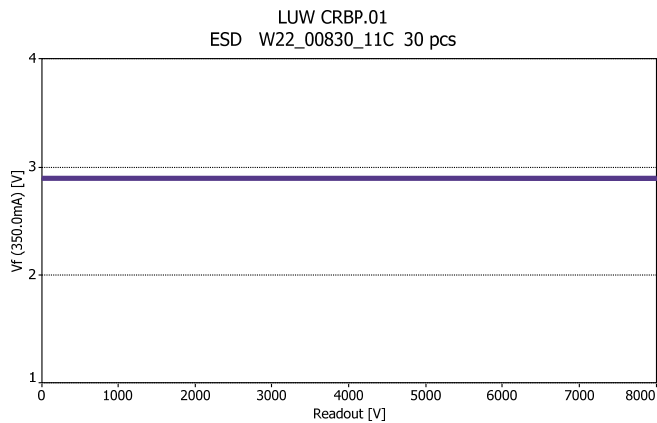
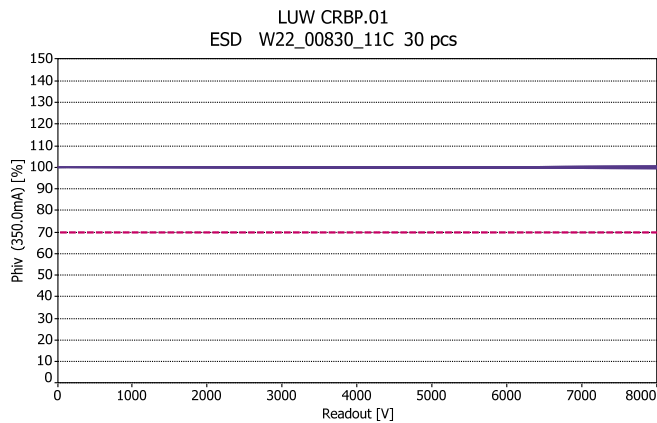
Lot A



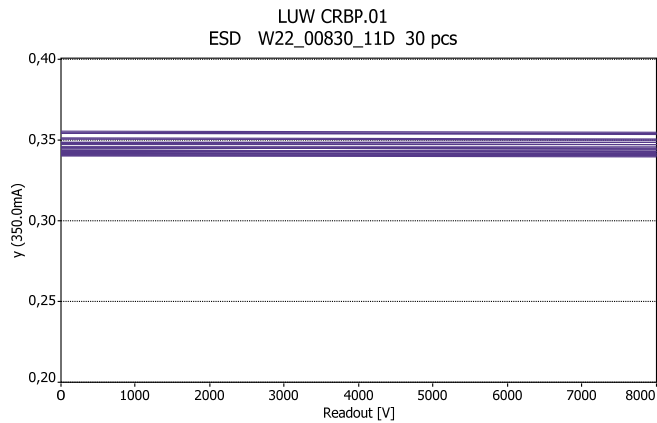
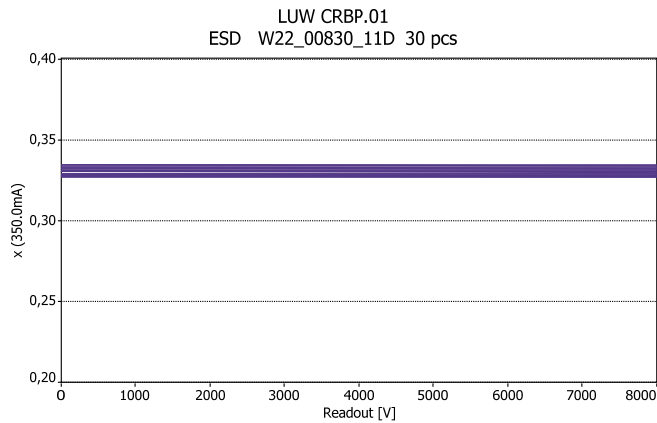
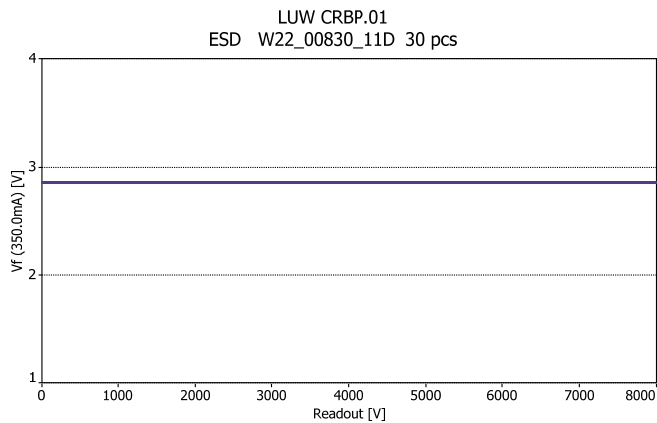
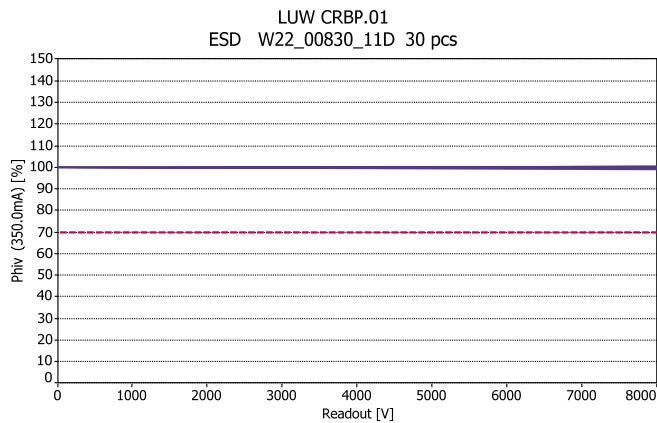
Lot B



Lot C

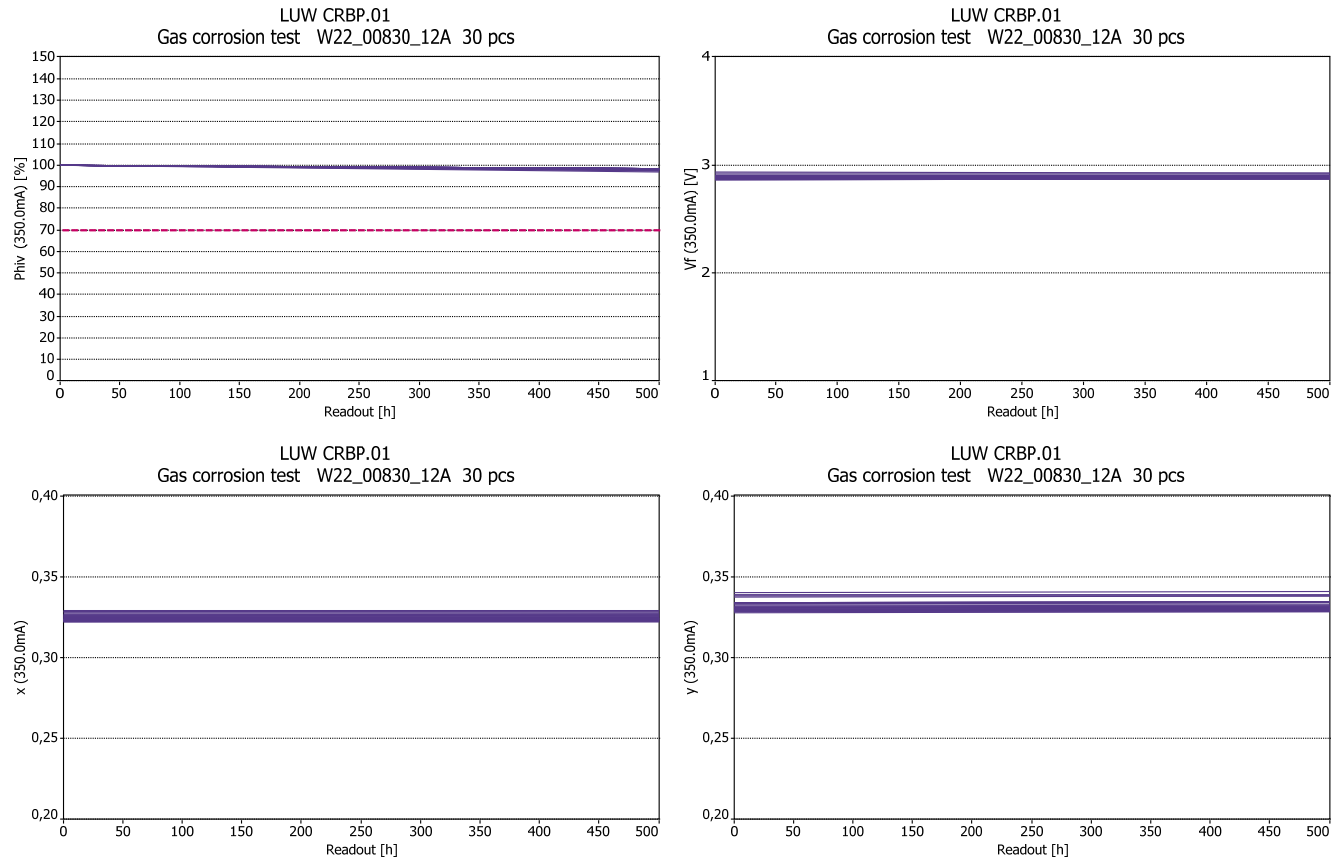


Lot D



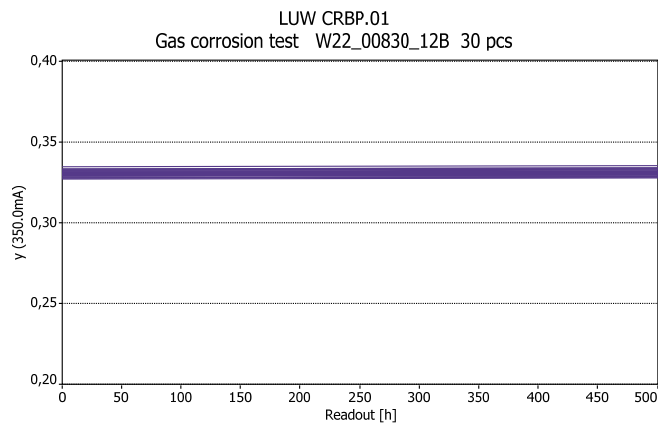
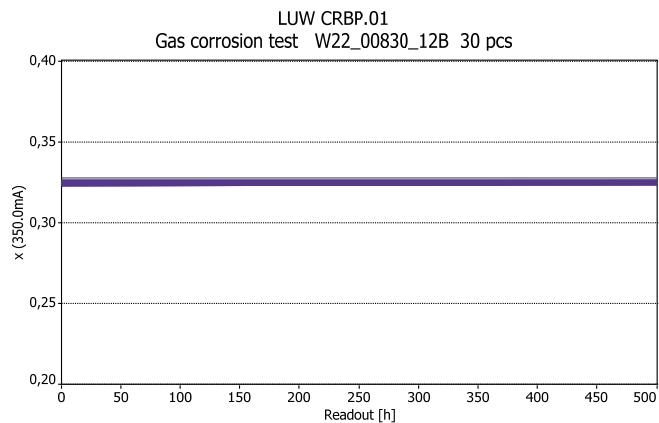
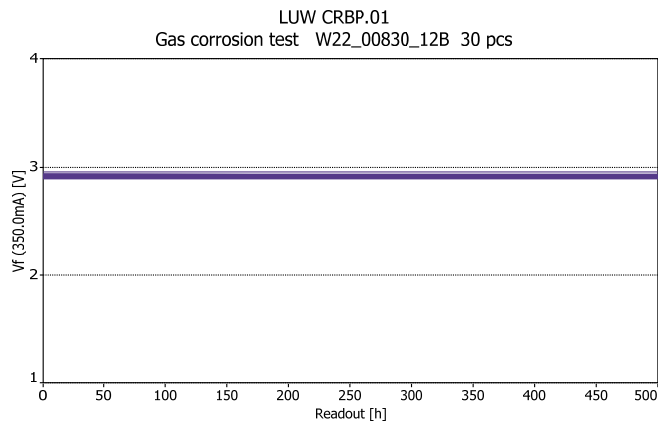
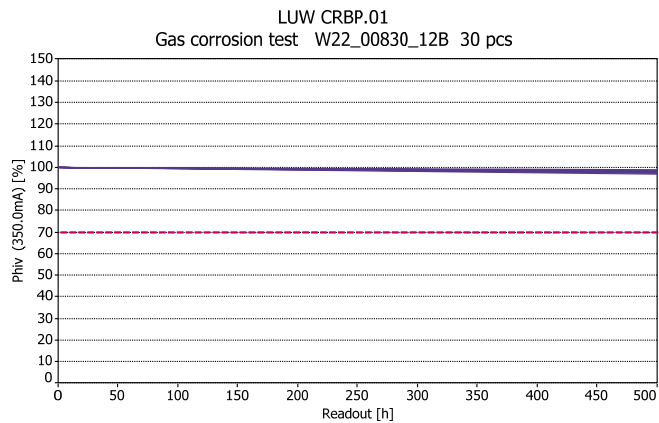
Gas corrosion test

Lot A

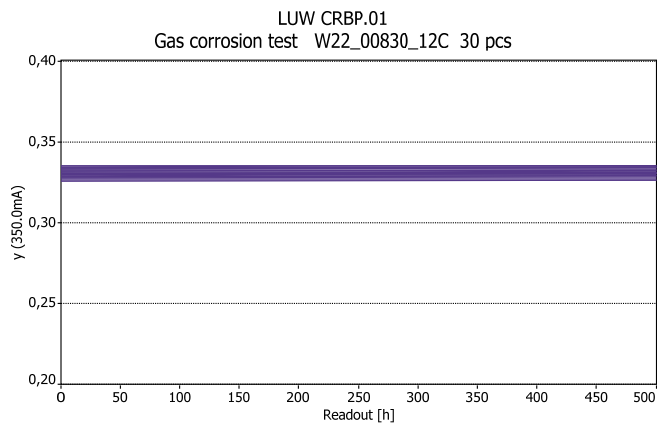
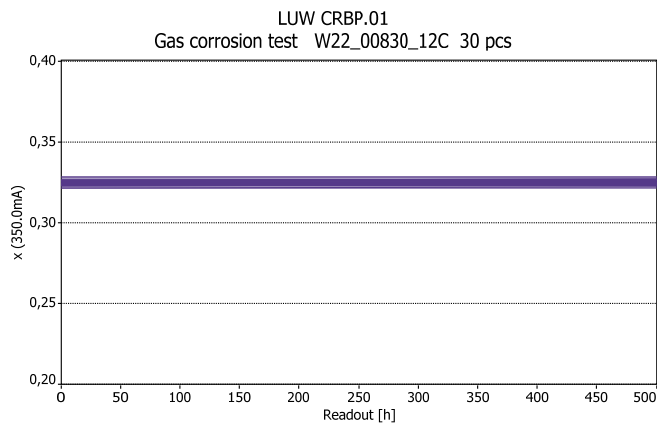
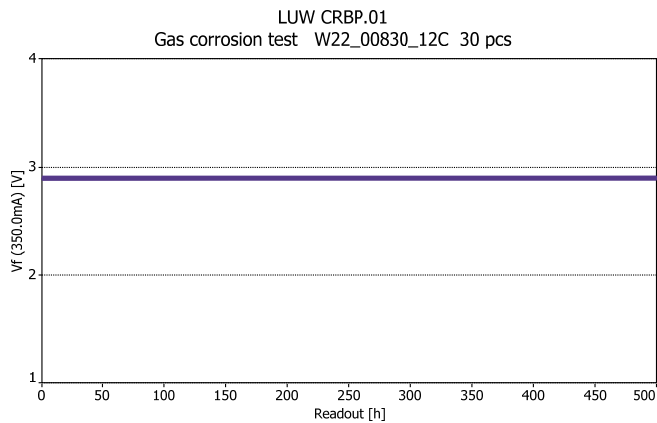
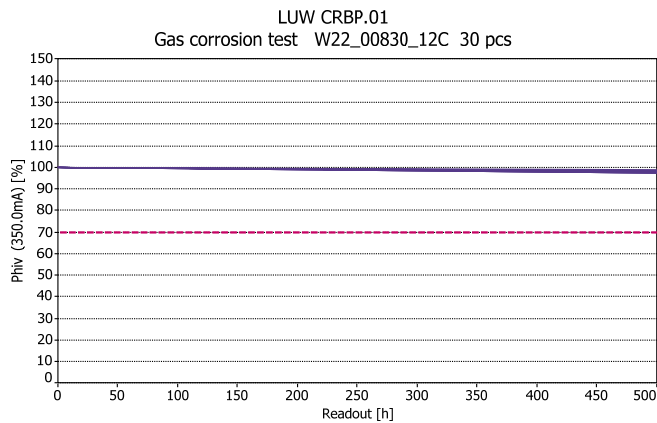




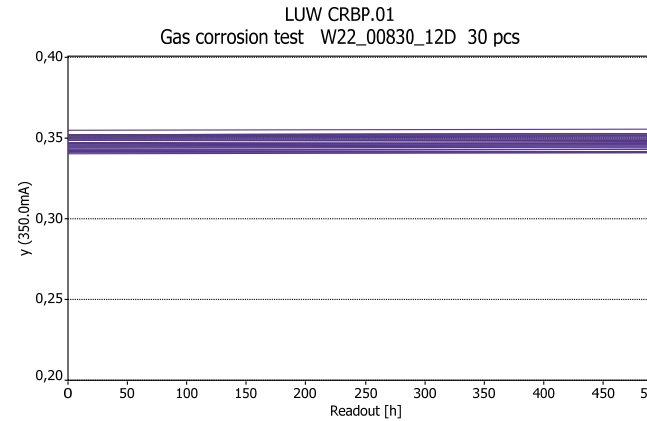
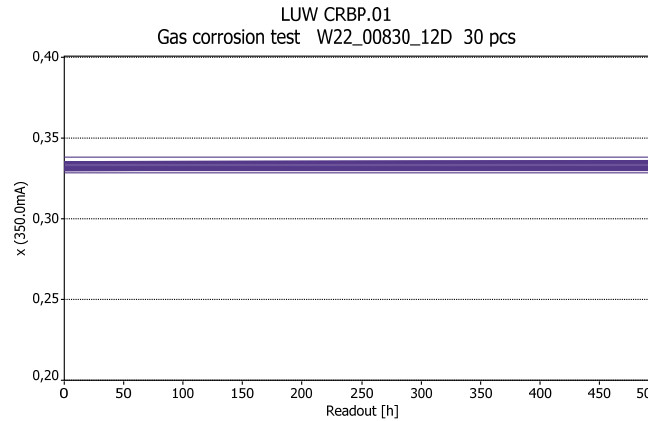
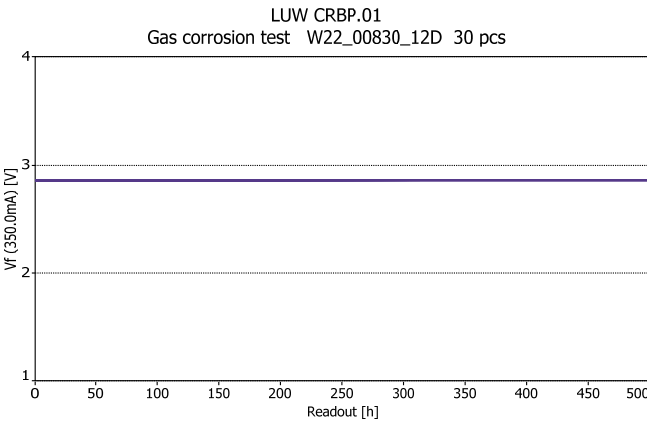
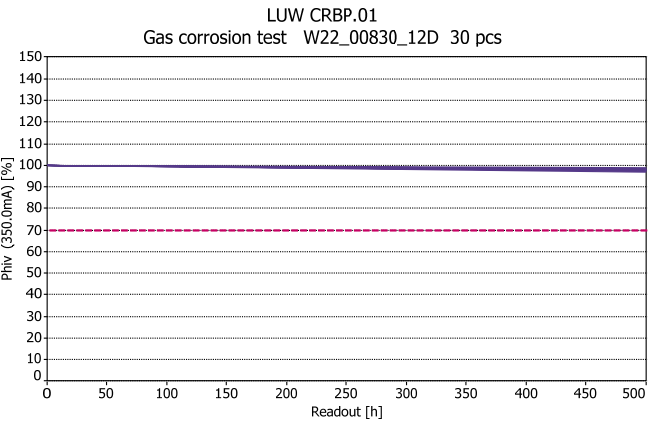
Lot B



Lot C

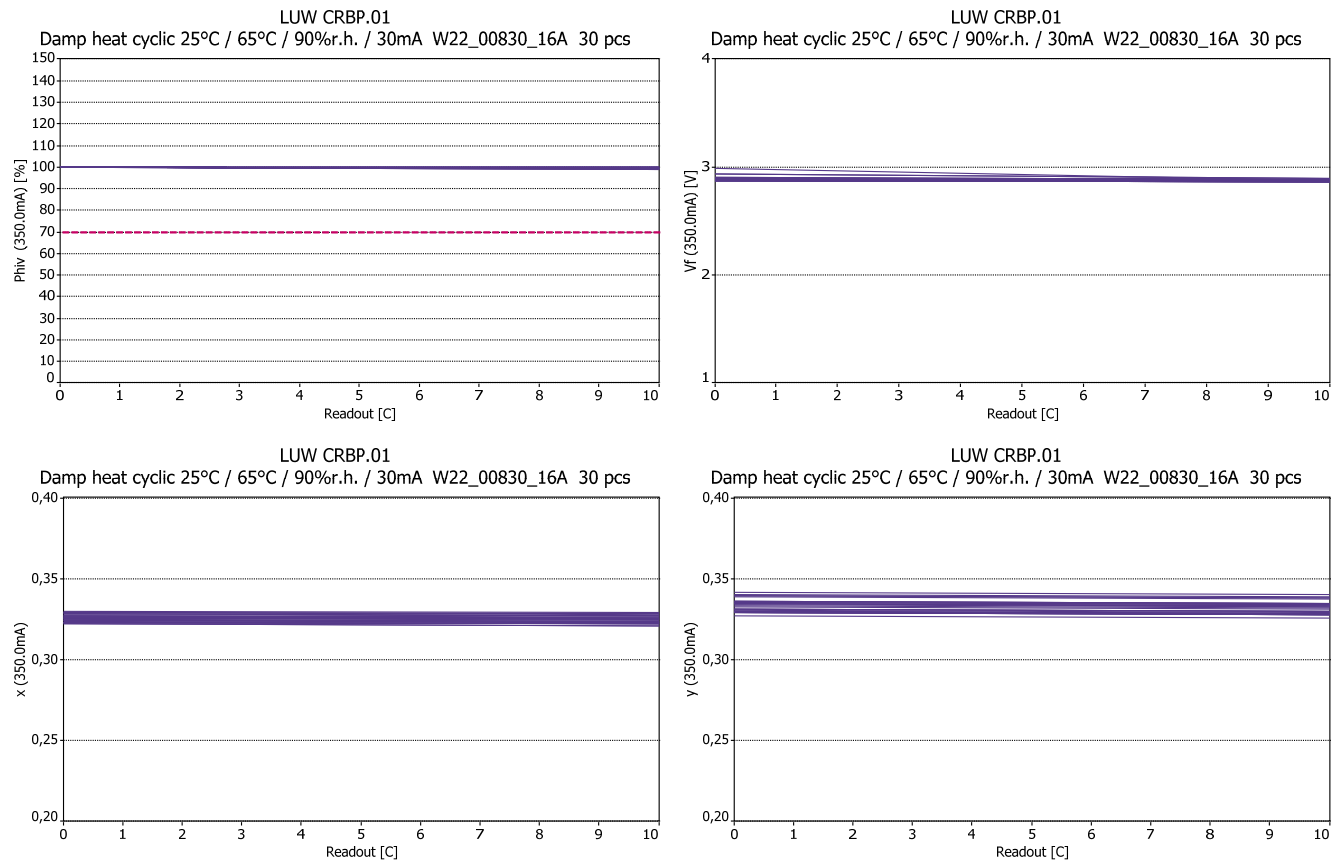


Lot D

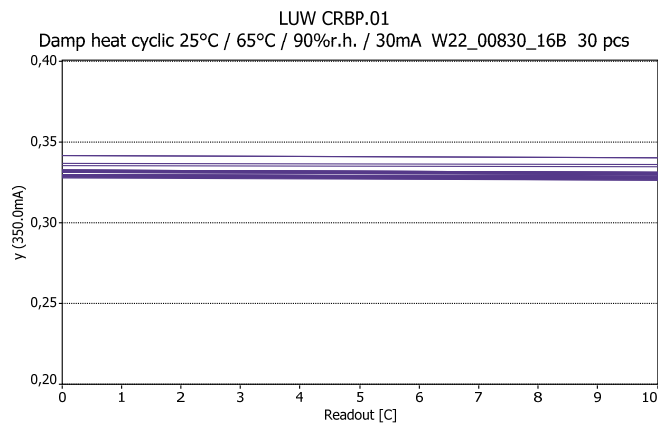
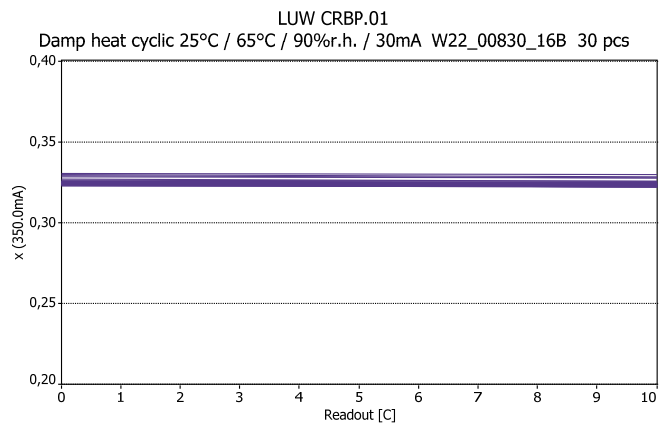
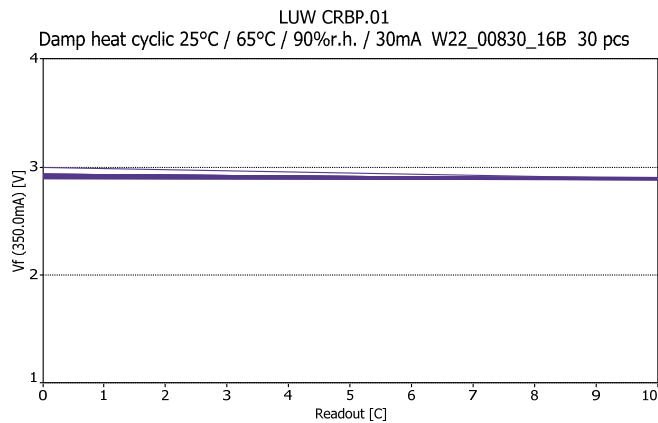
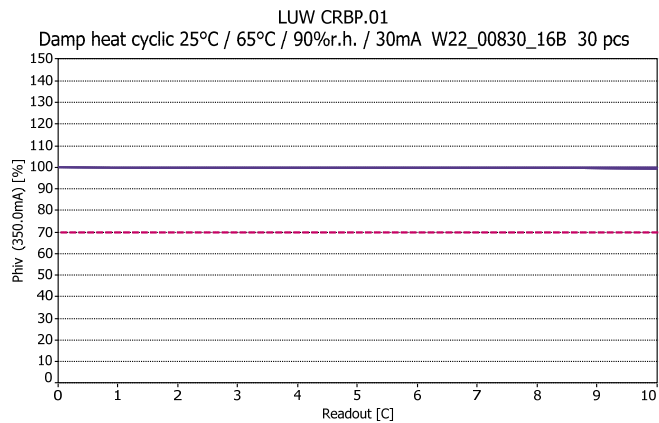


Damp heat cyclic 25°C / 65°C / 90%r.h. / 30mA

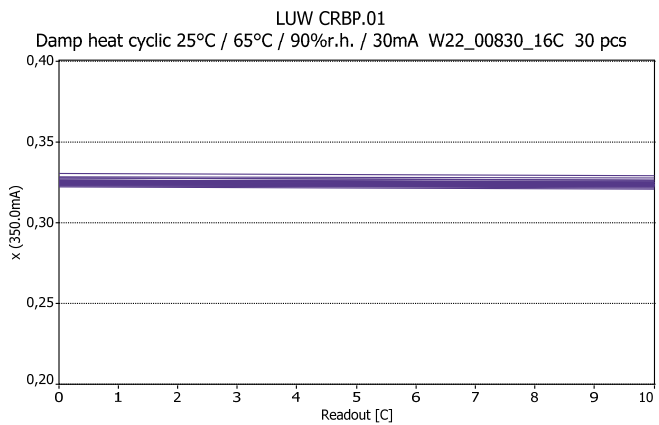
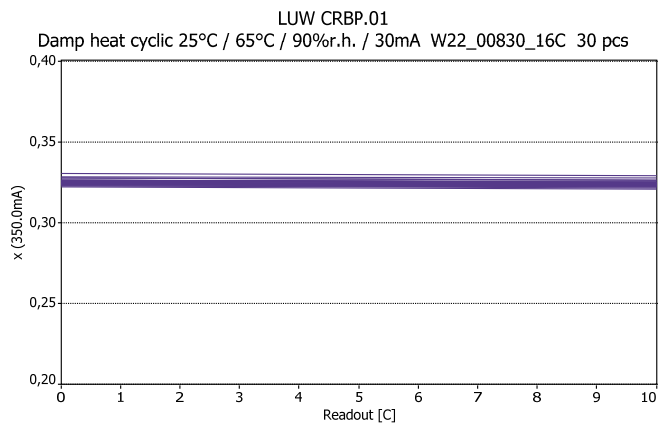
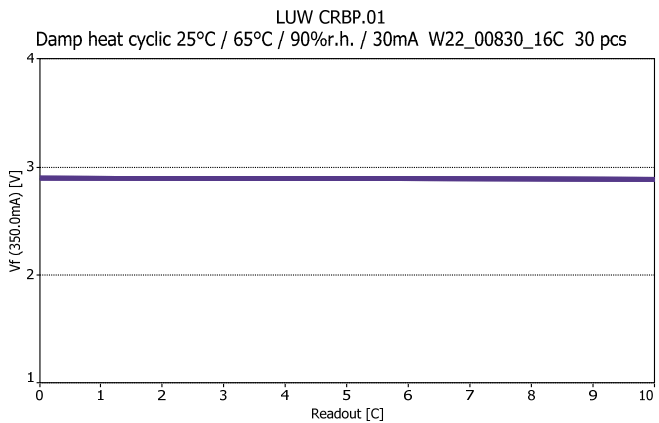
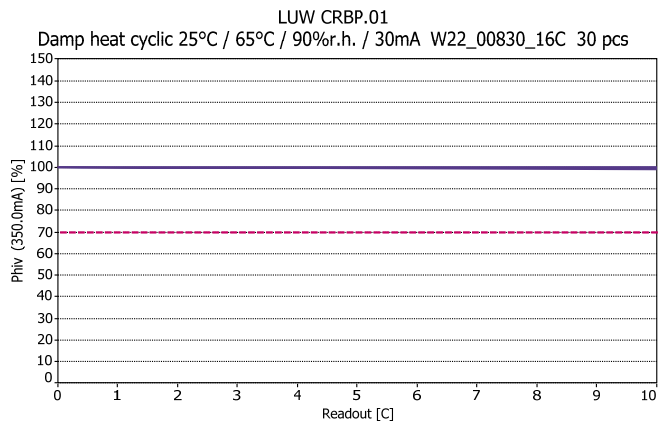
Lot A



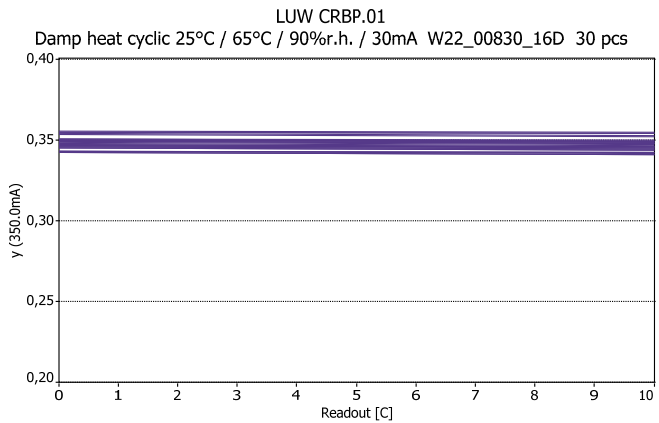
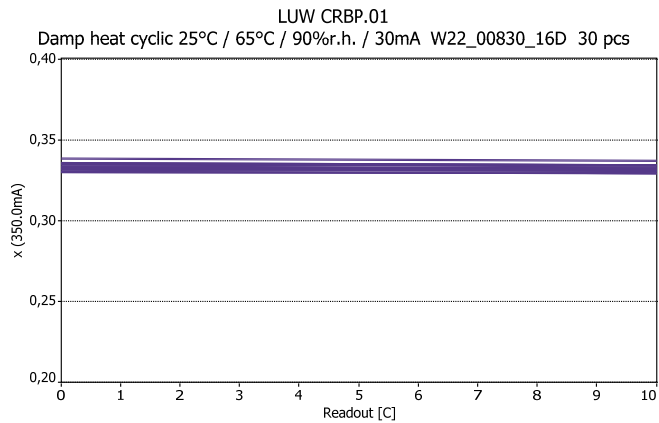
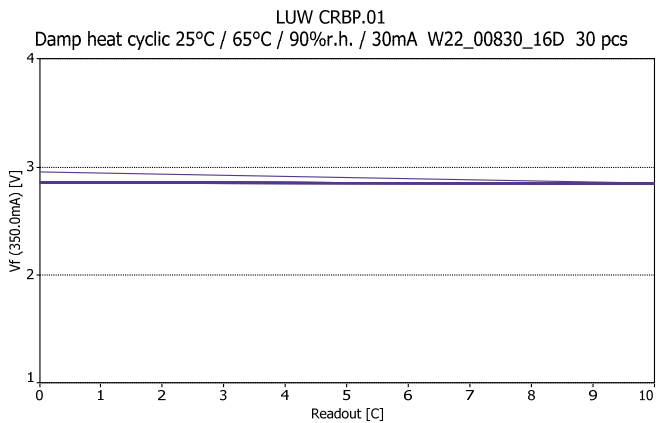
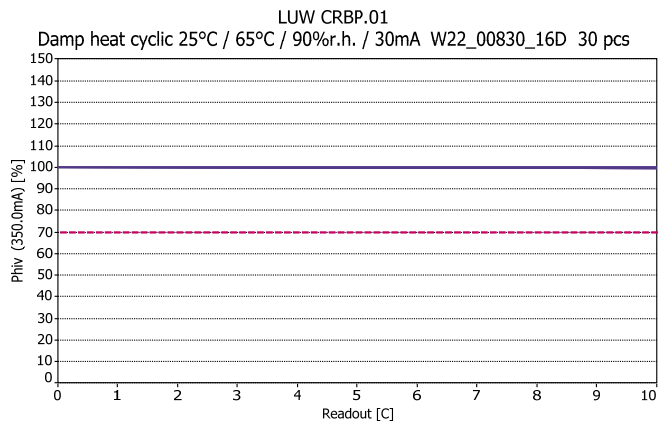
Lot B



Lot C



Lot D



END OF DOCUMENT