



Date: 09/17/2015

Description of the change: CBT-120-R transition to PT-120-RAX

Dear Customer:

You are receiving this letter due to a change in manufacturing affecting the CBT-120-R series of high brightness LEDs that our records indicate you have purchased in the past 18 months.

As part of the rationalization of our operations and consolidation of latest technology platforms, Luminus is announcing that the CBT-120-R will be transitioned to the PT-120-RAX series of product. The PT-120-RAX is largely compatible with CBT-120-R series but there are important functional differences between the two product lines that your organization should review. The differences include optical and electrical characteristics and will be outlined below.

Material remaining to produce the CBT-120-R is limited and while Luminus is confident they can support production during the transition period, production deliveries may be constrained. Please contact your local LDI representative of any and all near term demand and to assist in planning on migration to PT-120-RAX from both the technical and commercial perspectives.

Differences between the CBT-120-R and PT-120-RAX

Both products are largely compatible but differences are present that may impact a customer system.

Mechanical:

- PT-120-RAX and CBT-120-R share the same package, connector, and most mechanical dimensioning. Minor differences in tolerancing may exist that reflect adjustments related to improvement in some processes.
- Cosmetic differences in package may exist due to upgraded version of components. These will not affect backwards mechanical compatibility
- Please refer to full product datasheets for full details

Thermal performance:

- PT-120-RAX series offer a reduced thermal resistance of 0.4 C/W versus 0.7C/W for the CBT-series, resulting in easier thermal design and longer planned lifetime under equivalent cooling system

Test Conditions

- CBT-120-R series are specified at 18A CW while PT-120-RAX series are specified at 30A, 25% duty cycle. Both are tested at 40C heatsink condition. Equivalence between key parameters is provided later in this document

Optical and Electrical

- Due to different die technologies, there are performance and electrical considerations that may impact a system design.
- Core board polarity is different between both versions: CBT-120-R series have a common anode (+) PCB polarity. Due to the implementation of new improved technology, PT-120-RAX have a common cathode (-) PCB polarity. System electrical diagram should be carefully reviewed for implications of this change and possible adjustments
- Comparison table below summarizes parametric differences between both versions.



PRODUCT CHANGE NOTIFICATION

Optical Performance Comparison (at 30A @ 25% DC)***		
ITEM*	CBT-120-R-	PT-120-RAX-L11
Vf (typ) / (max)	2.7 V / 3.7	2.9 / 3.7
CIE x (typ)	0.693	0.670
CIE y (typ)	0.306	0.329
DomWL	621nm	611nm
RadFlux	10.2W	11.0W
Peak Lumens**	1950	2800

* Figures above are representative, but not a guarantee. See respective datasheets for allowable variation and full response curves.
 ** Peak Lumens comparison is for reference. Actual delivered Lumens will depend on exact bin being purchased.
 *** CBT-120-R is tested at a different condition (18A/CW), the above table is normalized to PT-120-RAX test condition (30A/Pulsed). It is approximate.

There are further minor mechanical and visual differences. Samples of PT-120-RAX are now available from your local Luminus representative.

Customers are encouraged to review closely the PT-120-RAX-L11 to determine if any parameters affect their current designs and to contact LDI for assistance in the transition.

1. Affected Products

Products series listed below are under the scope of this notification:

Suggested Replacements				
PRODUCT SERIES	Min Flux @ 18A CW	Correlated flux at 30A Pulsed	Suggested PT-120-RAX Bin	Recommended Replacement Part
CBT-120-R-C11-HJ10x	600 lm	1000 lm	5H (2150 lm min)	PT-120-RAX-L15-MPH ⁽¹⁾
CBT-120-R-C11-HK1xx ⁽¹⁾	770 lm	1285 lm		
CBT-120-R-C11-HM10x	970 lm	1625 lm		

⁽¹⁾ The PT121-RAX-L15 is capable of replacing the CBT-120 Wavelength bin '100', however, it's wavelength is not directly compatible with the '101' or '110'. Customers will have to adapt their systems accordingly if PT121-RAX is used.

2. Purpose

- Obsolescence of CBT-120-R die technology.

3. Scope of changes

Ordering Part Number	PT-120 part numbers are orderable based on Brightness bin. Wavelength or color temperature bins are not supported. Please refer to the PT-120 datasheet for available orderable part numbers.
Product Specification	Refer to PT-120-TE datasheet, PDS-002058 Rev 05 as well as table provided earlier in this letter
LED chip production facility	PT-120-RAX die is produced in China and leverages a new chip design and process. CBT-120 die produced in the US. This supply is extremely limited.
LED package assembly and test	Package assembly is mostly identical but PT-120 series leverage

	<p>latest generation low thermal resistance process No change ins assembly and test location While actual operating envelopes are very similar, CBT and PT series are tested under different drive current as reported earlier in this letter.</p>
<p>Anticipated impact on Form, Fit, Function, Quality or Reliability (positive / negative):</p>	<p>Mechanical: Minor variations but considered, “Drop-In” in most systems. Thermal: PT-120 has lower (improved) thermal resistance than CBT-120. Electrical: Copper board polarity reversal may impact system level design. PT-120 has ~10% higher Vf. Optical: Major differences due to changing wavelength and increased optical power; will affect system performance. Review closely to achieve desired system performance. Quality / Reliability: PT-120-RAX is fully qualified with same or better projected lifetime as CBT-120-R series. PT-120-RAX lower thermal resistance may offer improved lifetime.</p>
<p>Environmental compliance & Materials</p>	<p>As all Luminus LED products, the PT-120-RAX sourced from Luminus Asian CM partners is compliant with an extensive range of standards including:</p> <ul style="list-style-type: none"> - RoHS - REACH - Conflict Minerals (DRC – US Dodd Frank Act)

4. Schedule

Luminus will accept orders on CBT-120-R through 12/31/2015, however, we cannot guarantee that all orders can be fulfilled since quantity on CBT-120-R is limited. Luminus is committed to work closely with customers and help them transition smoothly to the PT-120-RAX series. Please contact your Luminus representative for assistance in your transition plan.

Thank you for using Luminus LED products and please contact your local sales representative or Luminus Customer Service (cs@luminus.com) if you have questions regarding this product change notification.