

Customer Information Note

October 3rd, 2016

Customer Information Note #: 2016068C

Subject: Lumileds announces new 5-SDCM color bin options for LUXEON 3535L Line

Overview

Lumileds is notifying customers of a minor addition of 5-SDCM options to our color binning structures for the LUXEON 3535L product line. At this time, Lumileds is ready to implement this modification. The details of the change and supporting documentation are attached below.

Description of Change(s):	The color bin structures for 2700-6500K will have a 5-SDCM ellipse added to the existing structure, dividing the existing >3-SDCM bins into more granular options.
Customer Impact and Recommended Actions:	Enables capability for tighter color kitting. New color bins are subsets of existing bins - no action required.
Products affected:	LUXEON 3535L LUXEON 3535L HE LUXEON 3535L HE Plus (Does not apply to LUXEON 3535LS) See Attachment A for full list of part numbers
Reference Documents/Attachments:	Attachment A: Affected Product Lines & Part Numbers Attachment B: New Datasheet Attachment C: Change Overview including timeline
Reason for change(s):	New color bin options enable 4-SDCM & 3-SDCM kitting capabilities and standalone 5-SDCM options at L1
Anticipated (positive and negative) impact on form, fit, function or reliability:	No changes to form, fit, function or reliability
Customer part number(s), if applicable:	See Attachment A for affected product list
Last Date, if applicable, of manufacture of the unchanged product, if applicable:	On or after October 23
Anticipated date when shipments of the changed product can commence:	On or after October 23

Next Steps

No action required. These minor modifications will begin on or after the date listed in the table above.

Contact:

If you have any questions, or need any further assistance, please contact your Lumileds sales representative.

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Attachments

Attachment A: Affected Product Lines & Part Numbers

Product Lines:

- LUXEON 3535L
- LUXEON 3535L HE
- LUXEON 3535L HE Plus

Specific Part Numbers:



3535L Part Numbers
- New Color Binning

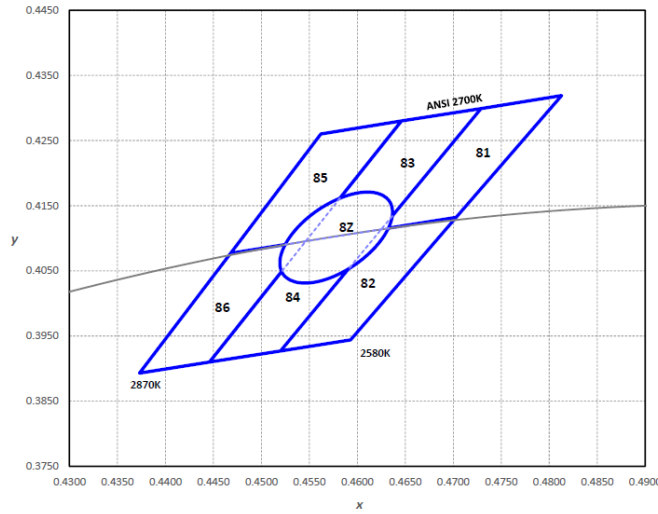
Attachment B: New Datasheet



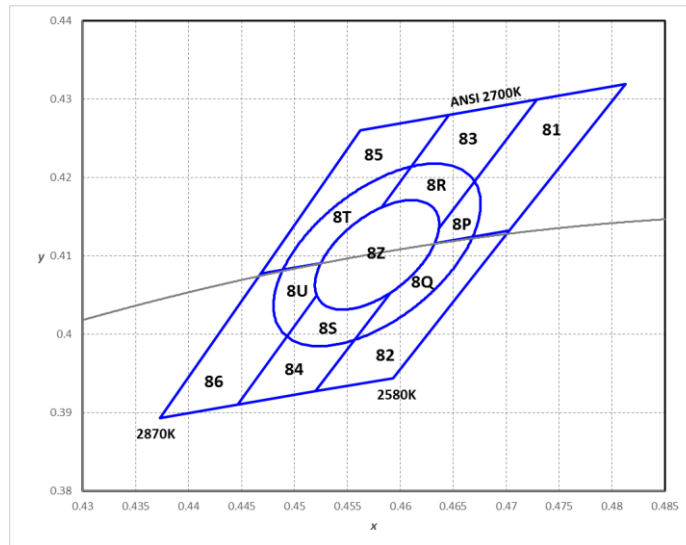
DS203 LUXEON
3535L Line 20160927

Attachment C: Change Overview

Current 2700K Color Binning Structure:



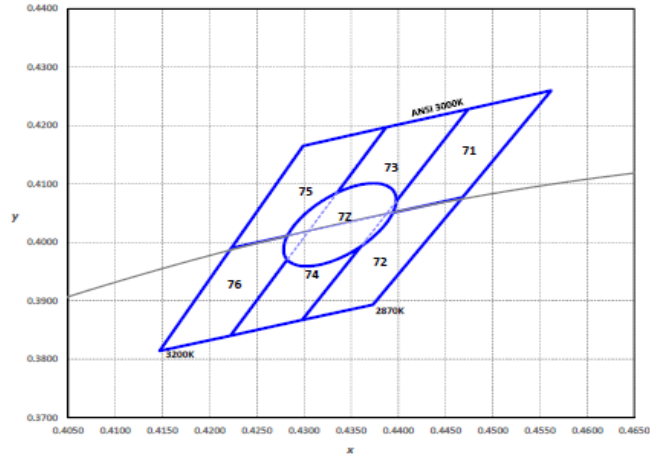
New 2700K Color Binning Structure:



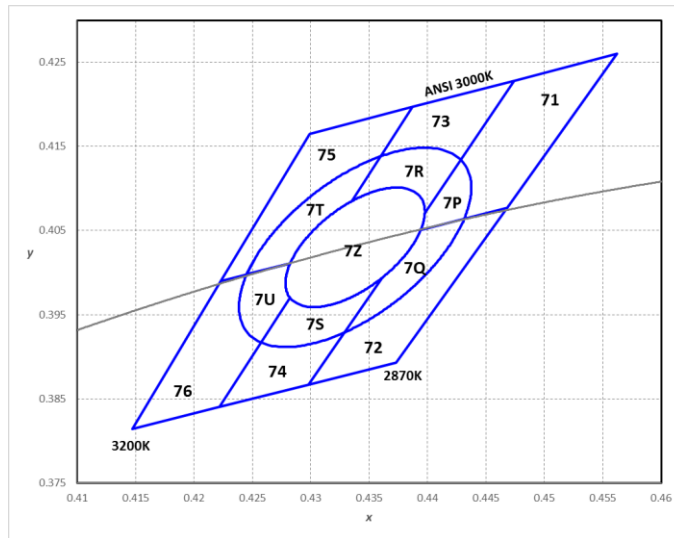
COLOR SPACE	CENTER POINT (cx, cy)	MAJOR AXIS, a	MINOR AXIS, b	ELLIPSE ROTATION ANGLE, θ
3-Step MacAdam ellipse	(0.4578, 0.4101)	0.0081	0.0042	53.70°
5-Step MacAdam ellipse	(0.4578, 0.4101)	0.0135	0.0070	53.70°

New bins 8T, 8R, 8P, 8Q, 8S and 8U are defined by the intersections of the ANSI quadrangles with the 5-SDCM ellipse.

Current 3000K Color Binning Structure:



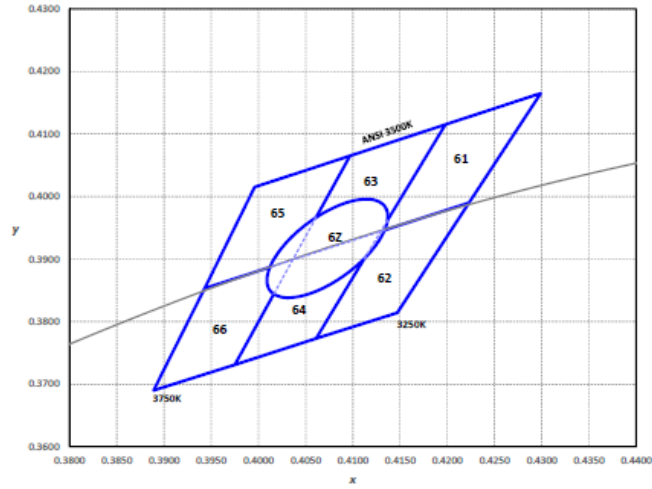
New 3000K Color Binning Structure:



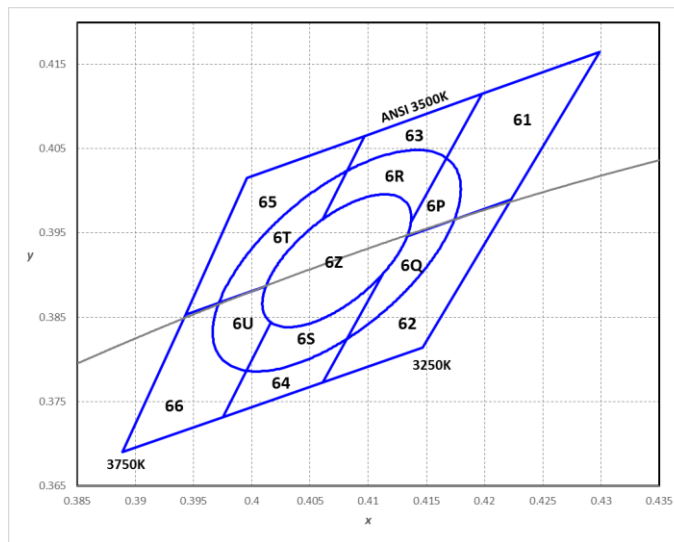
COLOR SPACE	CENTER POINT (cx, cy)	MAJOR AXIS, a	MINOR AXIS, b	ELLIPSE ROTATION ANGLE, θ
3-Step MacAdam ellipse	(0.4338, 0.4030)	0.00834	0.00408	53.22°
5-Step MacAdam ellipse	(0.4338, 0.4030)	0.01390	0.00680	53.22°

New bins 7T, 7R, 7P, 7Q, 7S and 7U are defined by the intersections of the ANSI quadrangles with the 5-SDCM ellipse.

Current 3500K Color Binning Structure:



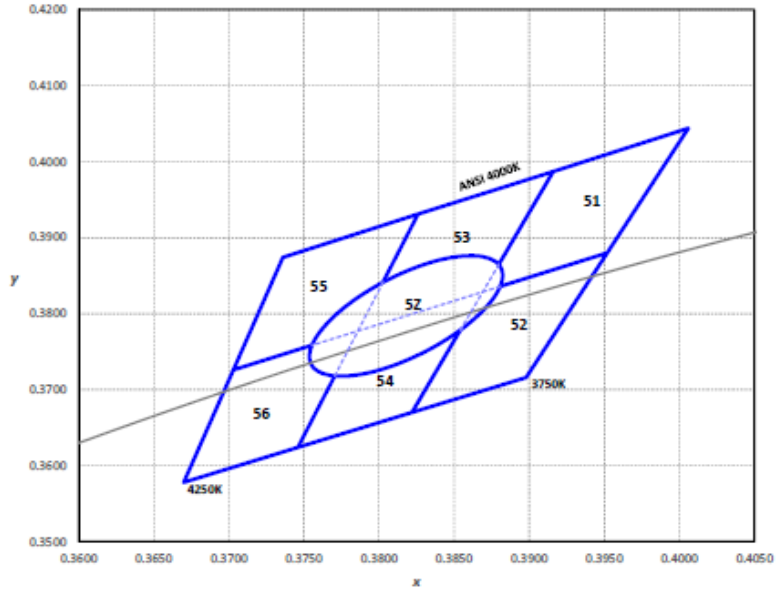
New 3500K Color Binning Structure:



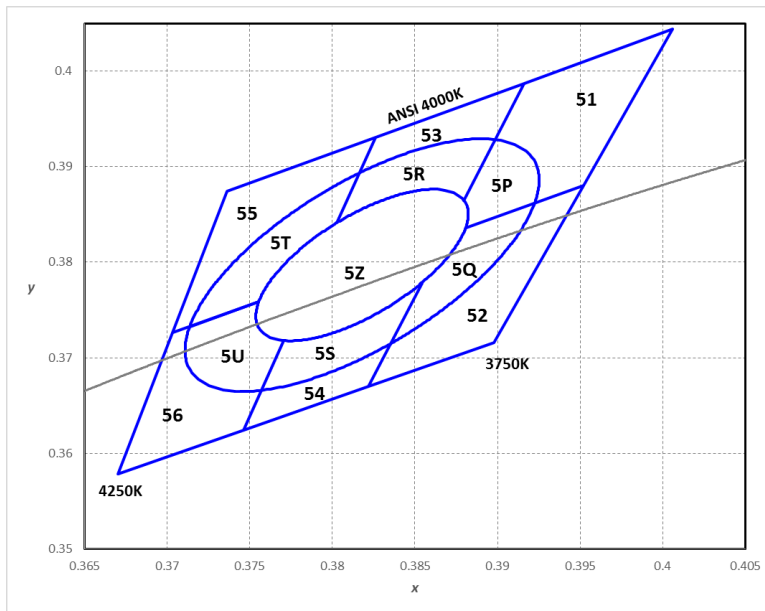
COLOR SPACE	CENTER POINT (cx, cy)	MAJOR AXIS, a	MINOR AXIS, b	ELLIPSE ROTATION ANGLE, θ
3-Step MacAdam ellipse	(0.4073, 0.3917)	0.00927	0.00414	54.00°
5-Step MacAdam ellipse	(0.4073, 0.3917)	0.01545	0.00690	54.00°

New bins 6T, 6R, 6P, 6Q, 6S and 6U are defined by the intersections of the ANSI quadrangles with the 5-SDCM ellipse.

Current 4000K Color Binning Structure:



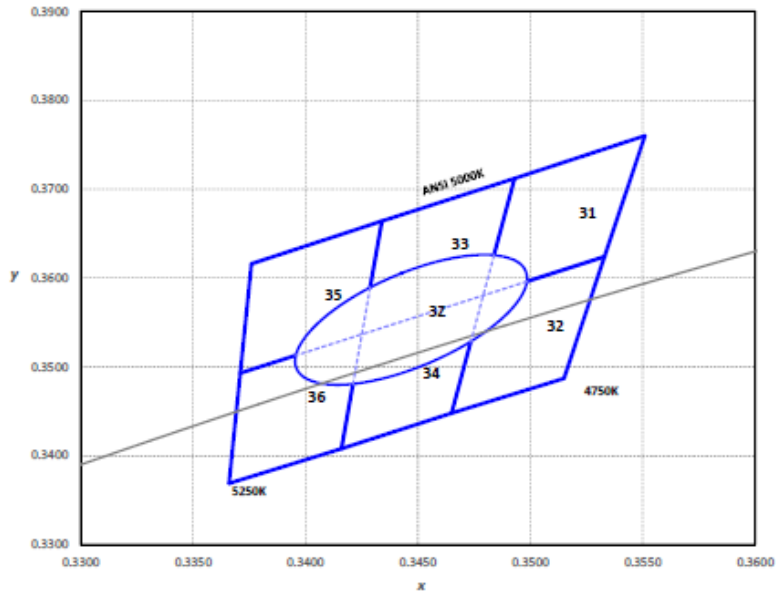
New 4000K Color Binning Structure:



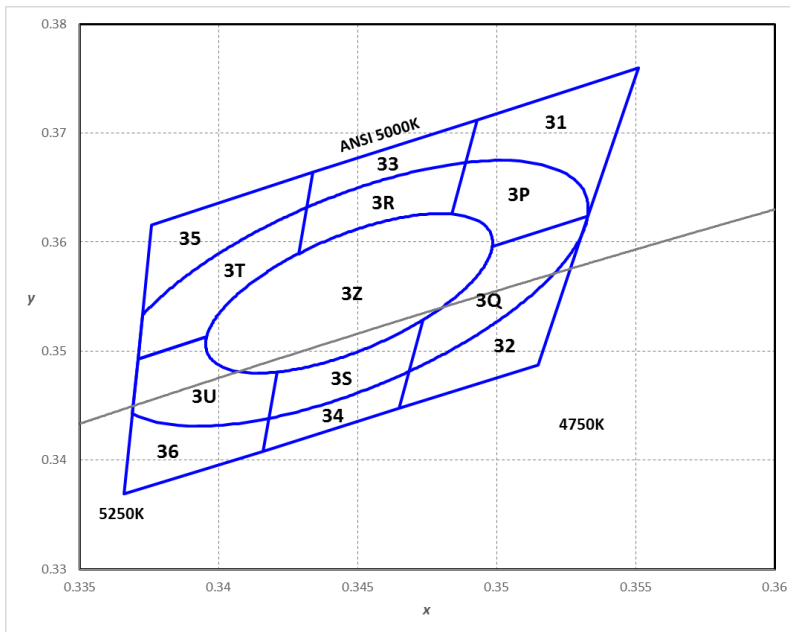
COLOR SPACE	CENTER POINT (cx, cy)	MAJOR AXIS, a	MINOR AXIS, b	ELLIPSE ROTATION ANGLE, θ
3-Step MacAdam ellipse	(0.3818, 0.3797)	0.00939	0.00402	53.72°
5-Step MacAdam ellipse	(0.3818, 0.3797)	0.01565	0.00670	53.72°

New bins 5T, 5R, 5P, 5Q, 5S and 5U are defined by the intersections of the ANSI quadrangles with the 5-SDCM ellipse.

Current 5000K Color Binning Structure:



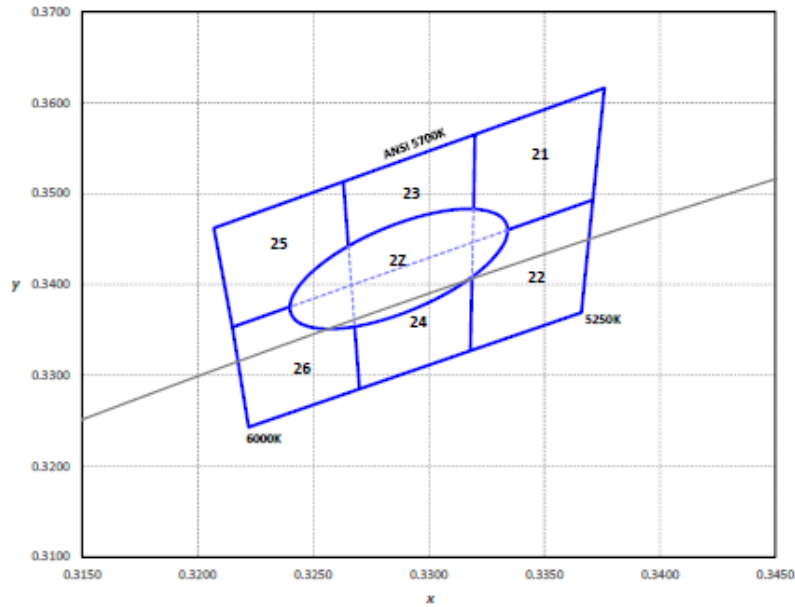
New 5000K Color Binning Structure:



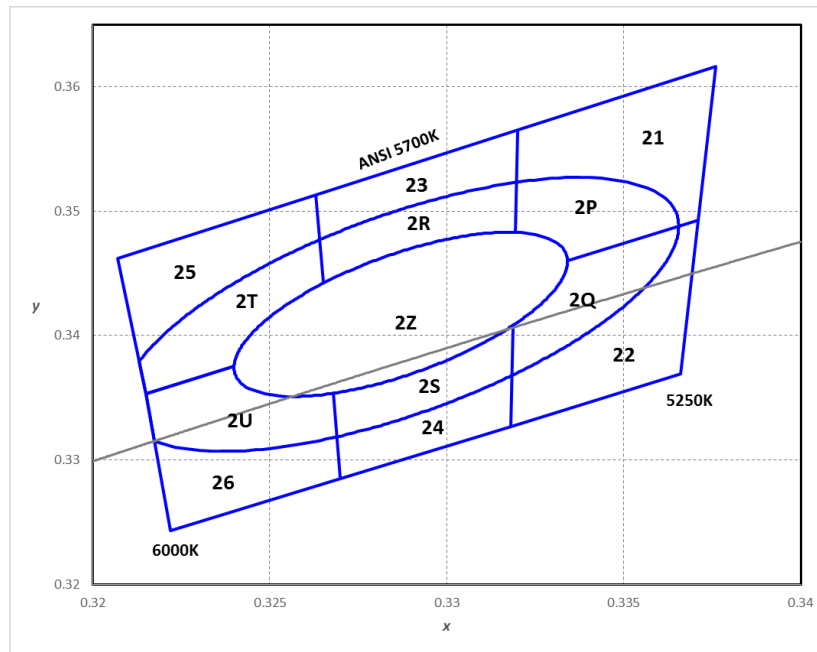
COLOR SPACE	CENTER POINT (cx, cy)	MAJOR AXIS, a	MINOR AXIS, b	ELLIPSE ROTATION ANGLE, θ
3-Step MacAdam ellipse	(0.3447, 0.3553)	0.00822	0.00354	59.62°
5-Step MacAdam ellipse	(0.3447, 0.3553)	0.01370	0.00590	59.62°

New bins 3T, 3R, 3P, 3Q, 3S and 3U are defined by the intersections of the ANSI quadrangles with the 5-SDCM ellipse.

Current 5700K Color Binning Structure:



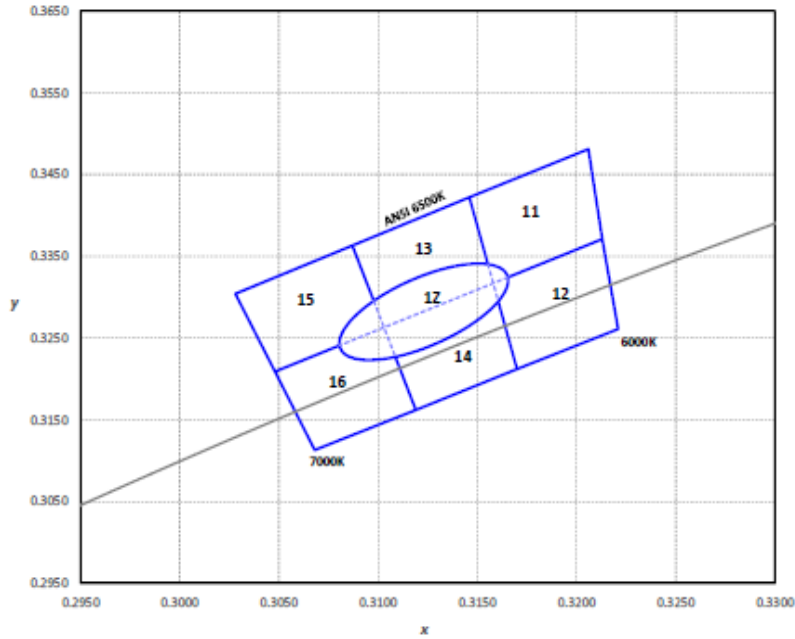
New 5700K Color Binning Structure:



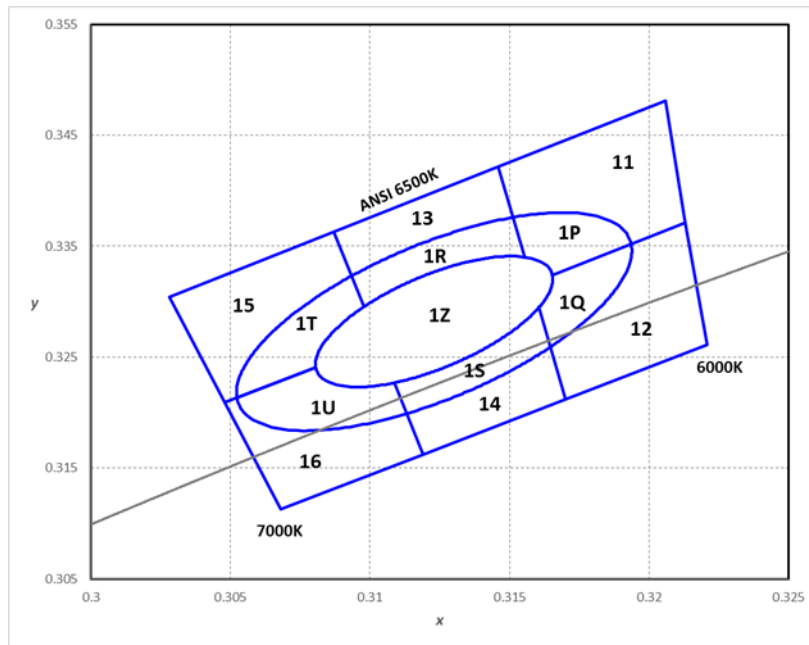
COLOR SPACE	CENTER POINT (cx, cy)	MAJOR AXIS, a	MINOR AXIS, b	ELLIPSE ROTATION ANGLE, θ
3-Step MacAdam ellipse	(0.3287, 0.3417)	0.00746	0.00320	59.09°
5-Step MacAdam ellipse	(0.3287, 0.3417)	0.01243	0.00533	59.09°

New bins 2T, 2R, 2P, 2Q, 2S and 2U are defined by the intersections of the ANSI quadrangles with the 5-SDCM ellipse.

Current 6500K Color Binning Structure:



New 6500K Color Binning Structure:



COLOR SPACE	CENTER POINT (cx, cy)	MAJOR AXIS, a	MINOR AXIS, b	ELLIPSE ROTATION ANGLE, θ
3-Step MacAdam ellipse	(0.3123, 0.3282)	0.00669	0.00285	58.57°
5-Step MacAdam ellipse	(0.3123, 0.3282)	0.01115	0.00475	58.57°

New bins 1T, 1R, 1P, 1Q, 1S and 1U are defined by the intersections of the ANSI quadrangles with the 5-SDCM ellipse.

Transition Plan:

Lumileds will begin binning freshly built parts with the additional color bins on or after August 8th, 2016.

Following the change, Lumileds will continue to ship existing inventory which had previously been binned into the larger ANSI quadrangles, found on the current color bin structure, for an indefinite period of time. This existing inventory will not be re-tested or re-binned into the new granular bins. Instead, this inventory will still be shipped under the existing bin codes, however the chromaticity more many of these parts will likely be closer to the nominal color point (for each CCT respectively) than the new bin structure shows.

Example: for 6500K, an existing reel that was binned into color bin 13 by the current color bin structure will likely contain parts that would be in the new sub-bin 1R. Shipments of color bin 13 will contain a mix of the new bin 13 and the more desirable bin 1R until this existing inventory is depleted.

Any shipments of the new bins (xP, xQ, xR, xS, xT, xU) will only contain parts within the new (and only) bin definitions shown above.

Please see the LUXEON 3535L Line datasheet DS203 for (x,y) chromaticity coordinates of ANSI quadrangle bins.