



L.T.F.

QLUX Light Tune COB LED Series

**LTCOBi1313903018WD-PH Single Channel
Dim to Warm Chip on Board LED**



QLUX COB



Size	13.25mm x 13.25mm
LES	6 mm (OD)
Maximum Voltage	≈ 18V
Typical Power	≈ 4.3W
Typical Efficacy	≈ 96 lm/W
CCT	3000K-1800K Dim to Warm
Typical CRI	93+
Maximum Lumens	≈ 545 lm



RoHS



LTF's U.S. Patented QLUX Light Tune Series COB LEDs offer endless possibilities for lighting OEMs and designers. With industry leading adjustable CCT range, high efficacy, superior color rendering and best color over angle performance built into all QLUX LED light sources. Light Tune COBs let you dial in the perfect illumination for any architectural lighting application.

FEATURES

- Dim to Warm feature enables light to transform from vibrant 3000K CCT down to a warm, cozy 1800K as it is dimmed.
- Superior color rendering performance throughout CCT and dimming ranges.
- Excellent color uniformity and best color over angle with TIR optics.
- Customizable CCT and dimming curve options.
- Proven reliability; LM-80 9,000 hours completed.
- Cost effective.
- Low thermal resistance with long time reliability.

APPLICATIONS

- Human-centric lighting
- Circadian lighting
- Architectural lighting
- Spot lights
- Down lights
- Pendants

SPECIFICATIONS

Model	CCT (Dim to Warm)	Typ. Power	Typ. Current	Typ. Voltage	Luminous Flux	Typ. CRI	Typ. R9
LTCOBi1313903018WD-PH	3000K-1800K	4.3W	250mA	17.29V	414 lm	94	66



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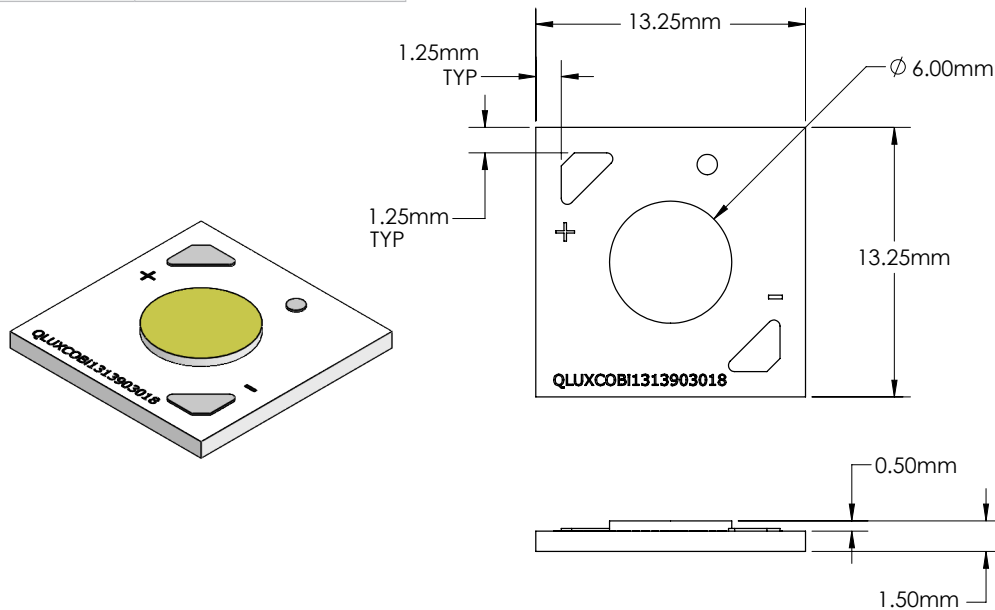
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MECHANICAL SPECIFICATIONS

Board Dimensions	Light Emitting Surface
13.25mm x 13.25mm	6 mm (OD)



ABSOLUTE MAXIMUM RATINGS

Parameter	Maximum Rating
Allowable Reverse Current (I_R)	20mA
LED Junction Temperature (T_J)	130°C
Storage Temperature	-40°C to +125°C
Operating Case Temperature (T_C)	100°C
Soldering Temperature	380°C or lower, 5 seconds max.
Maximum Total Drive Current	350 mA
Maximum Power	6.2W



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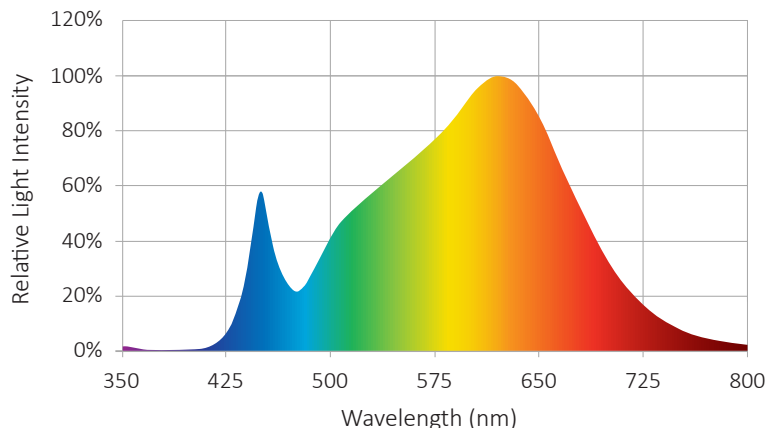
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SPECTRORADIOMETRIC CHARACTERISTICS

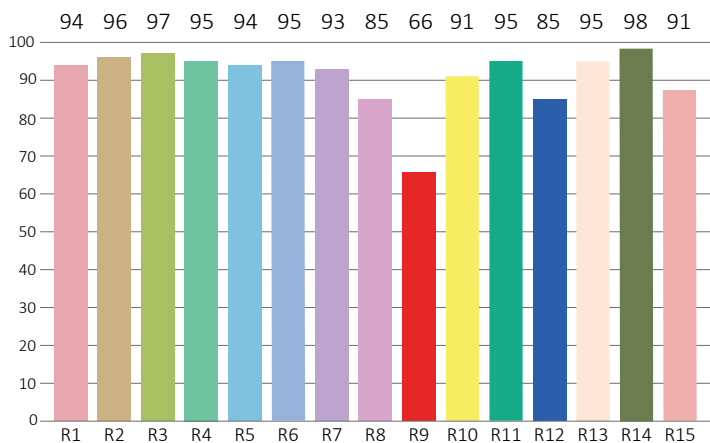
3000K CCT, 250mA, No Dimming



CCT: 3089K
Luminous Flux: 413.60 lm
Efficacy: 96.2 lm/W
Nominal CCT: ANSI_3000K
 $x_0=0.4400$ $y_0=0.4030$
Chromaticity Coordinates:
 $x=0.4292$ $y=0.3986$ $u'=0.2479$ $v'=0.5181$
Chromaticity Difference: -0.0011 Duv
Dominant Wavelength: 581.0 nm(E)
Peak Wavelength: 620 nm

CRI TEST RESULTS

3000K CCT, 250mA, No Dimming



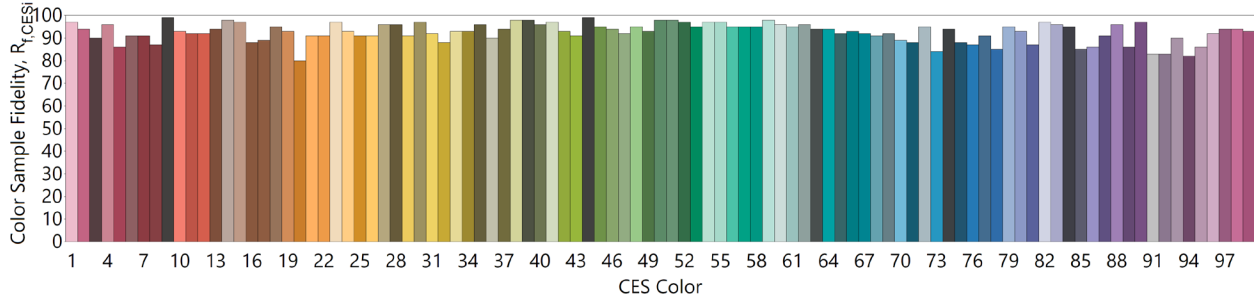
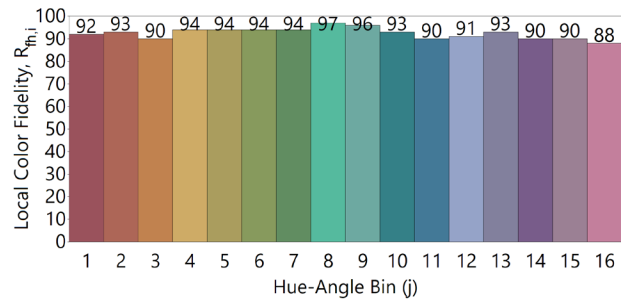
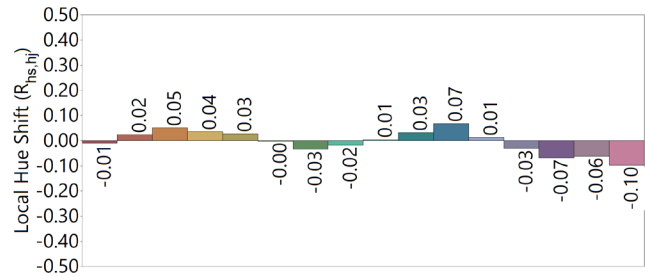
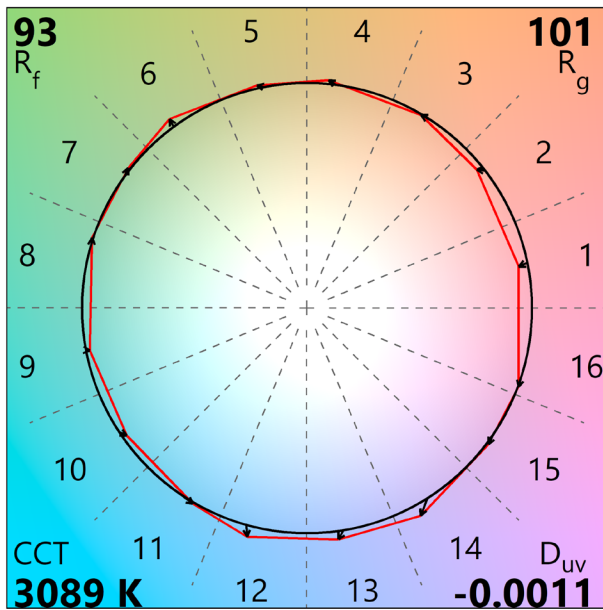
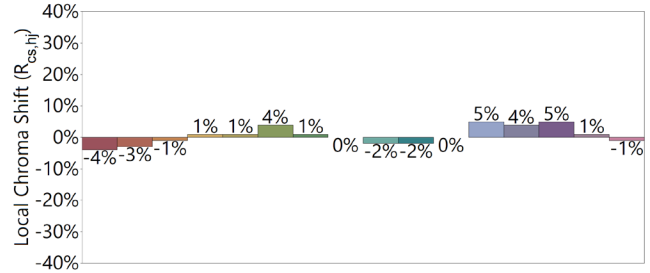
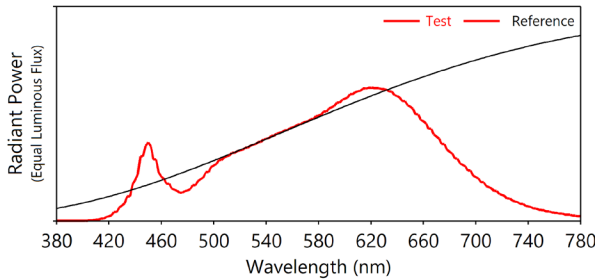
Color Rendering Index (CRI): Ra = 93.8
Colour Fidelity Index: Rf = 91
Gamut Index: Rg = 101
Purity: 0.4875
Color Ratio: Kr=43.1% Kg=48.4% Kb=8.5%
Color Tolerance (SDCM): 5.7
Bandwidth: 170.3 nm
Radiant Flux: 1.439 W
Photosynthetically Active Radiation (PAR): 1.35W
Photosynthetic Photon Flux (PPF): 6.63 $\mu\text{mol/s}$

R1=94	R2=96	R3=97	R4=95	R5=94	R6=95	R7=93	R8=85
R9=66	R10=91	R11=95	R12=85	R13=95	R14=98	R15=91	Re=91



IES TM30-18 COLOR RENDERING REPORT

3000K CCT, 250mA, No Dimming





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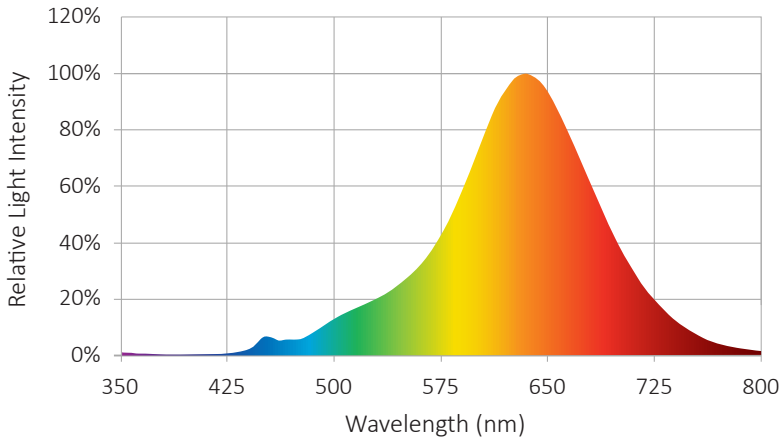
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SPECTRORADIOMETRIC CHARACTERISTICS

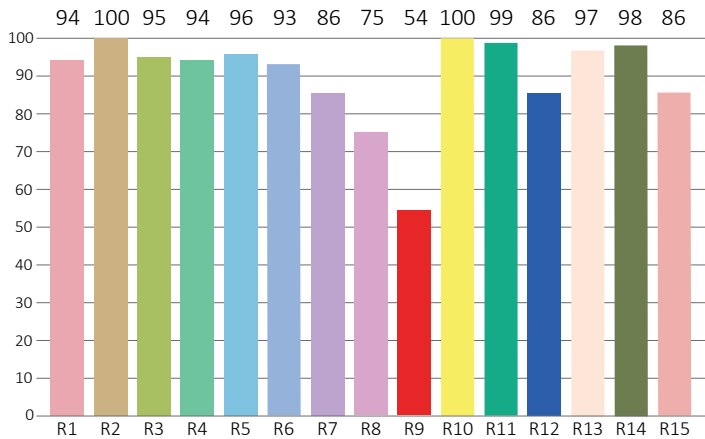
1800K CCT, 19mA, T_j=25°C



CCT: 1823K
Luminous Flux: 21.47 lm
Efficacy: 71.6 lm/W
Nominal CCT: ANSI_F2700
Chromaticity Coordinates:
 x=0.5455 y=0.4077 u'=0.3208 v'=0.5395
Chromaticity Difference: -0.00043Duv
Dominant Wavelength: 589.0 nm(E)
Peak Wavelength: 635 nm

CRI TEST RESULTS

1800K CCT, 19mA, T_j=25°C



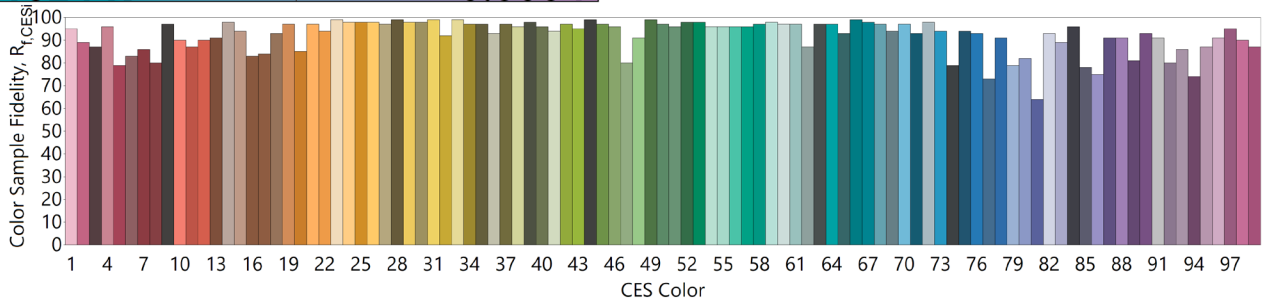
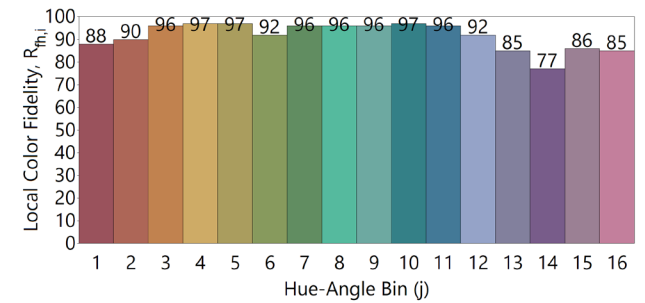
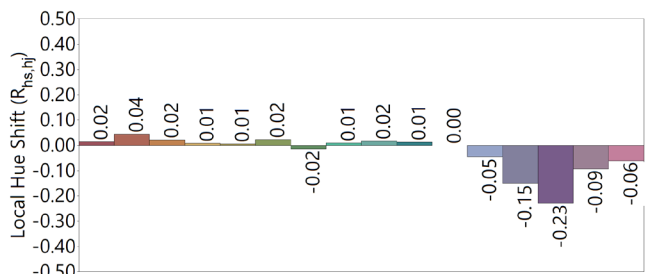
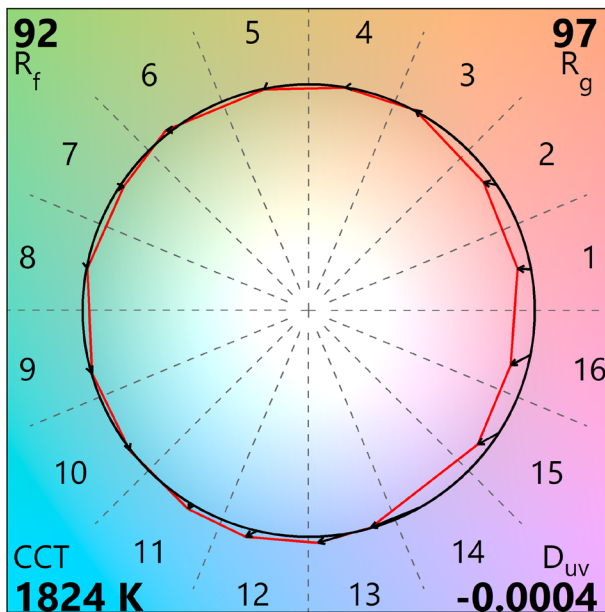
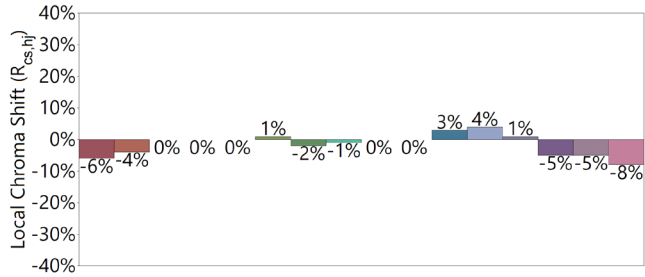
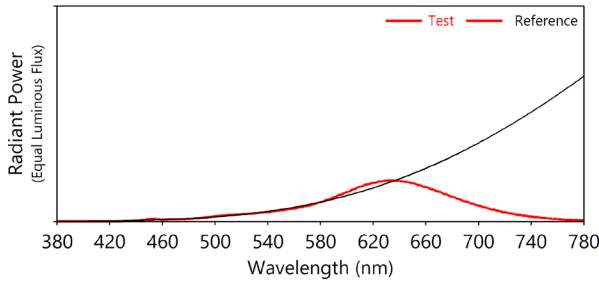
Color Rendering Index (CRI): Ra = 91.4
Colour Fidelity Index: Rf = 92
Gamut Index: Rg = 97
Purity: 0.8703
Color Ratio: Kr=60.2% Kg=35.6% Kb=4.3%
Color Tolerance (SDCM): 56.1
Bandwidth: 103.3 nm
Radiant Flux: 0.095 W
Photosynthetically Active Radiation (PAR): 0.09W
Photosynthetic Photon Flux (PPF): 0.45 μmol/s

R1=94	R2=100	R3=95	R4=94	R5=96	R6=93	R7=86	R8=75
R9=54	R10=100	R11=99	R12=86	R13=97	R14=98	R15=86	



IES TM30-18 COLOR RENDERING REPORT

1800K CCT, 19mA, $T_j=25^\circ\text{C}$





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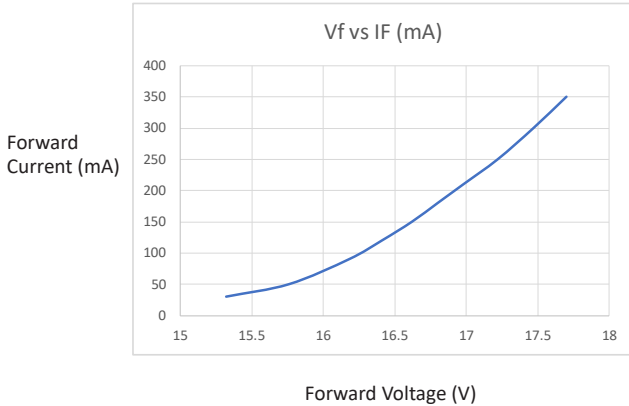
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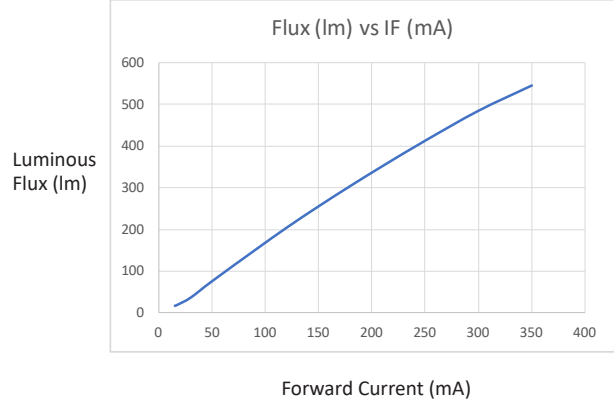
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PERFORMANCE CURVES

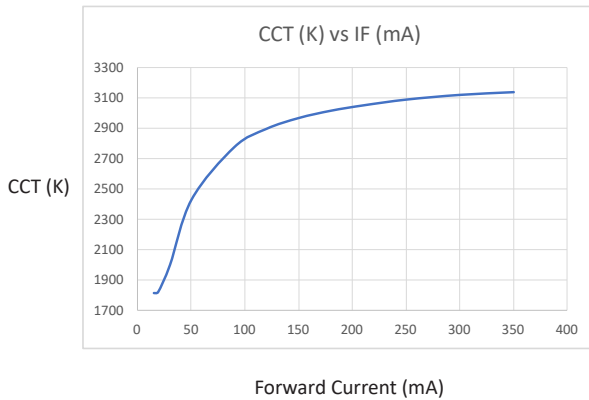
Test Condition: 25°C



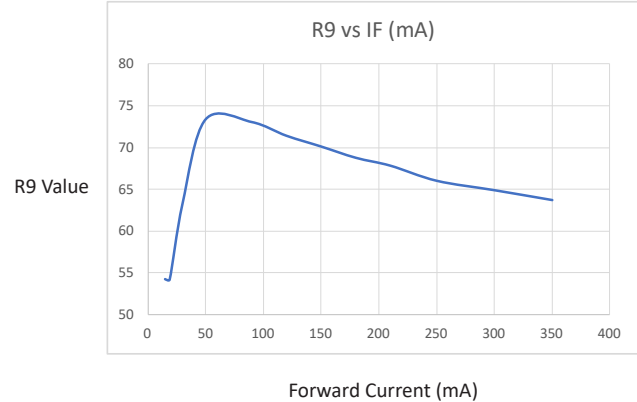
Test Condition: 85°C



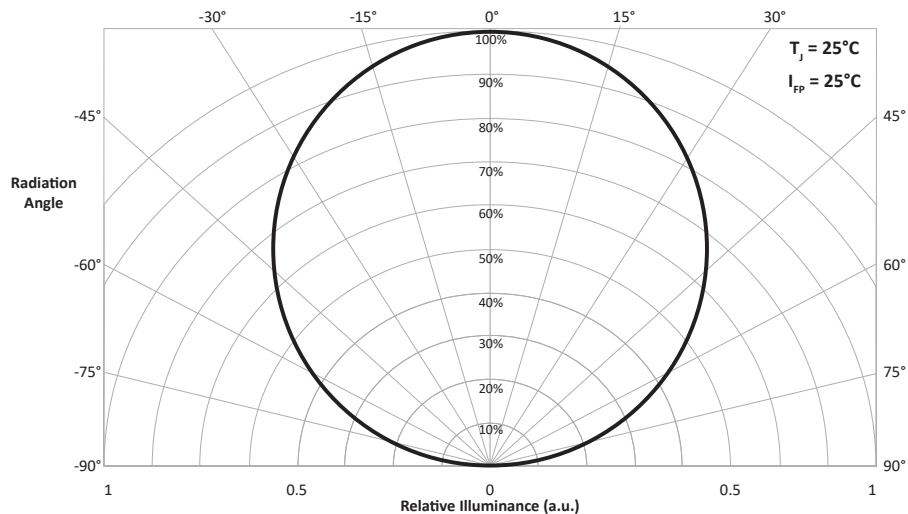
Test Condition: 85°C



Test Condition: 85°C



POLAR RADIATION PATTERN





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PRECAUTIONS FOR USE

Caution: Do not touch or apply pressure to the light emitting surface (LES) of the COB. Doing so may damage the LED array.

Do not mount reflectors or optics in contact with the LES.

Contact with surfaces of the COB outside of the LES is acceptable for mounting optical devices.

Do not handle COB with bare hands - oils from skin may contaminate the light emitting surface and affect light output.

Apply thermal grease between COB and fixture housing / heat sink to ensure efficient dissipation of excess heat.

Electrostatic discharge (ESD) and excessive transient voltages may damage the COB. Take precautions such as grounded wrist straps and ESD mats when installing / handling the COB.

STORAGE CONDITION

Before opening sealed packaging:

- Temperature 5°-30°C
- Relative humidity less than 60%.

After opening:

- Temperature 5°-30°C
- Relative humidity less than 60%.
- Apply solder within one week of opening.
- LED should be kept in moisture proof foil bag with silica gel desiccant packet.

CHEMICAL COMPATIBILITY

Certain compounds can be absorbed by the resin that encapsulates the light emitting surface, potentially causing reactions that may reduce light output or physically damage the COB. The following compounds are not recommended for use with QLUX COBs:

- Acetates
- Acetic Acid
- Acrylates
- Aldehydes
- Amines
- Benzene
- Dienes
- Ethers
- Cl, F or Br compounds
- Liquid Hydrocarbons
- Ketones
- Nitric Acid
- Phosphoric Acid
- Potassium Hydroxide
- Siloxanes, Fatty Acids
- Sodium Hydroxide
- Sulfur Compounds
- Sulfuric Acid
- Tolulene
- Xylenes

CLEANING

Do not clean COBs with water, benzene and/or thinner. **Use isopropyl alcohol (IPA) only.** If another solvent is used, it may cause the LED package / resin to be damaged. Do not clean COBs with an ultrasonic cleaner.

To clean the COB, moisten a clean non-abrasive cloth with isopropyl alcohol, avoiding excess liquid / drips. Gently wipe COB surfaces (**Do not apply pressure to the light emitting surface**) to remove any dust, finger prints, etc..