INTELLIGENT LED SOLUTIONS

INTEMATIX

ChromaLit™ Linear (Polycarbonate)

CL-XXX-XXX-PC Series

Product Overview

Intematix Remote Phosphor light source will change the way you approach solid-state lighting design. ChromaLit™ offers beautiful light quality with unprecedented design freedom, colour control, system flexibility and efficiency. ChromaLit™ is ideal for the most efficient and innovative lighting system designs.

Compared to conventional LED designs, where Blue chips are coated with a Phosphor compound, the ChromaLit™ collection leverages a Phosphor composite separated from the Blue LED energy source. This architecture provides unparalleled design freedom, more efficient manufacturing processes, exceptional light quality and up to 30 percent higher system efficacy.

Applications

- Downlights
- Spots and modules
- Modular shapes for linear lighting
- Retrofit lamps
- Task lighting
- High bay
- Panel lighting
- Coloured lighting for signals and vehicles

Technical Features

- Unprecedented design freedom for solid state lighting products and systems
- Customisable shape, size and CCT colour temperature (k)
- Custom saturated colours available
- Powered by radiant energy from Blue LEDs, lasers and OLEDs
- Enable streamlined supply and production of luminaires
- Glare free and uniform light quality
- High CRI
- Consistent colour matching
- Up to 30% higher system efficacy compared to conventional LED lighting designs

LED Light for you powered by OSRAM CERTIFIED PARTNER

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DATASHEET

Product Nomenclature

The part number designation for the CL series is explained as follows:

CL-xxx-yyyy-zz

Where:

XXX–Designates first digit in CRI followed by the first two digits in colour temperature K (CCT)

YYYY–Designates dimension

ZZ–Designates product family (PC for Polycarbonate substrate/XT for Glass substrate)

Example:

CL-830-R75-XT represents ChromaLit™ 80CRI, 3000K CCT, 75mm Round, glass substrate product family

ChromaLit™ Square

Dimension Designation	Example Application	Typical Lumen Output (lm)	Diameter (mm)	Thickness (mm)	CCT (K)	lm/ Wrad 2
CL-XXX-S21-PC	Single LED	110-220	21.0 x 21.0	2.1	2700 - 5000	161 - 230
CL-XXX-S40-PC	Downlight	440-800	40.0 x 40.0	2.1	2700 - 5000	161 - 230
CL-XXX-S55-PC	Downlight	730-1300	55.0 x 55.0	2.1	2700 - 5000	161 - 230
CL-XXX-S65-PC	Downlight	1100-2000	65.0 x 65.0	2.1	2700 - 5000	161 - 230
CL-XXX-S95-PC	Downlight	2200-4000	95.0 x 95.0	2.1	2700 - 5000	161 - 230
CL-XXX-S120-PC	Downlight	3600-6600	120.0 x 120.0	2.1	2700 - 5000	161 - 230
CL-XXX-S200-PC	High bay	14000-16500	200.0 x 200.0	2.1	3000 - 5000	202 - 230

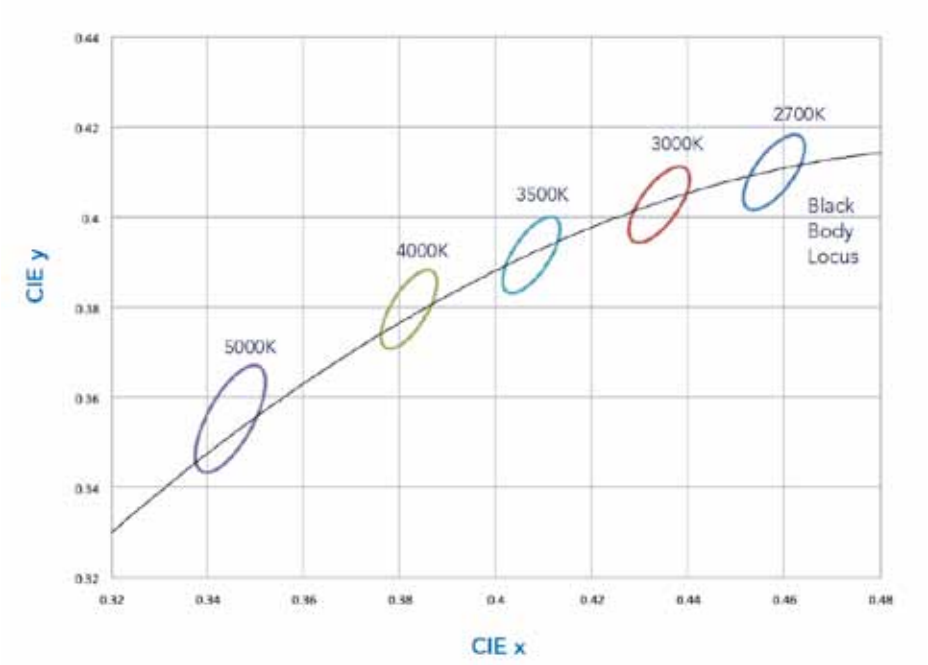
ChromaLit™ Linear

Dimension Designation	Example Application	Typical Lumen Output (lm)	Dimensions (mm)	Thickness (mm)	CCT (K)	lm/ Wrad 2
CL-827-L225-PC	Task/Linear/Panel Lighting	950-2400	305.0 x 22.5	2.1	2700 - 5000	180 - 230
CL-830-L125-PC	Task/Linear/Panel Lighting	950-1400	305.0 x 12.5	2.1	3000 - 5000	202 - 230

ChromaLit™ Panel

Dimension Designation	Example Application	Typical Lumen Output (lm)	Dimensions (mm)	Thickness (mm)	CCT (K)	lm/ Wrad 2
CL-XXX-P215-PC	Custom	15000-27500	305.0 x 215.0	2.1	2700 - 5000	161 - 230

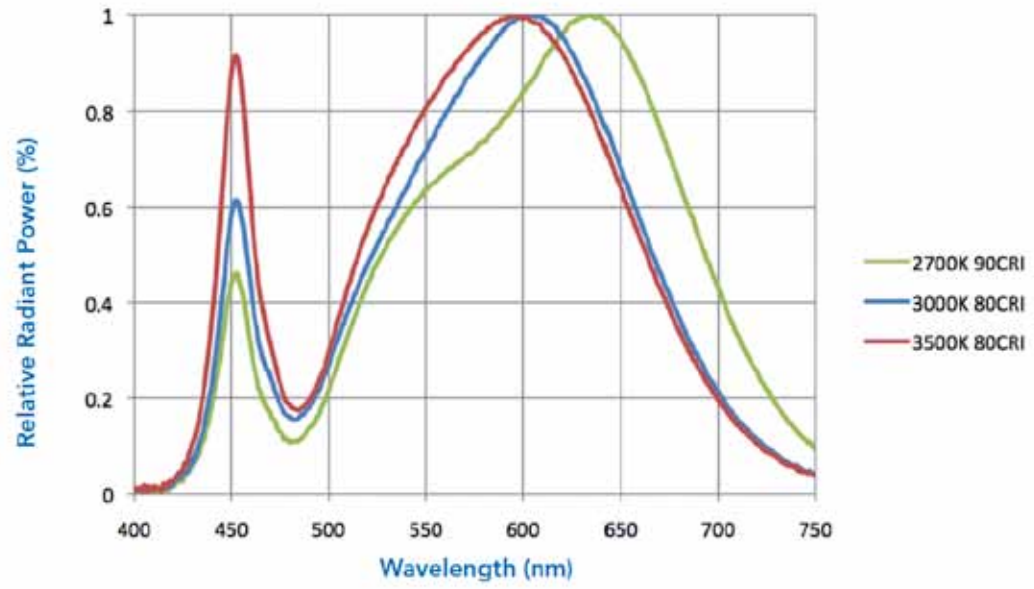
ChromaLit™ Binning Diagram

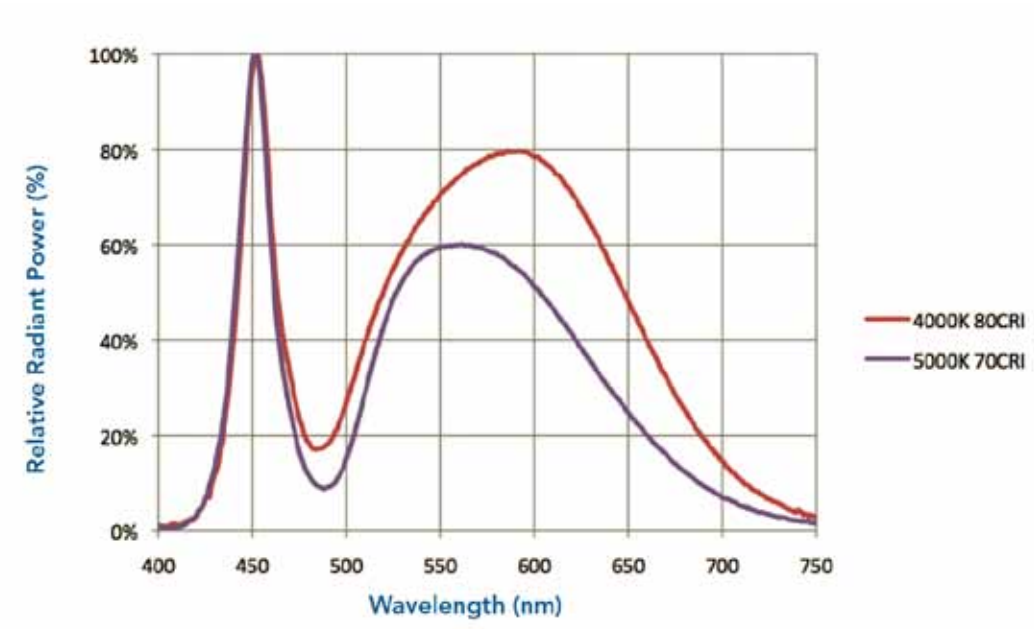


Centre Points

Colour Temp (k)	x	y
2700K	0.4578	0.4101
3000K	0.4338	0.403
3500K	0.4073	0.3917
4000K	0.3818	0.3797
5000K	0.3447	0.3553

Relative Spectral Power Distribution





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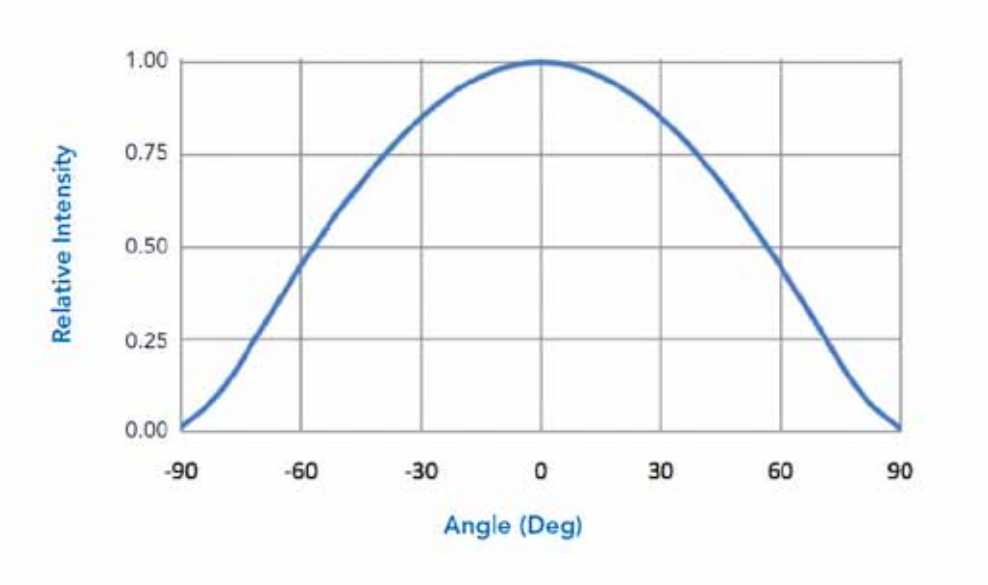
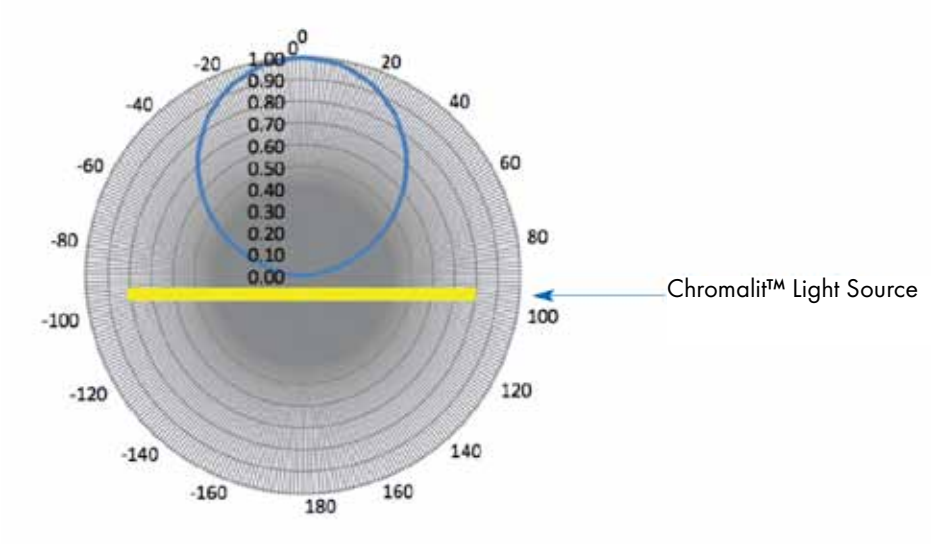
Intensity Distribution

Luminous Intensity Distribution Diagram[1]



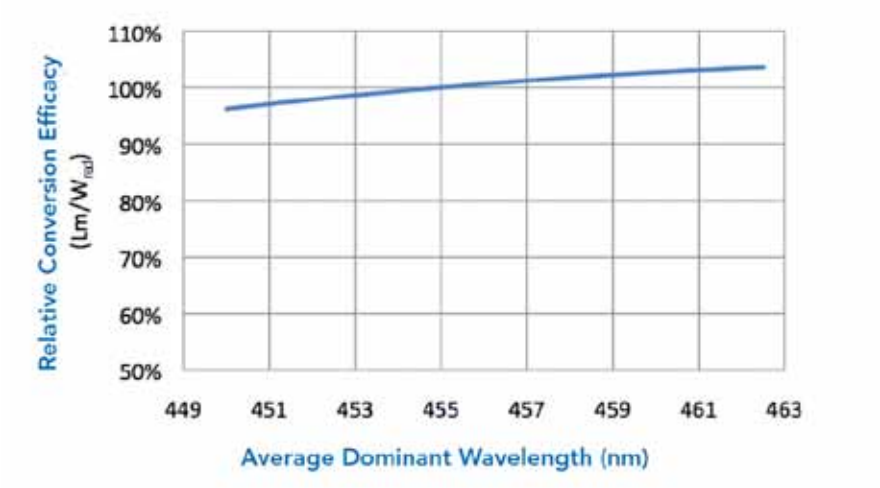
[1]Intensity distribution pattern is characterized using CL-830-LR-PC products and reference design.

Luminous Intensity Polar Diagram



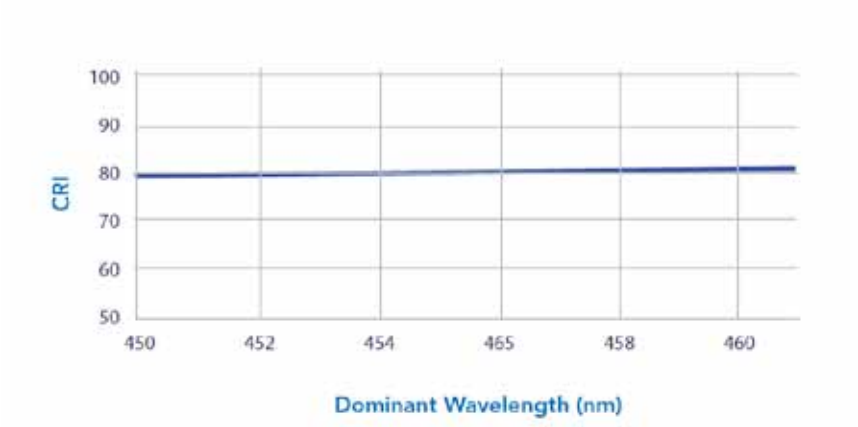
Performance Characteristics over Wavelength

Relative Conversion Efficacy over Wavelength[1]



[1]Relative conversion efficacy does not reflect performance of blue LED over dominant wavelength.

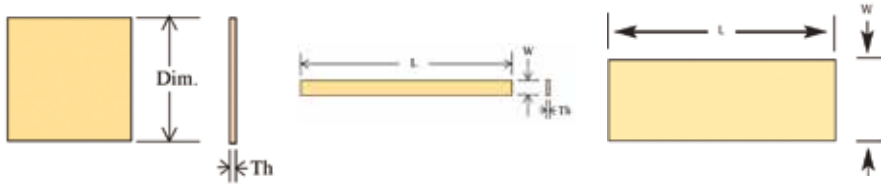
Minimum CRI over Wavelength



Relative CIE Chromaticity Shift over Wavelength

	Average Dominant Wavelength				
	450nm	452.5nm	455nm	457.5nm	460nm
Δ CIE X Coordinate	-0.003	-0.002	0	0.001	0.001
Δ CIE Y Coordinate	-0.014	-0.007	0	0.005	0.008

Mechanical Characteristics



Additional Mechanical Characteristics

Dimension Designation	Example Application
Thickness	2.1mm ±0.1mm
Substrate	Polycarbonate
Orientation	Glossy side out, Matt side facing LED
Coefficient of Thermal Expansion	$7x10^{-5}$/°C
Off-State Colour (Glossy side, representation using PANTONE colour match system)	PANTONE 7403 (2700K 90 CRI)
	PANTONE 129 (3000K 80 CRI)
	PANTONE 106 (4000K 80 CRI)
	PANTONE 602 (5000K 70 CRI)

ChromaLit™ products ship with a laminated protection tape on the non-Phosphor side of the product. Remove blue protection tape before use

Off-State Colour

PANTONE 7403 (2700K 90 CRI)

PANTONE 129 (3000K 80 CRI)

PANTONE 106 (4000K 80 CRI)

PANTONE 602 (5000K 70 CRI)

Maximum Ratings

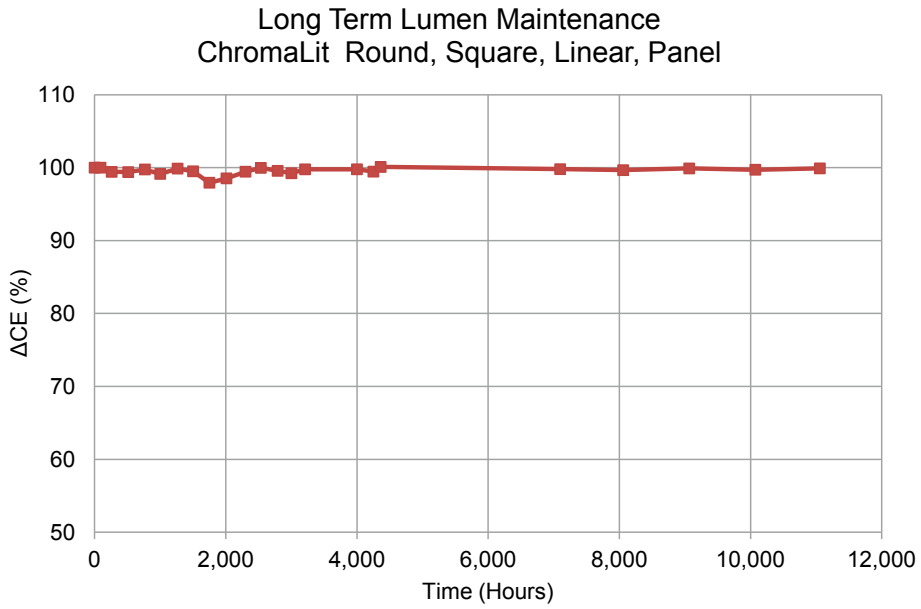
Description	Maximum Value
Maximum operating temperature	95°C
Minimum operating temperature	-40°C
Max storage temperature	95°C
Minimum storage temperature	-40°C

Reliability Data

Typical Values

Description	Typical Values
Lumen maintenance	L70 50K hours at 95°C
Storage life	50K hrs
Storage humidity (non-condensing)	90%

Lumen Maintenance vs. Operating Life



Operating Conditions

- ChromaLit™ Square, Panel, Linear, Round
- 25˚C Ambient temperature
- 95°C ChromaLit™ inner surface temperature

Handling Considerations

As a dirty or damaged Phosphor layer could result in alteration in product performance, ChromaLit™ light sources should be handled similarly to most optical components . It is best to handle the parts at the edges and prevent mechanical abrasion. If epoxies are used, they must be kept off of the entrance or exit apertures of ChromaLit™, since they could greatly impact performance. If parts require cleaning, use a lint free tissue, isopropanol (IPA), or mild detergent. Dry using compressed air.

ILS recommended LED solutions

Available soon

ILS recommended Chamber solutions

Available soon

Safety Information

- The LED module itself and all its components must not be mechanically stressed.
- Assembly must not damage or destroy conducting paths on the circuit board.
- The mounting of the module is carried out by attaching it at the mounting holes. Metal mounting screws must be insulated with synthetic washers to prevent circuit board damage and possible short circuiting.
- To avoid mechanical damage to the connecting cables, the boards should be attached securely to the intended substrate. Heavy vibration should be avoided.
- Observe correct polarity!
- Depending on the product, incorrect polarity will lead to emission of red or no light. The module can be destroyed!
- Pay attention to standard ESD precautions when installing the LED.
- LEDs, as manufactured, have no conformal coating and therefore offer no inherent protection against corrosion.
- Damage by corrosion will not be accepted as a materials defect claim. It is the user's responsibility to provide suitable protection against corrosive agents such as moisture and condensation and other harmful elements.
- For outdoor usage, a housing is definitely required to protect the board against environmental influences. The design of the housing must correspond to the IP standards in the application. It is also the responsibility of the user to ensure any housings or modifications keep the Tc junction temperature to within stated ranges.
- To also ease the luminaire/installation approval, electronic control gear for LED or LED modules should carry the CE mark and be ENEC certified. In Europe the declarations of conformity must include the following standards: CE: EC 61374-2-13, EN 55015, IEC 61547 and IEC 61000-3-2 - ENEC: 61374-2-13 and IEC/EN 62384.
- The evaluation of eye safety occurs according to the standard IEC 62471:2006 ("photobiological safety of lamps and lamp systems"). Within the risk grouping system of this CIE standard, the LED specified in this data sheet falls into the class "moderate risk" (exposure time 0.25s). Under real circumstances (for exposure time, eye pupils, observation distance), it is assumed that no endangerment to the eye exists from these devices. As a matter of principle, however, it should be mentioned that intense light sources have a high secondary exposure potential due to their blinding effect. As is also true when viewing other bright light sources (e.g. headlights), temporary reduction in visual acuity and afterimages can occur, leading to irritation, annoyance, visual impairment and even accidents, depending on the situation.

For further information please contact ILS

The values contained in this data sheet can change due to technical innovations. Any such changes will be made without separate notification.

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