



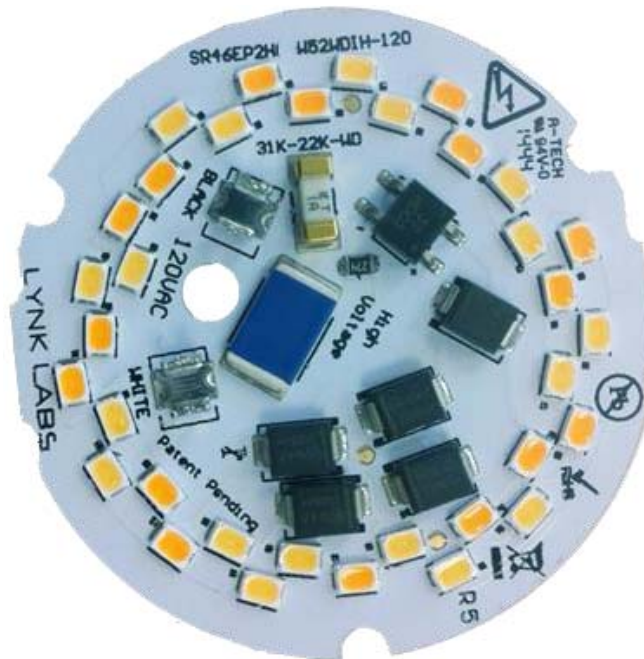
SnapBrite SR46-9W-120

120V Direct Connect LED MODULE

46mm dia. 9 Watt 640lm 120V

SINGLE-CCT or WARM ON DIM
LOW THD DIMABLE MODULE

Technical Data Sheet





Direct Connect AC LED lighting technology

SnapBrite™ SR46-9W-120



Description

SnapBrite high voltage AC LED modules are fast, easy and reliable LED light sources for lighting OEMs in need of LED solutions that offer direct AC line voltage connectivity.

Lynk's patented AC LED technology eliminates the requirement for an expensive, bulky and failure prone AC – DC power supply or driver. Delivering efficiency, reliability and a high power factor, SnapBrite modules can be used by lighting manufacturers in many types of fixture as an effective replacement for energy hungry incandescent or CFL lamps. Additionally, the modules will dim with many popular leading and trailing edge phase cut dimmers.

Unlike other AC LED light sources, these SnapBrite modules offer a very unique but optional Warm-On-Dim feature that can change CCT from cooler to warmer as the dimming level changes. This mimics the way a traditional light bulb or halogen lamp becomes warmer to look at as the light level reduces. WOD is a great feature for hospitality and residential applications.

Lynk Low THD Technology provides under 20% ATHD and a power factor of better than 0.97 for applications demanding minimal EMC disturbance.

Look for the Lynk Labs name or this private label mark to ensure you are always backed by Lynk Labs high quality AC LED technology, IP, and reliability. Lynk Labs - Your AC LED Experts!



Features

- 120V Direct Connect - No Drivers/PSU's
- Lower Cost - Higher Reliability AC LED Module
- Dimmable
- Warm-On-Dim Option
- Work with most existing AC Dimmers
- High Efficiency
- High Power Factor >0.97
- Low THD <20%
- Significant Energy Savings
- Long Operating Life
- Reliable, Fast & Easy

Applications

- Flush mounts,
- Down Lighting
- Ceiling Fans,
- Indoor/Outdoor General line voltage Illumination
- Ideal for commercial, hospitality and residential

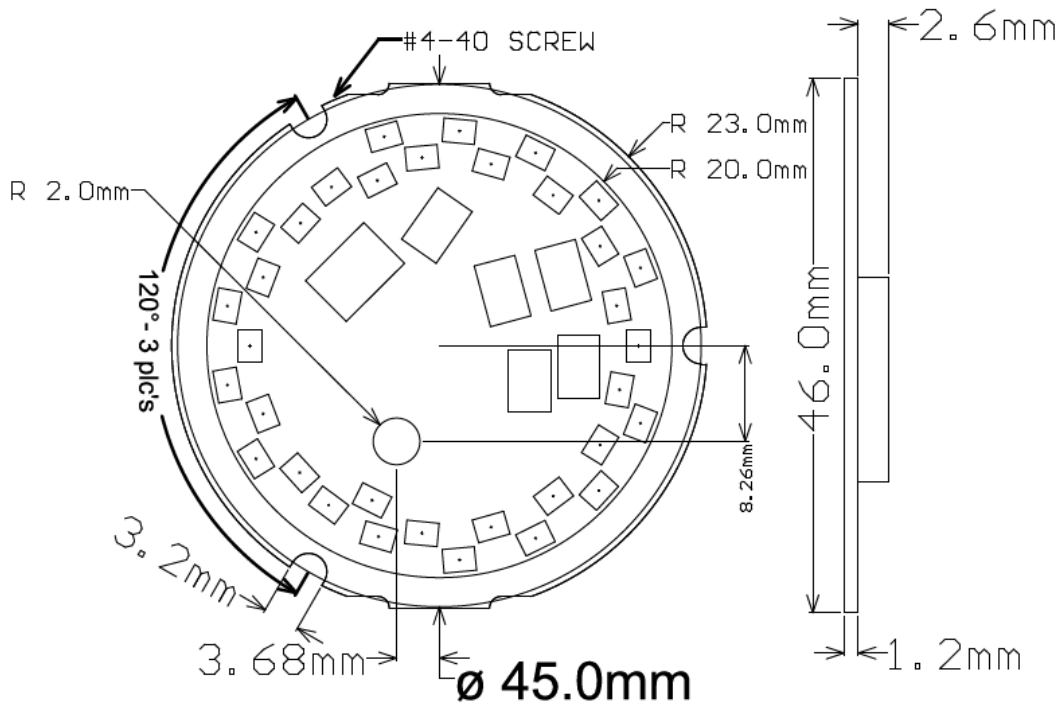


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3. Mechanical Dimensions



- Notes :
1. All dimensions are in millimeters.
 2. Tolerance is $\pm 0.05\text{mm}$ unless otherwise noted.



4. Electrical & Optical Characteristics

ITEM	SYMBOL	CONDITION	UNIT	Min	Typ	Max
Drive Voltage	V _f	line voltage	V _{rms}	64	120	132
Viewing Angle	2θ _{1/2}		deg	120		
Operating Temperature at test point	T _o (T _c)	I _f =82 mA _{rms}	°C	70		
Typical Operating Power	W _T	I _f =82 mA _{rms}	W		9	
Total Harmonic Distortion	ATHD	V _f =120 V _{rms}	%		<25%	
Luminous Flux (3000K)	Φ	V _f =120 V _{rms}	lm		639	
Luminous Efficacy (3000K)	η _v	V _f =120 V _{rms}	lm/w		71	

*Measurement Uncertainty of the Luminous Flux: $\pm 10\%$
 *Values given are for specified drive current at 25°C case temperature



Module Variants

MODEL NUMBER	CCT	CRI	VAC	POWER	LUMEN	lm/W
SR46EP2H09W27KIH-120	2700K	90	120	9	606	67
SR46EP2H09W30KIH-120	3000K	90	120	9	641	71
SR46EP2H09W40KIH-120	4000K	90	120	9	675	75

Other CCTs & 80 CRI Option may be Available to Special Order

Warm on Dim Variants

MODEL NUMBER	Min CCT	Max CCT	CRI	VAC	POWER	LUMEN (no dimmer)	lm/W
SR46EP2H09WS42WDIH-120	2200K	3000K	90	120	9	600	67
SR46EP2H09WS52WDIH-120	2200K	3500K	90	120	9	620	69

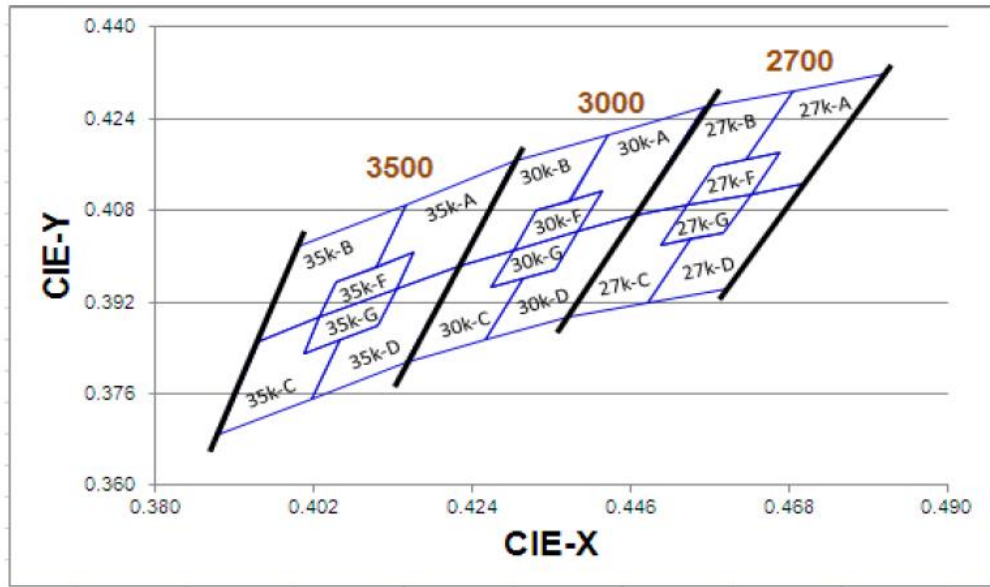
Other CCTs & 80 CRI Option may be Available to Special Order

5. Absolute Maximum Ratings (@ Ta=25°C)

ITEM	SYMBOL	ABSOLUTE MAXIMUM RATING	UNIT
Power Dissipation	Pd	11	W
A.C. Current	If	90	mArms
AC Voltage	Vf	130	V
Operating Temperature	To	-25 ~ +100	°C
Storage Temperature	Ts	-40 ~ +100	°C
Soldering Temperature(Hand)	Tsld	370	°C

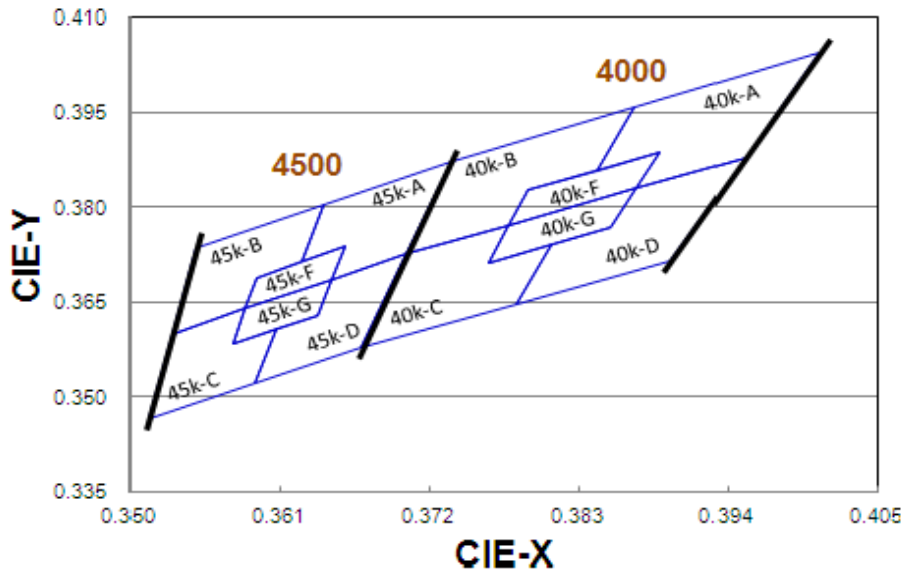


6. CIE Chromaticity Coordinates



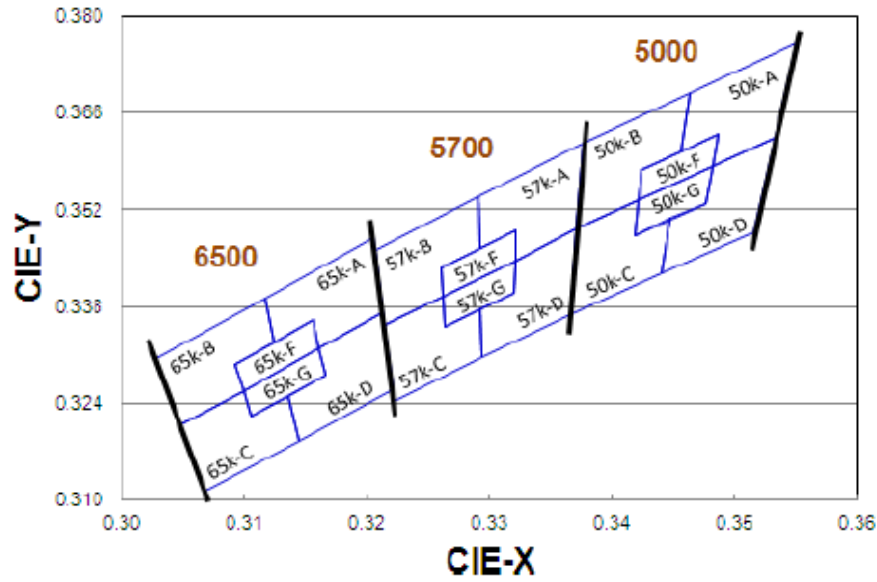
CCT	Bin Code	CIE x	CIE y	Bin Code	CIE x	CIE y	
2700K	27K-A	0.4813	0.4319	27K-D	0.4700	0.4126	
		0.4687	0.4289		0.4588	0.4041	
		0.4621	0.4169		0.4544	0.4030	
		0.4667	0.4180		0.4483	0.3919	
		0.4627	0.4109		0.4593	0.3944	
		0.4700	0.4126				
	Reference Range: 2580K-2700K						
	27K-B	0.4687	0.4289	27K-C	0.4465	0.4071	
		0.4562	0.4260		0.4373	0.3893	
		0.4465	0.4071		0.4483	0.3919	
		0.4539	0.4088		0.4544	0.4030	
		0.4576	0.4158		0.4502	0.4020	
		0.4621	0.4169		0.4539	0.4088	
	Reference Range: 2700K-2870K						
	27K-F	0.4667	0.4180	27K-G	0.4627	0.4109	
		0.4576	0.4158		0.4539	0.4088	
		0.4539	0.4088		0.4502	0.4020	
		0.4627	0.4109		0.4588	0.4041	
Reference Range: 2665K-2770K							
3000K	30K-A	0.4562	0.4260	30K-D	0.4465	0.4071	
		0.4430	0.4212		0.4388	0.4043	
		0.4375	0.4096		0.4355	0.3977	
		0.4422	0.4113		0.4311	0.3962	
		0.4388	0.4043		0.4259	0.3853	
		0.4465	0.4071		0.4373	0.3893	
	Reference Range: 2870K-3000K						
	30K-B	0.4430	0.4212	30K-C	0.4221	0.3984	
		0.4299	0.4165		0.4147	0.3814	
		0.4221	0.3984		0.4259	0.3853	
		0.4297	0.4011		0.4311	0.3962	
		0.4328	0.4079		0.4267	0.3946	
		0.4375	0.4096		0.4297	0.4011	
	Reference Range: 3000K-3220K						
	30K-F	0.4422	0.4113	30K-G	0.4388	0.4043	
		0.4328	0.4079		0.4297	0.4011	
		0.4297	0.4011		0.4267	0.3946	
		0.4388	0.4043		0.4355	0.3977	
Reference Range: 2960K-3080K							

CCT	Bin Code	CIE x	CIE y	Bin Code	CIE x	CIE y	
3500K	35K-A	0.4299	0.4165	35K-D	0.4221	0.3984	
		0.4148	0.4090		0.4134	0.3943	
		0.4106	0.3981		0.4108	0.3878	
		0.4159	0.4007		0.4057	0.3853	
		0.4134	0.3943		0.4018	0.3752	
		0.4221	0.3984		0.4147	0.3814	
	Reference Range: 3220K-3500K						
	35K-B	0.4148	0.4090	35K-C	0.3943	0.3853	
		0.3996	0.4015		0.3889	0.3690	
		0.3943	0.3853		0.4018	0.3752	
		0.4029	0.3893		0.4057	0.3853	
		0.4051	0.3954		0.4006	0.3829	
		0.4106	0.3981		0.4029	0.3893	
	Reference Range: 3500K-3710K						
	35K-F	0.4159	0.4007	35K-G	0.4134	0.3943	
		0.4051	0.3954		0.4029	0.3893	
		0.4029	0.3893		0.4006	0.3829	
		0.4134	0.3943		0.4108	0.3878	
Reference Range: 3360K-3550K							



CCT	Bin Code	CIE x	CIE y	Bin Code	CIE x	CIE y	
4000K	40K-A	0.4006	0.4044	40K-D	0.3952	0.3880	
		0.3871	0.3959		0.3873	0.3831	
		0.3843	0.3858		0.3854	0.3768	
		0.3890	0.3887		0.3810	0.3741	
		0.3873	0.3831		0.3784	0.3647	
		0.3952	0.3880		0.3898	0.3716	
	Reference Range: 3700K-3970K						
	40K-B	0.3871	0.3959	40K-C	0.3703	0.3726	
		0.3736	0.3874		0.3670	0.3578	
		0.3703	0.3726		0.3784	0.3647	
		0.3779	0.3773		0.3810	0.3741	
		0.3793	0.3828		0.3764	0.3713	
		0.3843	0.3858		0.3779	0.3773	
	Reference Range: 3970K-4270K						
	40K-F	0.3890	0.3887	40K-G	0.3873	0.3831	
		0.3793	0.3828		0.3779	0.3773	
		0.3779	0.3773		0.3764	0.3713	
		0.3873	0.3831		0.3854	0.3768	
Reference Range: 3870K-4080K							

CCT	Bin Code	CIE x	CIE y	Bin Code	CIE x	CIE y	
4500K	45K-A	0.3736	0.3874	45K-D	0.3703	0.3726	
		0.3642	0.3805		0.3648	0.3686	
		0.3626	0.3714		0.3637	0.3630	
		0.3658	0.3738		0.3607	0.3608	
		0.3648	0.3686		0.3591	0.3522	
		0.3703	0.3726		0.3670	0.3578	
	Reference Range: 4260K-4500K						
	45K-B	0.3642	0.3805	45K-C	0.3530	0.3601	
		0.3548	0.3736		0.3512	0.3465	
		0.3530	0.3601		0.3591	0.3522	
		0.3584	0.3640		0.3607	0.3608	
		0.3592	0.3689		0.3575	0.3585	
		0.3626	0.3714		0.3584	0.3640	
	Reference Range: 4500K-4745K						
	45K-F	0.3658	0.3738	45K-G	0.3648	0.3686	
		0.3592	0.3689		0.3584	0.3640	
		0.3584	0.3640		0.3575	0.3585	
		0.3648	0.3686		0.3637	0.3630	
Reference Range: 4400K-4580K							



CCT	Bin Code	CIE x	CIE y	Bin Code	CIE x	CIE y	
5000K	50K-A	0.3551	0.3760	50K-D	0.3533	0.3624	
		0.3464	0.3688		0.3482	0.3583	
		0.3456	0.3604		0.3477	0.3530	
		0.3487	0.3629		0.3448	0.3507	
		0.3482	0.3583		0.3441	0.3428	
		0.3533	0.3624		0.3515	0.3487	
	Reference Range:4745K-5000K						
	50K-B	0.3464	0.3688	50K-C	0.3371	0.3493	
		0.3376	0.3616		0.3366	0.3369	
		0.3371	0.3493		0.3441	0.3428	
		0.3422	0.3533		0.3448	0.3507	
		0.3425	0.3579		0.3418	0.3483	
		0.3456	0.3604		0.3422	0.3533	
	Reference Range:5000K-5310K						
	50K-F	0.3487	0.3629	50K-G	0.3482	0.3583	
		0.3425	0.3579		0.3422	0.3533	
		0.3422	0.3533		0.3418	0.3483	
		0.3482	0.3583		0.3477	0.3530	
	Reference Range:4910K-5120K						

CCT	Bin Code	CIE x	CIE y	Bin Code	CIE x	CIE y	
5700K	57K-A	0.3376	0.3616	57K-D	0.3371	0.3493	
		0.3292	0.3539		0.3321	0.3447	
		0.3292	0.3464		0.3320	0.3401	
		0.3321	0.3490		0.3293	0.3377	
		0.3321	0.3447		0.3294	0.3306	
		0.3371	0.3493		0.3366	0.3369	
	Reference Range:5310K-5700K						
	57K-B	0.3292	0.3539	57K-C	0.3215	0.3353	
		0.3207	0.3462		0.3222	0.3243	
		0.3215	0.3353		0.3294	0.3306	
		0.3262	0.3395		0.3293	0.3377	
		0.3261	0.3436		0.3263	0.335	
		0.3292	0.3464		0.3262	0.3395	
	Reference Range:5700K-6020K						
	57K-F	0.3321	0.3490	57K-G	0.3321	0.3447	
		0.3261	0.3436		0.3262	0.3395	
		0.3262	0.3395		0.3263	0.3350	
		0.3321	0.3447		0.3320	0.3401	
	Reference Range:5520K-5780K						

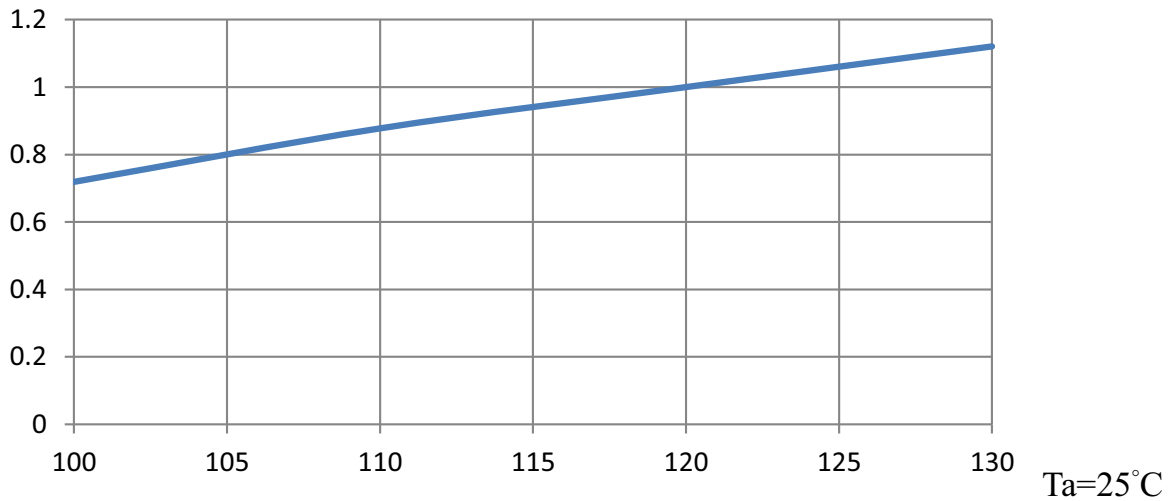
CCT	Bin Code	CIE x	CIE y	Bin Code	CIE x	CIE y	
6500K	65K-A	0.3205	0.3481	65K-D	0.3213	0.3371	
		0.3117	0.3393		0.3161	0.3320	
		0.3125	0.3328		0.3166	0.3281	
		0.3157	0.3360		0.3136	0.3251	
		0.3161	0.3320		0.3145	0.3187	
		0.3213	0.3371		0.3221	0.3261	
	Reference Range:6020K-6500K						
	65K-B	0.3117	0.3393	65K-C	0.3048	0.3209	
		0.3028	0.3304		0.3068	0.3113	
		0.3048	0.3209		0.3145	0.3187	
		0.3100	0.3259		0.3136	0.3251	
		0.3093	0.3297		0.3106	0.3222	
		0.3125	0.3328		0.31	0.3259	
	Reference Range:6500K-7050K						
	65K-F	0.3157	0.3360	65K-G	0.3161	0.3320	
		0.3093	0.3297		0.3100	0.3259	
		0.3100	0.3259		0.3106	0.3222	
		0.3161	0.3320		0.3166	0.3281	
	Reference Range:6300K-6690K						

Note:
 1. The value is based on driving current by 30mA.
 2. Tolerance of Chromaticity Coordinates: ±0.01.

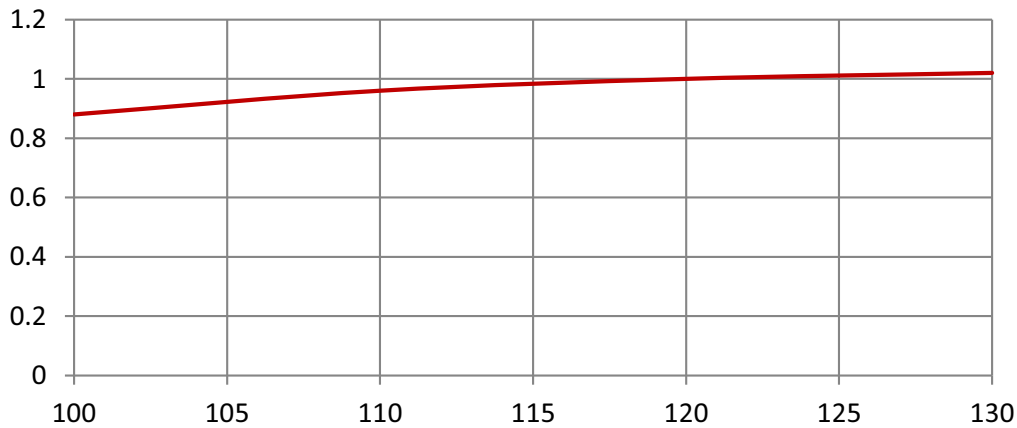


7. Typical Electrical & Optical Characteristic Curves

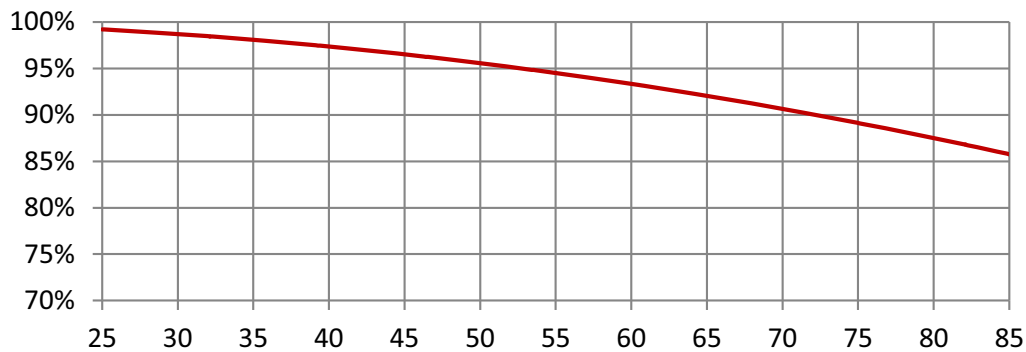
Relative Power vs Voltage

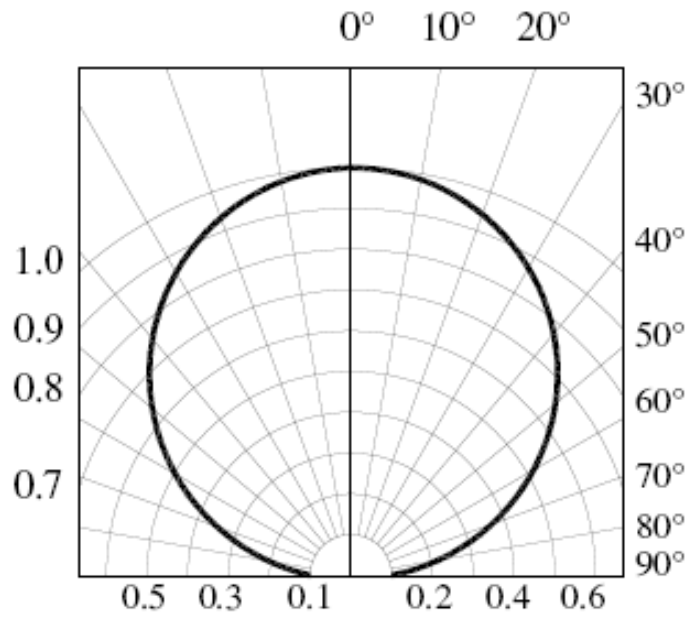


Relative Luminous Flux vs. Voltage

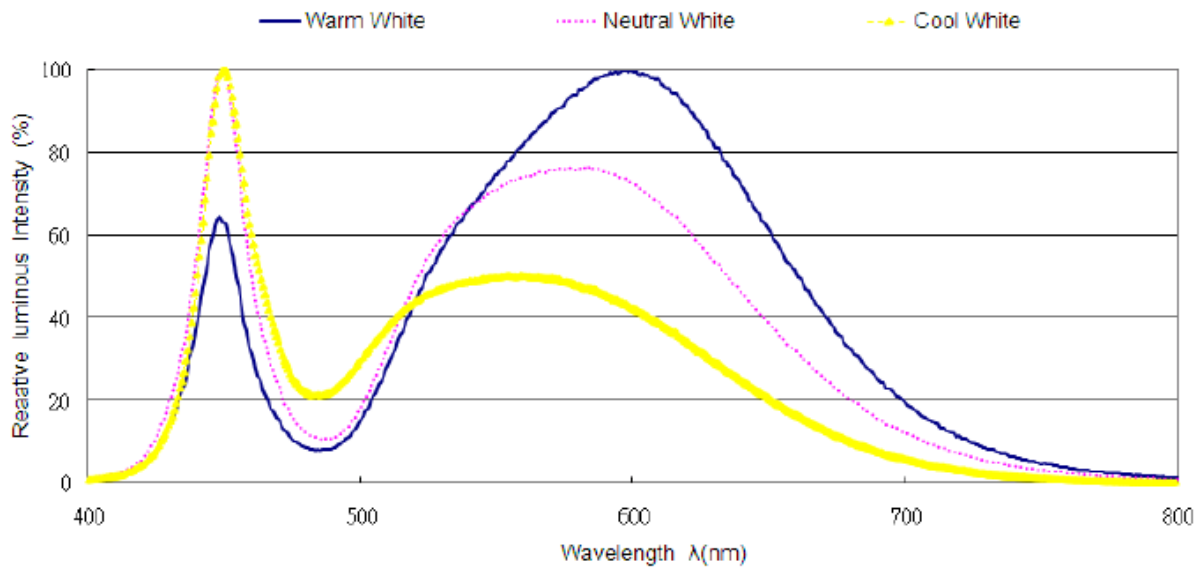


Lumen Thermal de-rating curve



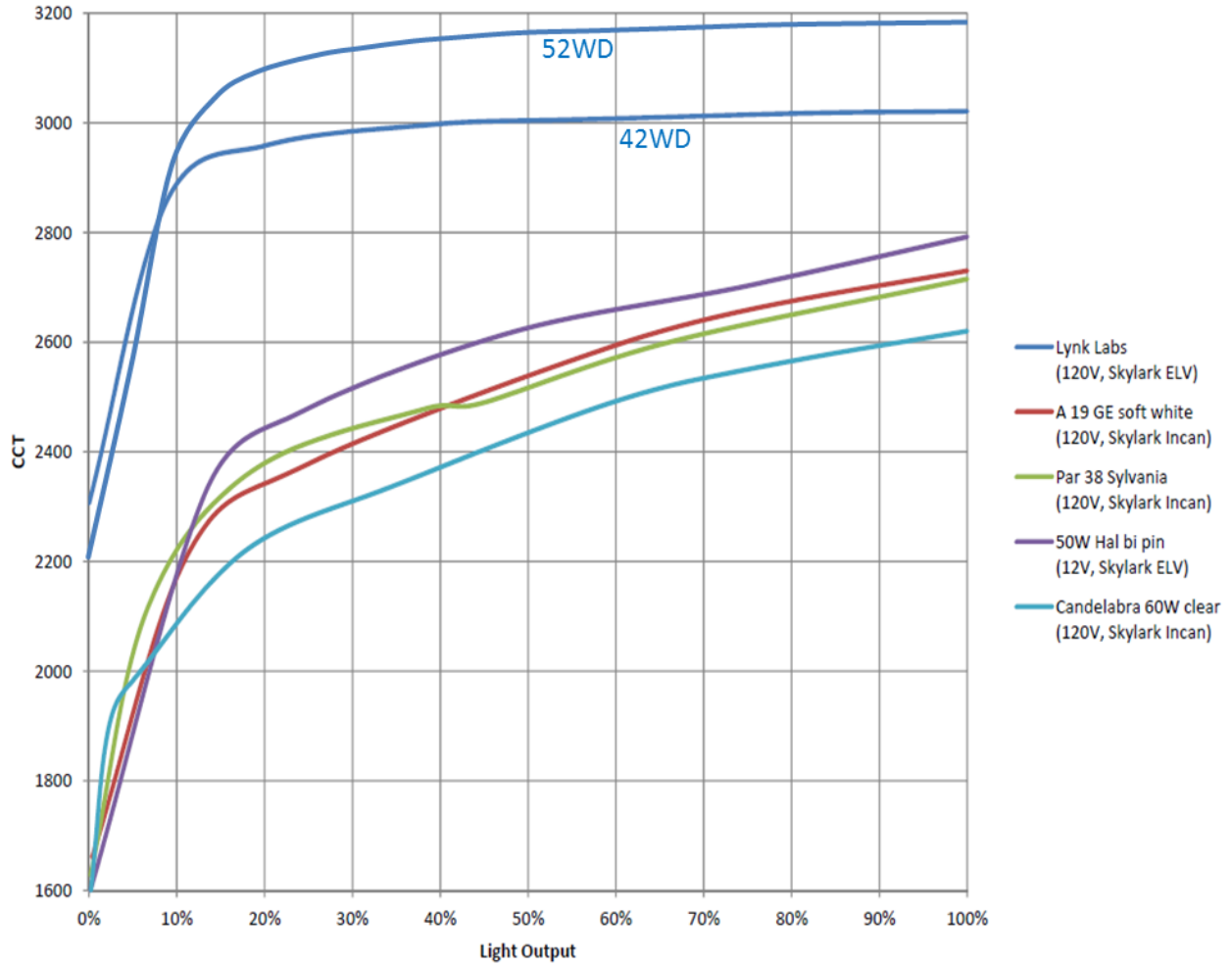


Spectrum Distribution

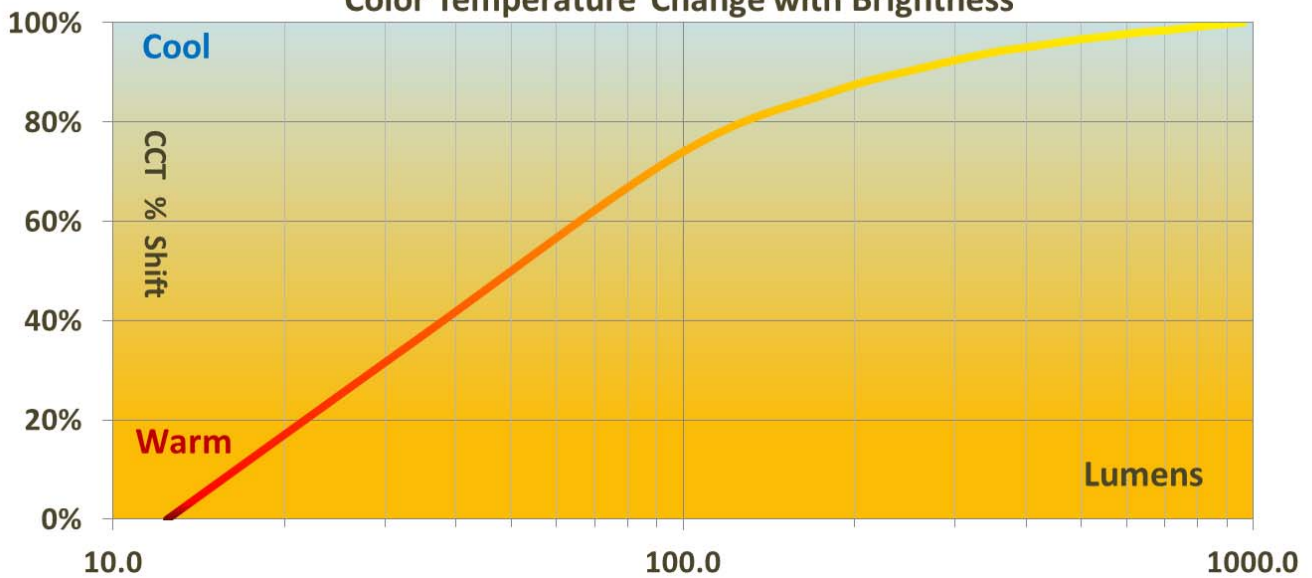




Dimming Cycle



Color Temperature Change with Brightness





8.Part Number Identification

04/08/2014

Part Number											
Product Code	Shape	Dimension/Diameter (mm)	Internal Codes	Module Power	aTHD	CCT (XXX) Warm on Dim (XYWD)	Connection Type	CRI	Input Voltage	Miscellaneous	Revision Level
S	R	46	EP2H	09W		52WD	IH		120V		R1

Model Number											
Product Code	Shape	Dimension/Diameter	LED Indicator	Module Power	aTHD	CCT (XXX) Warm on Dim (XYWD)	Connection Type	CRI	Input Voltage	Miscellaneous	
S	R	46		09W		52WD	IH		120V		

Product Code	
S	= SnapBrite™
T	= Tesla™
G	= GeoLite™
B	= BriteDriver®

Shape	
R	= Round
S	= Square
T	= Star
L	= Linear

Dimension/Diameter		
L	=	X X X
W	=	Y Y Y
D	=	Z Z Z

Module Power	
Q	= 0.25W
H	= 0.5W
T	= 0.75W
R	= Decimal Point

aTHD	
L	= < 20%
S	= ≥ 20%

Miscellaneous	
	Customer Code
	Special Design
	Special Silk Scn
	TBA

CCT/WOD				
2	2	K	=	2200K
2	7	K	=	2700K
3	0	K	=	3000K
3	5	K	=	3500K
4	0	K	=	4000K
5	0	K	=	5000K
5	7	K	=	5700K
3	2	W D	=	~ 2700K To 2200K Warm on Dim
4	2	W D	=	~ 3000K To 2200K Warm on Dim
5	2	W D	=	~ 3500K To 2200K Warm on Dim

Connection Type	
C	= Poke-In Connector
I	= Insulation Displacement Connector
O	= Connector + Solder Pads
W	= Wire "Pigtail"
X	= Solder Pads

CRI	
L	= < 80 CRI
S	= ≥ 80 CRI
H	= ≥ 90 CRI

Revision Level	
P1 to 9	Prelim
R1 to ∞, RIs	
	TBA

Input Voltage	
12V	= 12 VAC, Magnetic or Electronic Transformer Source
12E	= 12 VAC, Electronic Transformer Source Only
120V	= 120 VAC
120R	= Rectified 120 VAC
230V	= 230 VAC

LED Indicator	
P	ProLite
E	EverLite
D	Interlight
C	Citizen
S	SemiLeds
N	Nichia
...	TBA



9. Packaging

LED Modules will be packaged in trays for primary protection.

According to the total delivery amount, cardboard boxes will be used to protect the Trays of LED Modules from mechanical shocks during transportation.

The boxes are not water resistant and therefore must be kept away from water and moisture.

10. Reliability and Average Lumen Maintenance

Before releasing new products the manufacturer puts a representative product sample set through an entire suite of qualification tests, including the most stressful test for high power LEDs, the Wet High-Temperature Operating Life (WHTOL) test at 85°C/85%RH for 1000 hours at the specified operating current.

LED lifetime has been extrapolated based on the accumulated operating and accelerated aging data. Based on this data, the manufacturer projects that the LED products will deliver, on average, 70% lumen maintenance at 50,000 hours of operation at the specified operating current, provided that the case temperature is maintained at or below 80°C.

11. Moisture Sensitivity

The module can operate for up to 1000hrs at 85 °C and 65% Relative Humidity.

It is not designed for operation in wet conditions without an additional conformal coating which must be approved and supplied by the manufacturer during the module build process or warranty will be voided