

APPLICATIONS

- Horticulture Lighting

SPECIFICATIONS

- SSL 80 , 120 and 150 LEDs
- Color and White Light Options
- Long lifetime up to 100,000 hours
- Easy connection with push-in connectors
- Accurate Color Matching [SDMC]

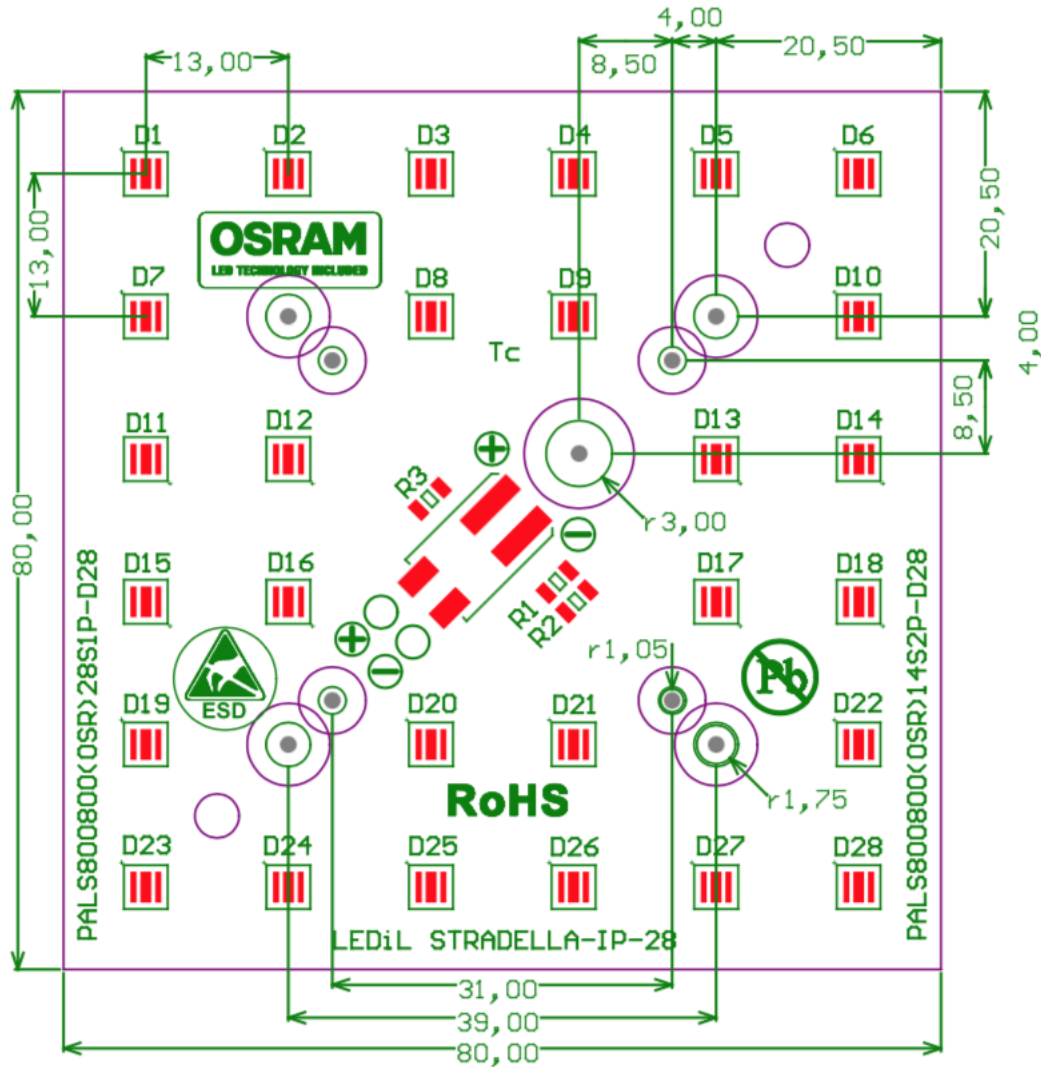
- Calculated Parameters for PALS8080(OSR)14S2P-D28-H @85 °C

PALS8080(OSR)14S2P-D28-H				
Osram - SSL 80 Series *				
Single Channel Application **				
PCB Properties			Electrical Connections ***	
Aluminum 1 Oz Copper 1.6 mm Thickness 1 W/mK Thermal Conductivity IPC Class 2, Class 3 - Hasl Lead Free			LED Numbers	28
			Hyper Red	24
			Deep Blue	4
			Parallel	2
			Serial	14
Led Properties (@350 mA and 25 °C)				
LEDs ****	Hyper Red (GH CS8PM1.24-3T1U-1-L)		Deep Blue (GD CS8PM1.14-UNUO-W4-1)	
Dominant Wavelength	660 nm		455 nm	
Viewing Angle	80		80	
Radiant Flux	Typ. 425 mW		Typ. 690 mW	
Photosynthetic Photon Flux	Typ 2.32 Mmol/s		Typ 2.57 Mmol/s	
Radiant Efficiency	Typ. 59%		Typ. 69%	
Electrical Thermal Resistance	2.4 K/Watt (with efficiency 55%)		2.6 K/Watt (with efficiency 68%)	
Max Drive Current	1000 mA		1000 mA	
Forward Voltage	Typ. 2.05 Volt		Typ. 2.85 Volt	
Led Junction Temperature	135 °C		135 °C	
Led Module Parameters I				
Drive Current (mA)	Color	Forward Voltage (V)		Power (Watt)
		Single	Total	
700	Hyper Red	24,6	30,3	21,21
	Deep Blue	5,7		
1050	Hyper Red	25,8	31,6	33,12
	Deep Blue	5,8		
1400	Hyper Red	27,6	33,5	46,9
	Deep Blue	5,9		

- Calculated Parameters for PALS8080(OSR)14S2P-D28-H @85 °C , Cont.

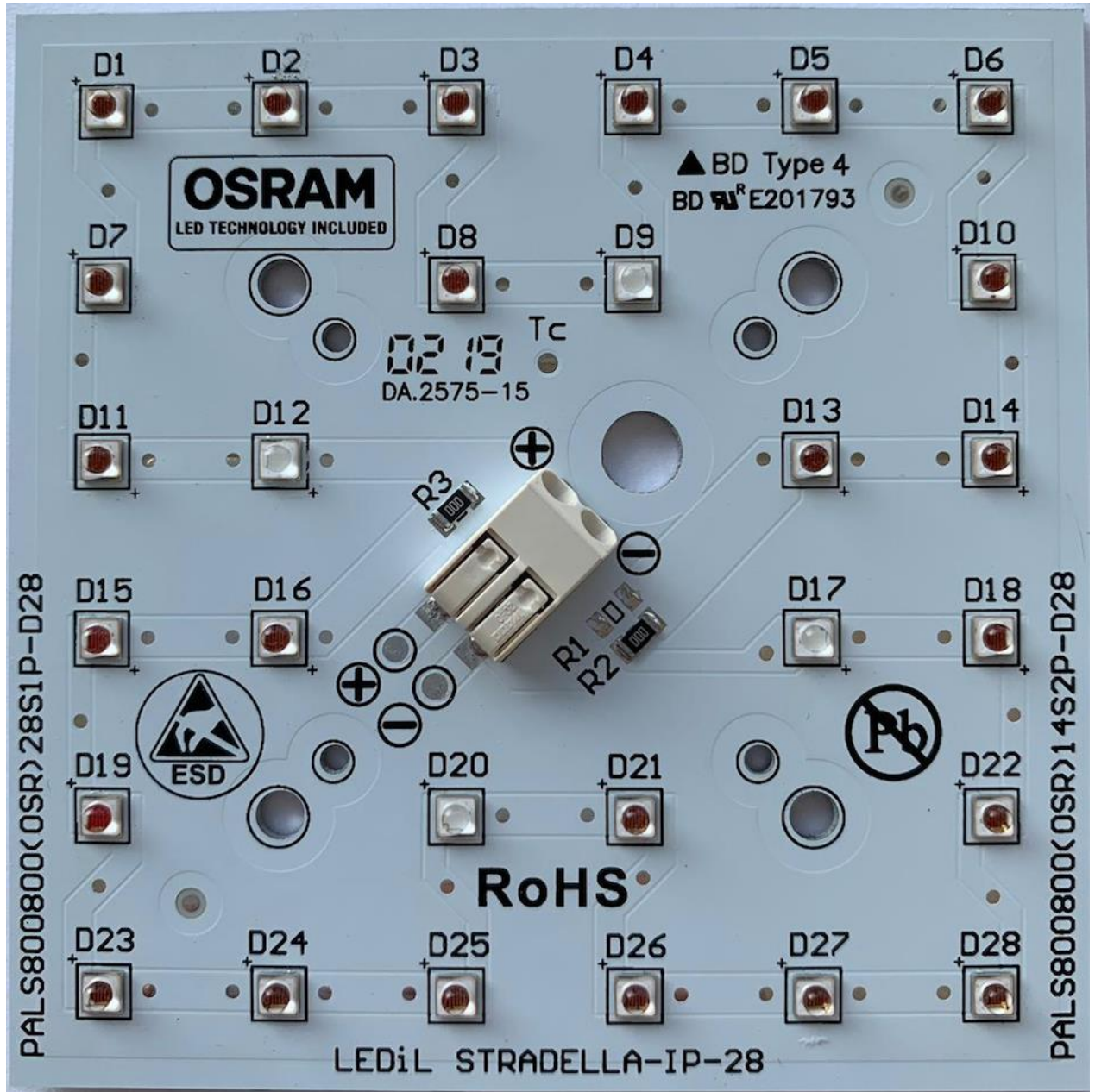
Led Module Parameters II					
Drive Current (mA)	Color	Radiant Power (mWatt) *****			
		Single		Total	
		Min	Max	Min	Max
700	Hyper Red	8520	13440	10960	16500
	Deep Blue	2440	3060		
1050	Hyper Red	12780	20160	16440	24750
	Deep Blue	3660	4590		
1400	Hyper Red	15336	24192	19728	29700
	Deep Blue	4392	5508		
Led Module Parameters III					
Drive Current (mA)	Color	Photosynthetic Photon Flux - PPF (Mmol/s)			
		Single		Total	
		Min	Max	Min	Max
700	Hyper Red	1,93	3,04	55,36	89,92
	Deep Blue	2,26	4,24		
1050	Hyper Red	2,89	4,56	82,92	126,4
	Deep Blue	3,39	4,24		
1400	Hyper Red	3,47	5,47	99,52	151,64
	Deep Blue	4,06	5,09		
Led Module Parameters IV					
Drive Current (mA)	Efficacy (Mmol/J)				
	Min		Max		
700	2,61		4,24		
1050	2,50		3,82		
1400	2,12		3,23		
NOTES					
<p>* Depending on the projects, LEDs could be also SSL 120, SSL 150 and Oslon Square Familia</p> <p>** According to system properties, Led Modules can be redesigned as multiple channels</p> <p>*** With respect to control system and power supplies, Led Module can be redesigned</p> <p>**** Depending on the projects, green house type and plants, Led Colors and configurations can be changed.</p> <p>***** Minimum and Maximum LED Radiant Power Subbins are used for calculations</p>					

- Mechanical Drawing



- All dimension in mm
- Led Modules can be redesign according to customer demands, and customer logos can be added on the product.
- Push-in Connectors accept 0.2 - 0.75 mm² solid or stranded wire.

- REAL IMAGE FOR THE LED MODULE



SUITABLE LEDIL STRADELLA-IP 28 LENSES FOR PALS8080(OSR)28S1P/14S2P-D28-H

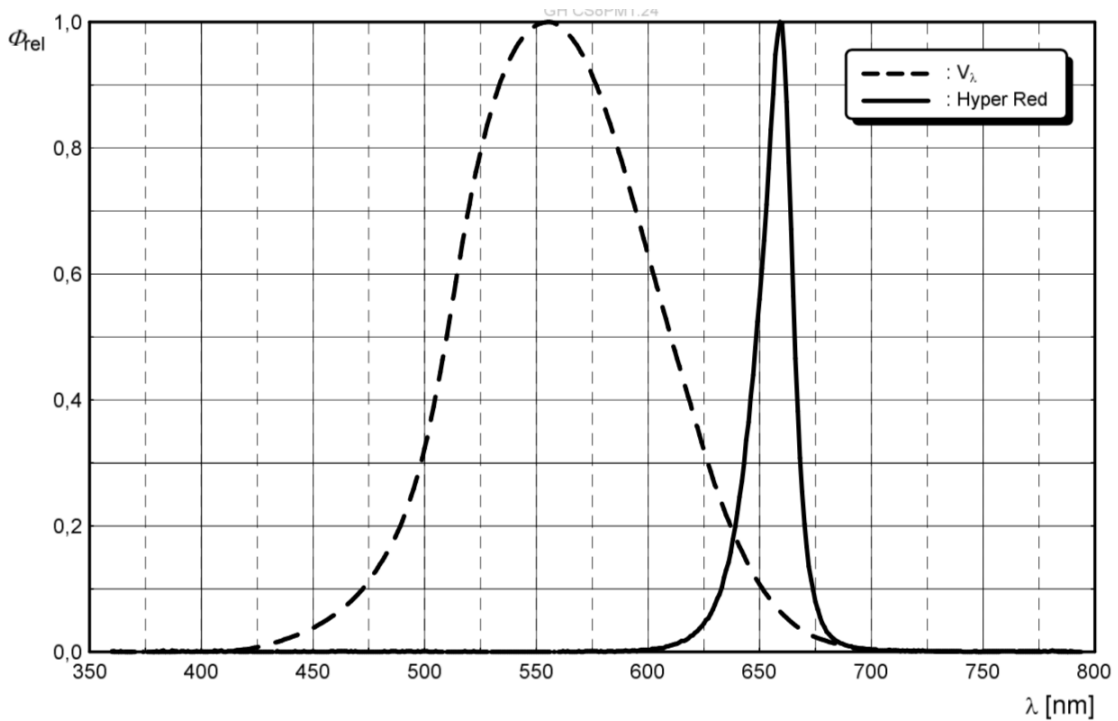
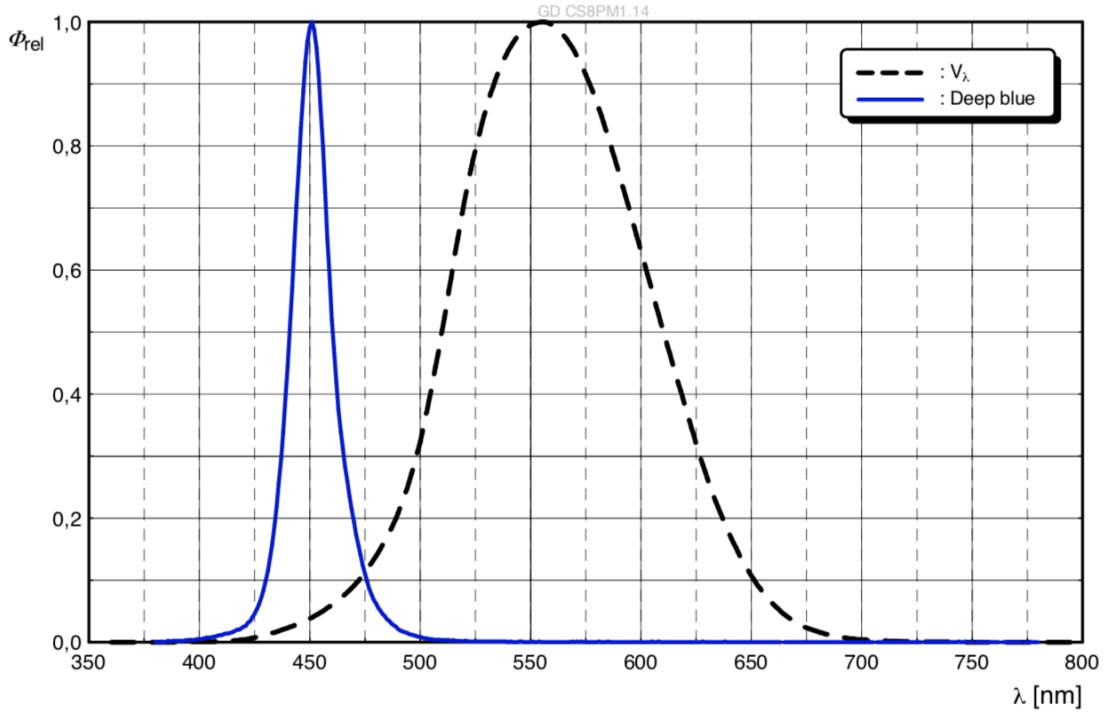


Product Codes:

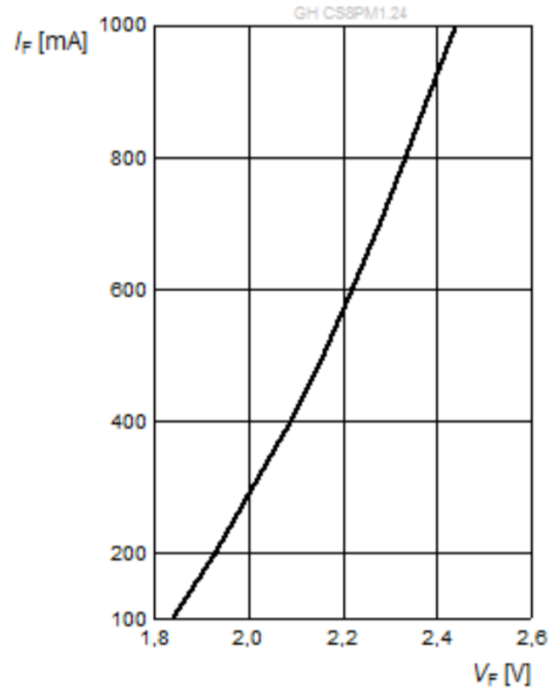
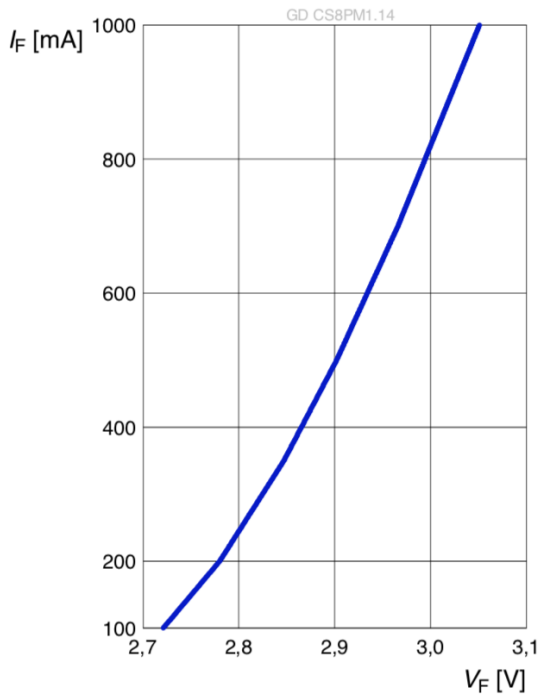
- CS15911_STRADELLA-IP-28-T2-PC
- CS16034_STRADELLA-IP-28-T2-PMMA
- CS16102_STRADELLA-IP-28-T3
- CS16104_STRADELLA-IP-28-T3-PC
- CS16322_STRADELLA-IP-28-HB-S
- CS16323_STRADELLA-IP-28-HB-M
- CS16324_STRADELLA-IP-28-HB-W
- CS16328_STRADELLA-IP-28-HB-S-PC
- CS16329_STRADELLA-IP-28-HB-M-PC
- CS16330_STRADELLA-IP-28-HB-W-PC
- CS16575_STRADELLA-IP-28-T1-A
- CS16577_STRADELLA-IP-28-VSM
- CS16579_STRADELLA-IP-28-T1-A-PC
- CS16581_STRADELLA-IP-28-VSM-PC
- CS16690_STRADELLA-IP-28-SCL
- CS16691_STRADA-IP-28-SCL-PC

SPECIFICATIONS FOR LED CHIP ON THE MODULE

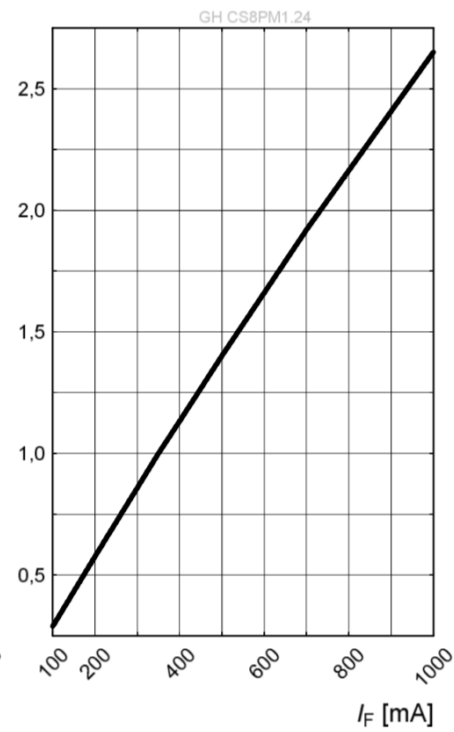
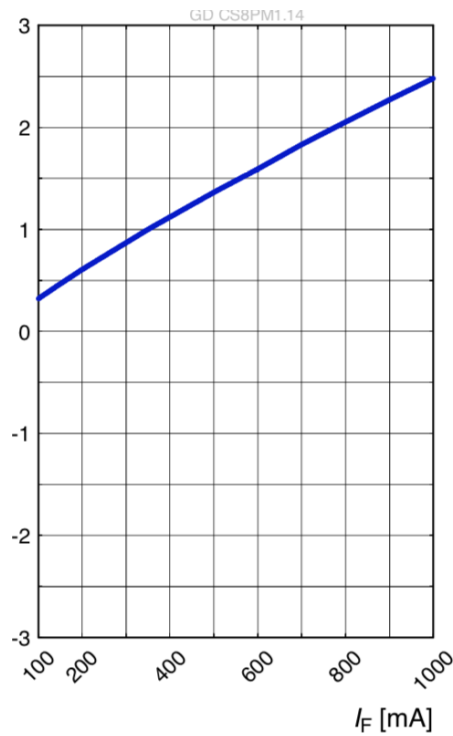
1- Relative Spectral Emission for Hyper Red and Deep Blue



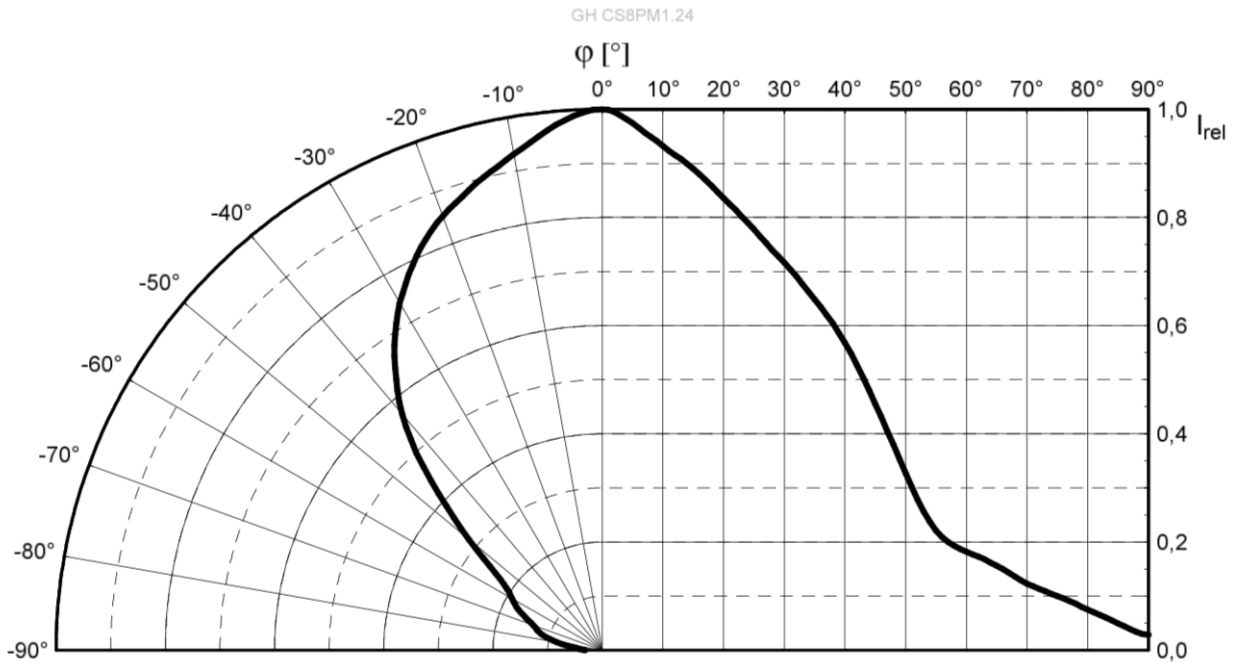
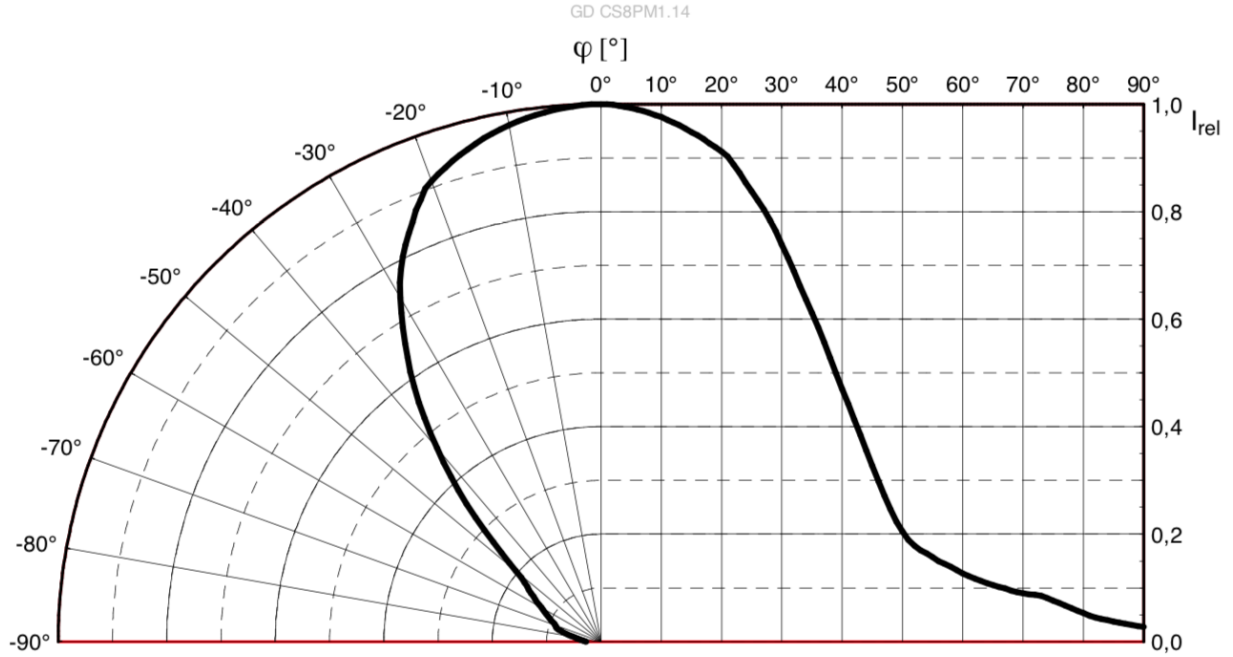
2- Electrical Characteristic for Hyper Red and Deep Blue



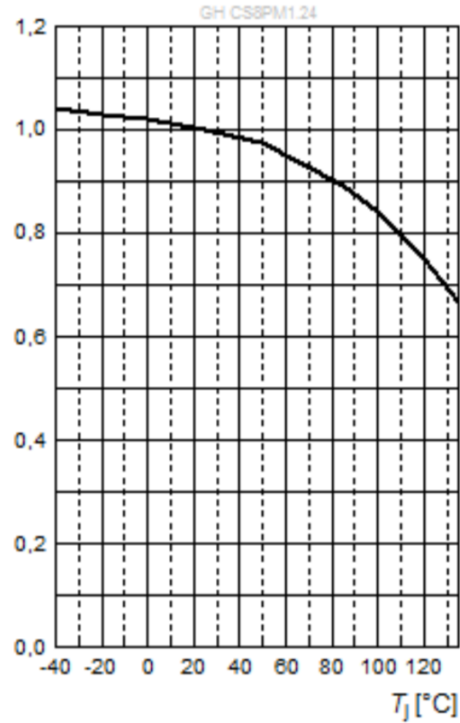
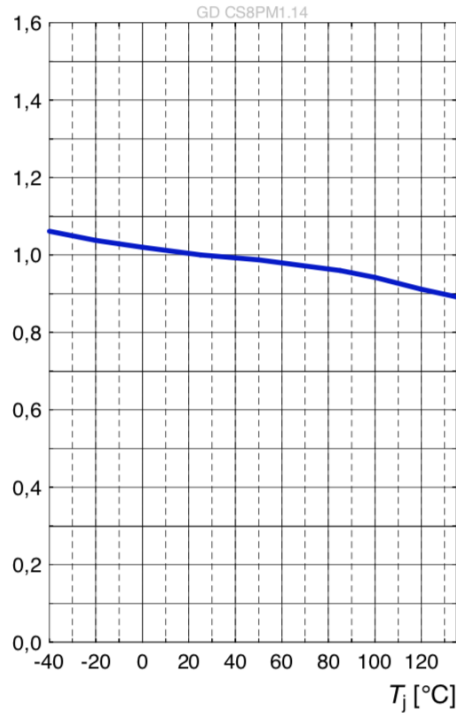
3- Relative Luminous Flux vs Current @350 mA for Hyper Red and Deep Blue



5- Radiation Characteristic for Deep Blue and Hyper Red



5- Relative Luminous Flux vs. Temperature @350 mA for Hyper Red and Deep Blue

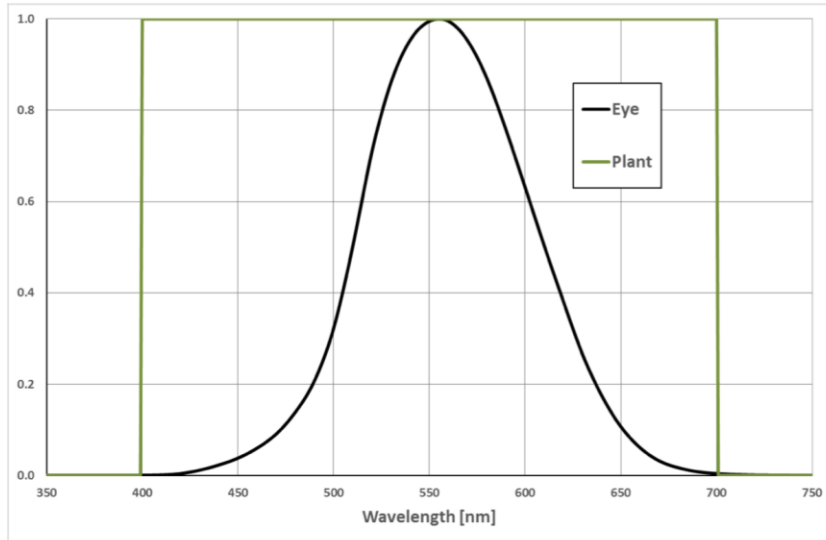


Notes

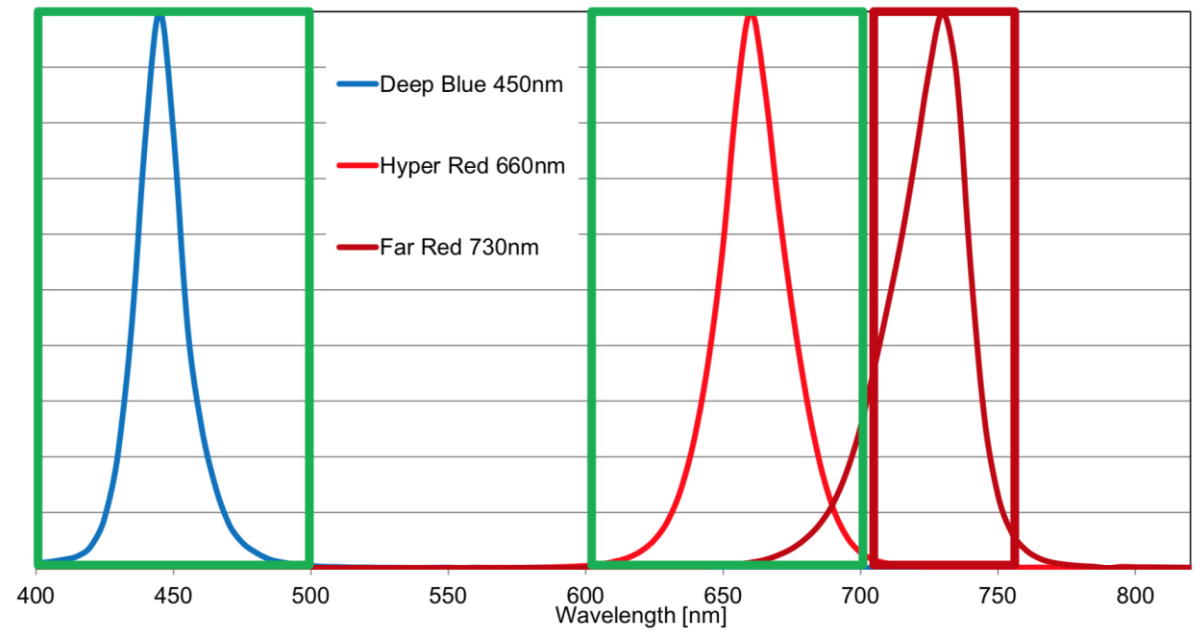
- All plotted figures in led module specifications are collected from the datasheet of Osram Oslon SSL 80 Hyper Red (GH CS8PM1.24) and Deep Blue (GD CS8PM1.12) provided by OSRAM OS.
- All designs supplied by Pals AYDINLATMA is to be assumed confidential.

APPENDIX I : DIFFERENT RECEPTORS – DIFFERENT UNITS

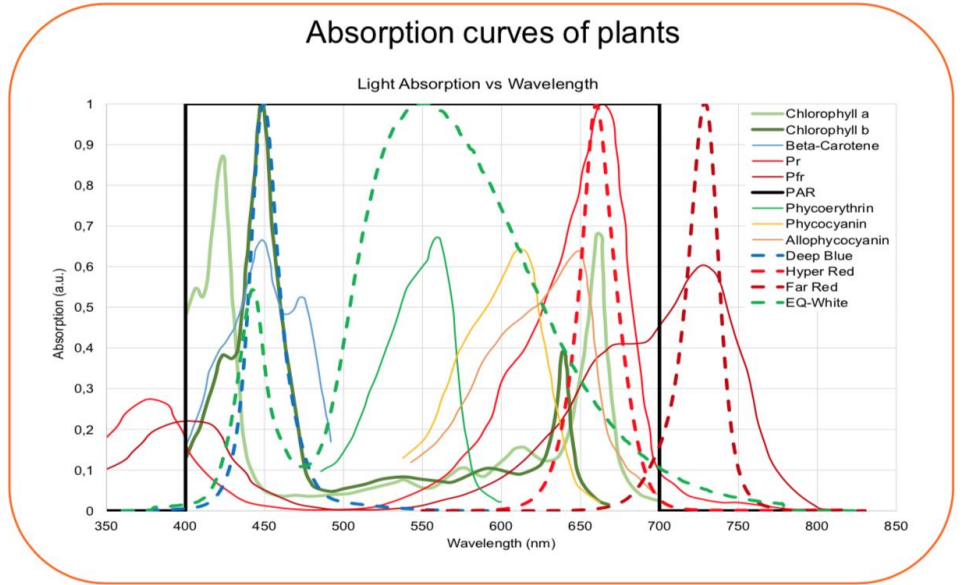
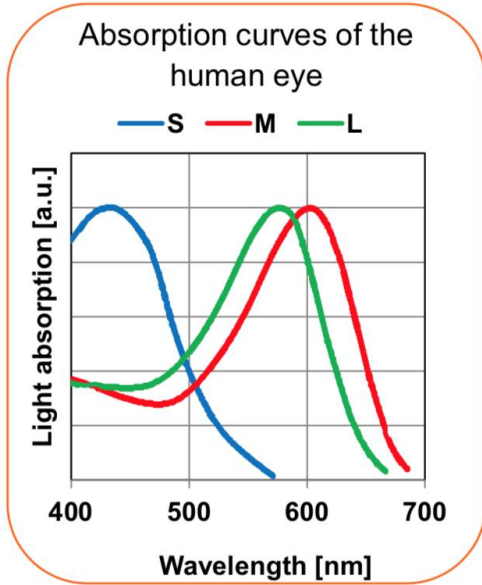
	Human Eye	Plant
Amount of Light	Lumen [lm]	Micromol per second [$\mu\text{mol/s}$]
Efficacy	Lumen per Watt [lm/W]	Micromol per Joule [$\mu\text{mol/J}$]



APPENDIX II : TYPICAL WAVELENGTHS USED FOR HORTICULTURE LIGHTING



APPENDIX III: ABSORPTION CURVES FOR PHOTOCHEMICAL REACTIONS BETWEEN HUMEN AND PLANTS



NOTES: All informations in appendix section collected from the horticulture lighting sections provided Osram OS via www.osram.com

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