

APPLICATIONS

- Industrial Lighting
- Warehouse Lighting
- Market and Glossary Lighting
- Office and School Lighting
- Decorative Lighting

SPECIFICATIONS

- Samsung LM281B+ Series
- From 2700 K to 6500 K CCT Range
- Long lifetime up to 50,000 hours
- Easy connection with push-in connectors
- Accurate Color Matching [SDMC]

- Calculated Parameters for GOLD VERSION

PALS56020SA(LM281B+)13S4P-D52 GOLD VERSION								
LED Brand				Samsung			Electrical Connection	
LED				LM281B+ (Max 160 mA – 3 Volt)				
PCB Properties				FR4 1 Oz Copper 1.6 mm Thickness 0.4 W/mK Thermal Conductivity IPC Class 2, Class 3 Hasl Lead Free			LED Number	52
Color Rendering Index - CRI				80			Parallel	4
							Serial	13
Color Tempeature - CCT				2700 K - 6000 K				
Viewing Angle				120°				
Led Thermal Resistance				25 K/Watt				
Max Drive Current of Led Module				640 mA				
Led Junction Temperature				115 °C				
SMD Connector on Led Module				Wago 2060-451 Series				
Drive Current [mA]	Current on Each Led	Voltage [V]	Power [W]	CCT [K]	Flux [lm]		Efficacy [lm/Watt]	
					Min	Max	Min	Max
250	62,5	36,14	9	2700	1509,3	1602,9	167,7	178,1
				3000	1556,1	1649,7	172,9	183,3
				4000	1638	1731	182,0	192,3
				5000	1661,4	1755	184,6	195,0
				6500	1638	1731	182,0	192,3
350	87,5	36,79	12,9	2700	2012,4	2137	156,0	165,7
				3000	2074,8	2199	160,8	170,5
				4000	2184	2309	169,3	179,0
				5000	2215,2	2340	171,7	181,4
				6500	2184	2309	169,3	179,0
450	112,5	37,31	16,8	2700	2616,1	2778	155,7	165,4
				3000	2697,2	2859	160,5	170,2
				4000	2839,2	3001	169,0	178,6
				5000	2879,8	3042	171,4	181,1
				6500	2839,2	3001	169,0	178,6

- Calculated Parameters for PLATINIUM VERSION

PALS56020SA(LM281B+) 13S4P-D52 PLATINIUM VERSION								
LED Brand				Samsung			Electrical Connection	
LED				LM281B+ (Max 160 mA – 3 Volt)				
PCB Properties				FR4 1 Oz Copper 1.6 mm Thickness 0.4 W/mK Thermal Conductivity IPC Class 2, Class 3 Hasl Lead Free			LED Number	52
Color Rendering Index - CRI				80			Parallel	4
							Serial	13
Color Tempeature - CCT				2700 K - 6000 K				
Viewing Angle				120°				
Led Thermal Resistance				25 K/Watt				
Max Drive Current of Led Module				640 mA				
Led Junction Temperature				115 °C				
SMD Connector on Led Module				Wago 2060-451 Series				
Drive Current [mA]	Current on Each Led	Voltage [V]	Power [W]	CCT [K]	Flux [lm]		Efficacy [lm/Watt]	
					Min	Max	Min	Max
250	62,5	36,14	9	2700	1415	1509	157,2	167,7
				3000	1462	1556	162,4	172,9
				4000	1544	1638	171,6	182,0
				5000	1567	1661	174,1	184,6
				6000	1544	1638	171,6	182,0
350	87,5	36,79	12,9	2700	1887	2012	146,3	156,0
				3000	1950	2074	151,2	160,8
				4000	2059	2184	159,6	169,3
				5000	2090	2215	162,0	171,7
				6000	2059	2184	159,6	169,3
450	112,5	37,31	16,8	2700	2453	2616	146,0	155,7
				3000	2535	2697	150,9	160,5
				4000	2677	2839	159,3	169,0
				5000	2717	2879	161,7	171,4
				6000	2677	2839	159,3	169,0

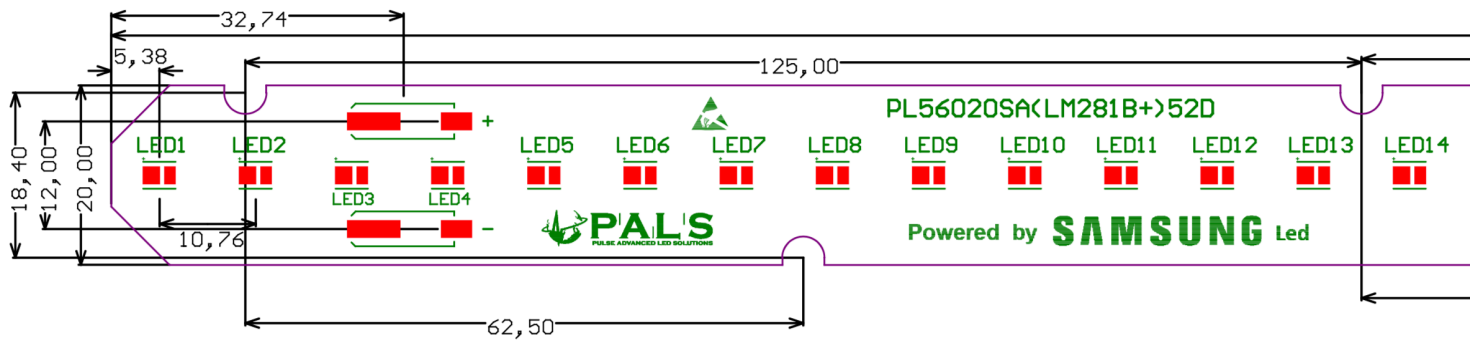
- Calculated Parameters for SILVER VERSION

PALS56020SA(LM281B+)13S4P-D52 SILVER VERSION								
LED Brand				Samsung			Electrical Connection	
LED				LM281B+ (Max 160 mA – 3 Volt)				
PCB Properties				FR4 1 Oz Copper 1.6 mm Thickness 0.4 W/mK Thermal Conductivity IPC Class 2, Class 3 Hasl Lead Free			LED Number	52
Color Rendering Index - CRI				80			Parallel	4
							Serial	13
Color Tempeature - CCT				2700 K - 6000 K				
Viewing Angle				120°				
Led Thermal Resistance				25 K/Watt				
Max Drive Current of Led Module				640 mA				
Led Junction Temperature				115 °C				
SMD Connector on Led Module				Wago 2060-451 Series				
Drive Current [mA]	Current on Each Led [mA]	Voltage [V]	Power [W]	CCT [K]	Flux [lm]		Efficacy [lm/Watt]	
					Min	Max	Min	Max
250	62,5	36,14	9	2700	1322	1416	146,9	157,3
				3000	1369	1463	152,1	162,6
				4000	1451	1544	161,2	171,6
				5000	1475	1568	163,9	174,2
				6000	1451	1544	161,2	171,6
350	87,5	36,79	12,9	2700	1763	1888	136,7	146,4
				3000	1825	1950	141,5	151,2
				4000	1934	2059	149,9	159,6
				5000	1957	2090	151,7	162,0
				6000	1934	2059	149,9	159,6
450	112,5	37,31	16,8	2700	2292	2454	136,4	146,1
				3000	2373	2535	141,3	150,9
				4000	2515	2677	149,7	159,3
				5000	2555	2718	152,1	161,8
				6000	2515	2677	149,7	159,3

- Calculated Parameters for ECO VERSION

PALS56020SA(LM281B+)13S4P-D52 ECO VERSION								
LED Brand				Samsung			Electrical Connection	
LED				LM281B+ (Max 160 mA – 3 Volt)				
PCB Properties				FR4 1 Oz Copper 1.6 mm Thickness 0.4 W/mK Thermal Conductivity IPC Class 2, Class 3 Hasl Lead Free			LED Number	52
Color Rendering Index - CRI				80			Parallel	4
							Serial	13
Color Tempeature - CCT				2700 K - 6000 K				
Viewing Angle				120°				
Led Thermal Resistance				25 K/Watt				
Max Drive Current of Led Module				640 mA				
Led Junction Temperature				115 °C				
SMD Connector on Led Module				Wago 2060-451 Series				
Drive Current [mA]	Current on Each Led [mA]	Voltage [V]	Power [W]	CCT [K]	Flux [lm]		Efficacy [lm/Watt]	
					Min	Max	Min	Max
250	62,5	36,14	9	2700	1229	1322	136,6	146,9
				3000	1275	1369	141,7	152,1
				4000	1357	1451	150,8	161,2
				5000	1380	1474	153,3	163,8
				6000	1357	1451	150,8	161,2
350	87,5	36,79	12,9	2700	1638	1763	127,0	136,7
				3000	1700	1852	131,8	205,8
				4000	1810	1934	140,3	149,9
				5000	1841	1965	142,7	152,3
				6000	1810	1934	140,3	149,9
450	112,5	37,31	16,8	2700	2129	2292	126,7	136,4
				3000	2210	2373	131,5	141,3
				4000	2352	2515	140,0	149,7
				5000	2393	2355	142,4	140,2
				6000	2352	2515	140,0	149,7

- Mechanical Drawing

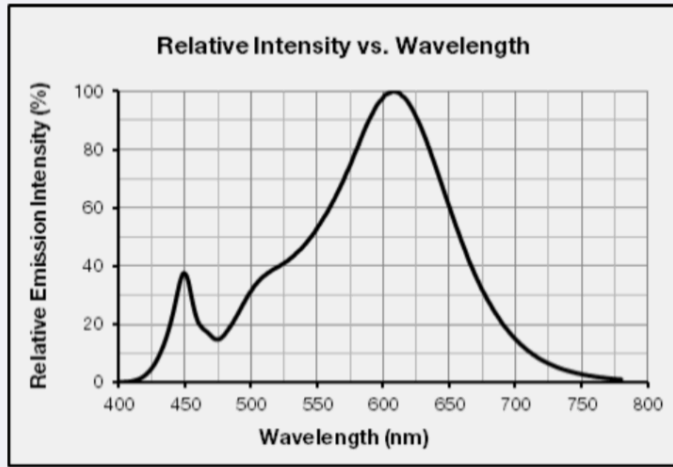


- All dimension in mm
- Led Modules can be redesign according to customer demands, and can be added customer logos.
- Push-in Connectors accept 0.2 – 0.75 mm² solid or stranded wire.

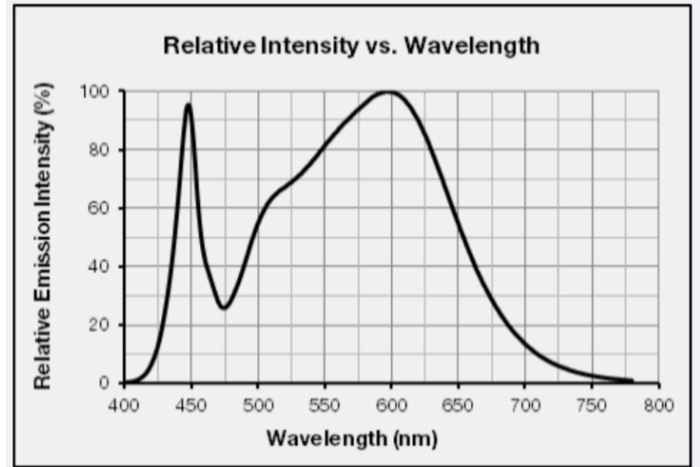
LED MODULE SPECIFICATIONS

1- Relative Spectral Distribution

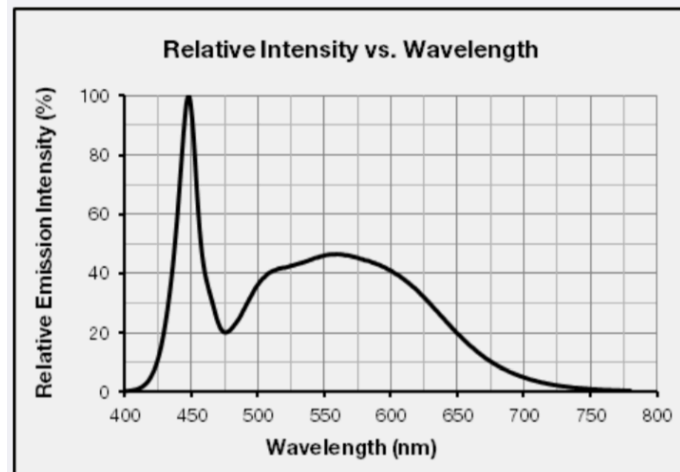
CCT: 2700 K (80 CRI)



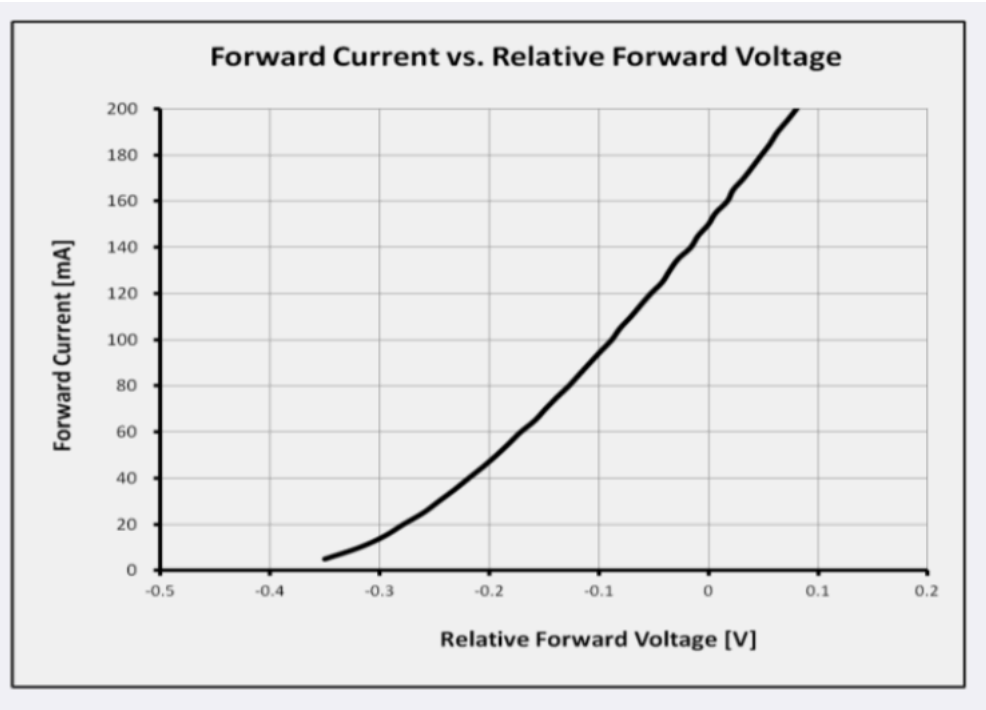
CCT: 4000 K (80 CRI)



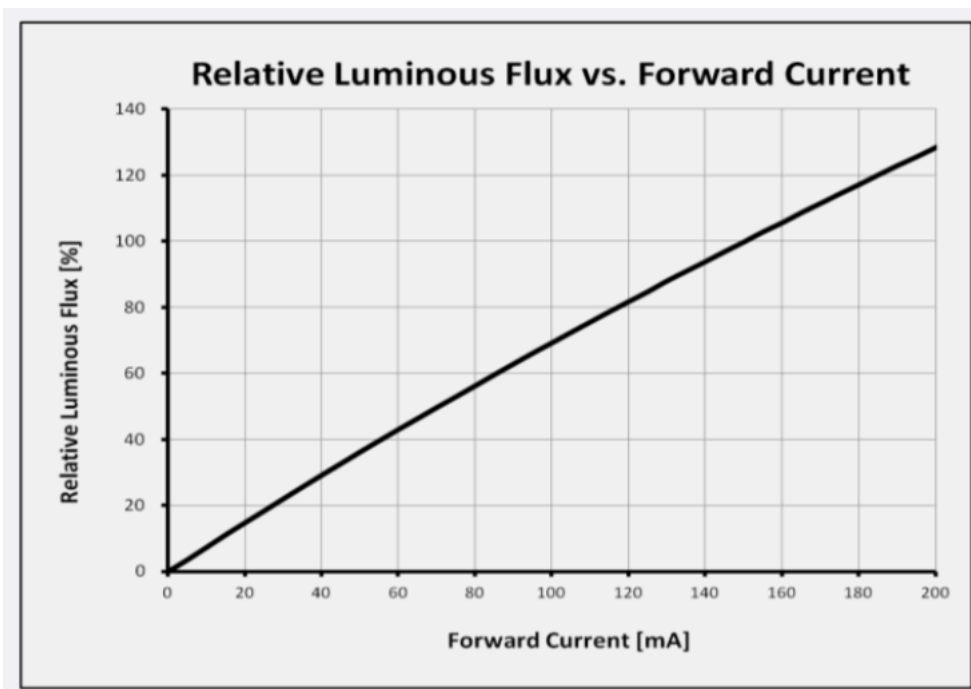
CCT: 6500 K (80 CRI)



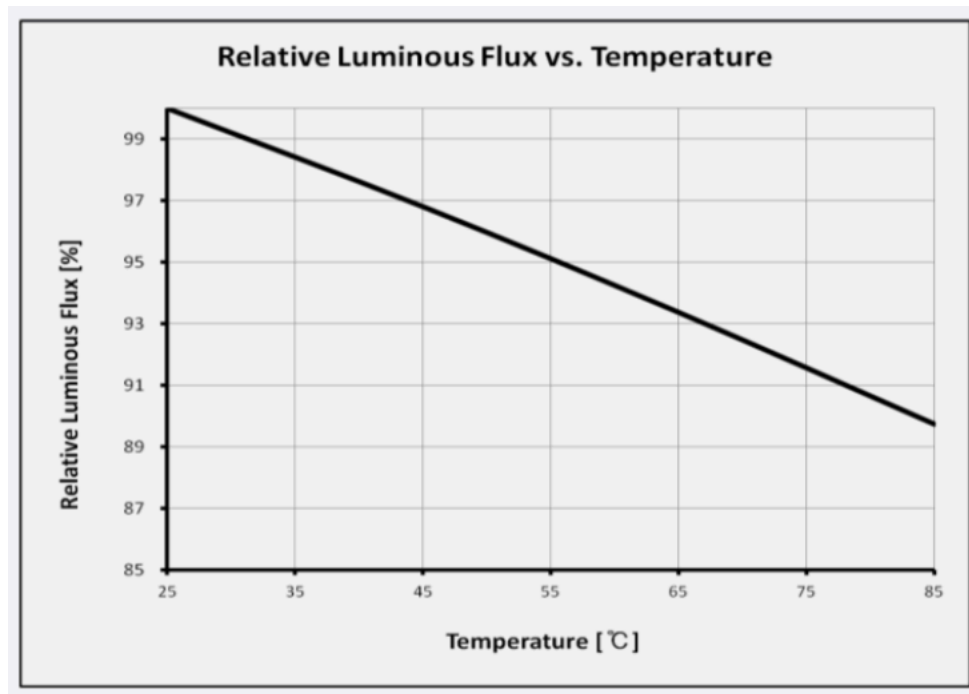
2- Electrical Characteristic



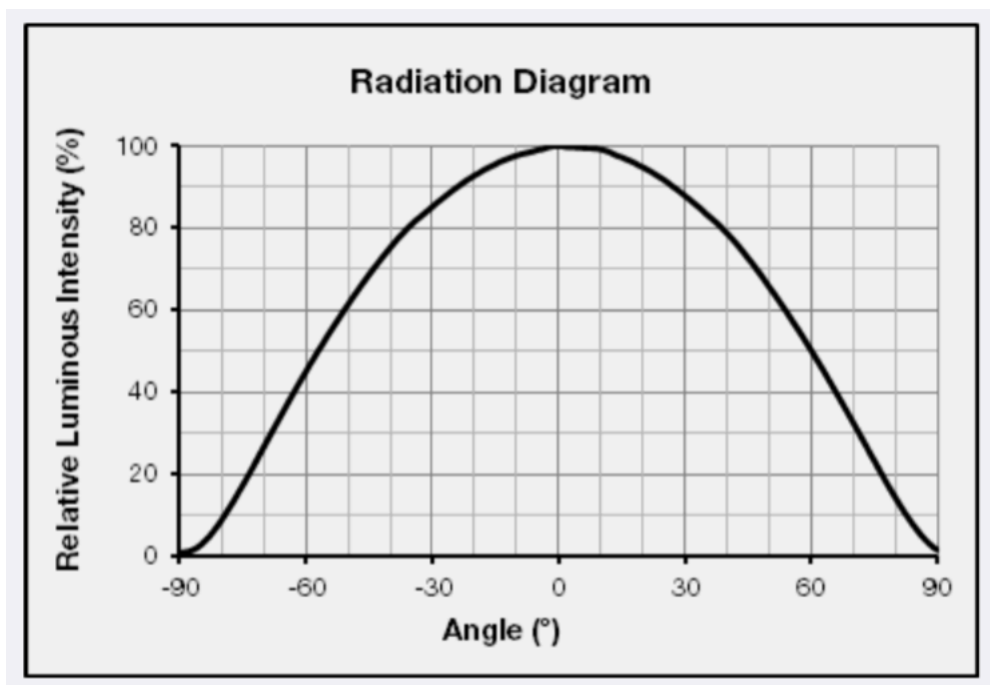
3- Relative Luminous Flux vs Current



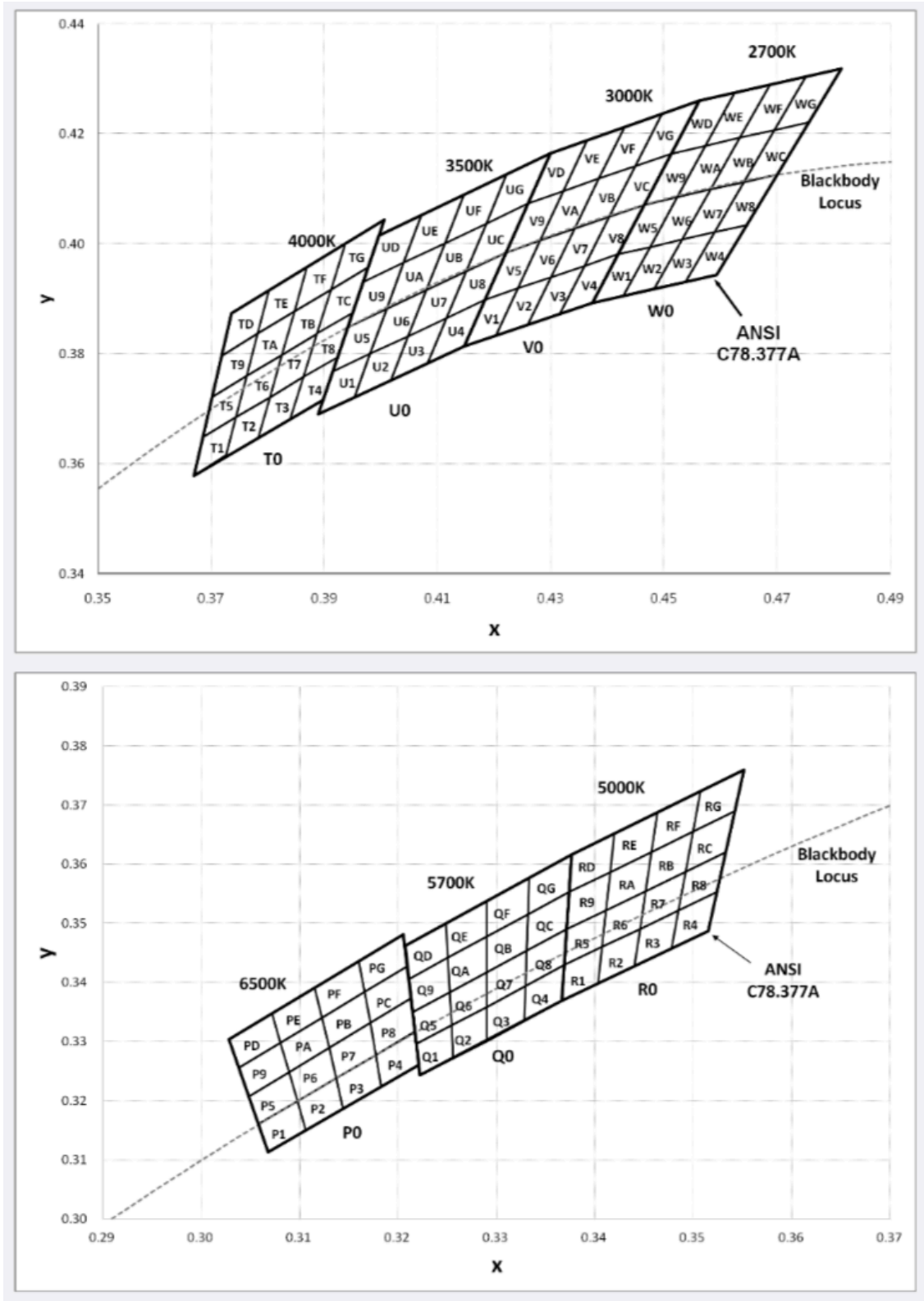
3- Relative Luminous Flux Vs. Temperature



4- Typical Spatial Distribution



5- Warm and Neutral White Kits Plotted on Ansi Standart Chromaticity Regions



Notes

- All plotted figures in led module specifications are collected from the datasheet of Samsung LM281B+ provided by Samsung LED. via www.samsung.com/led.
- All designs supplied by Pals Aydınlatma is to be assumed confidential.

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