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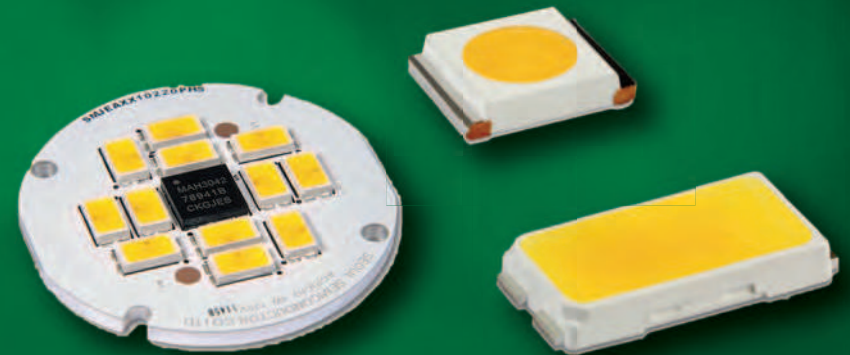




**SEOUL SEMICONDUCTOR**

# **Product Selector Guide**

Spring / Summer 2013



# Quick Guide to our Product Portfolio

## **Acrich MJT** Multi-Junction Technology p. 3

Acrich MJT (Multi-Junction Technology) are single-die, high-voltage, high-power devices providing designers high-voltage options without the large form factors of multi-die chip-on-boards.

## **Acrich2** AC LED Modules p. 5

Acrich2 AC LED modules are powered directly from AC voltage and make the perfect replacement light source for flush-mount fixtures, down lights and sconces. These modules are powered without any driver or ballast.

## **High-Power LEDs** p. 9

The High-Power family of high-brightness LEDs includes the Z5, Z5M, Z6, Z7 and ZC series of COBs, have enhanced chip technology for low droop at high temperatures, plus a wide variety of CRI, colors and operating currents.

## **Mid-Power LEDs** p. 11

The Mid-power family includes the 3020, 3030, 5050, and 5630 packages. These LEDs combine a high-reliability LED chip with high performance phosphor in a thermally enhanced package with a heat slug.

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## About Us

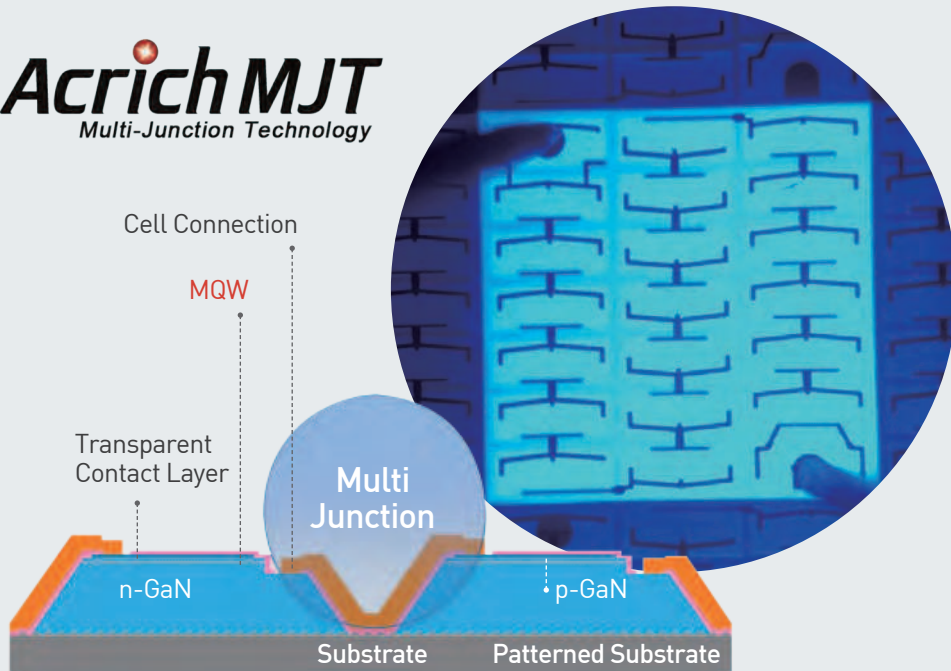
Seoul Semiconductor manufactures and packages a wide selection of light emitting diodes (LEDs). The company is the world's fifth largest LED supplier, holding more than 10,000 patents globally, while offering a wide range of LED technology and production capacity.

The company's broad product portfolio includes a wide array of package and device choices such as AC and high-voltage DC LEDs, high-brightness LEDs, mid-power LEDs, side-view LEDs, through-hole type LED lamps and custom displays.

# Acrich MJT- Multi Junction Technology

Acrich MJT (Multi-Junction Technology) LEDs are single-die, high-voltage, high-power devices providing designers high-voltage options without the large form factors of multi-die chip-on-boards. At 120 lumens/watt (in warm-white DC operation), the increased light density allows for cost-optimized performance in space-constrained applications. Available in a variety of packages, voltages, and power levels.

**Acrich MJT**  
Multi-Junction Technology



## Advantages of Multi Junction Technology

- FEATURES**
- Good ability to mix bins on PCBs
  - Easy to make LED modules
  - Fewer components
  - A wide range of voltage 13V~69V
  - High luminous efficacy up to 130lm/W
  - Competitive cent/lm with scale merit



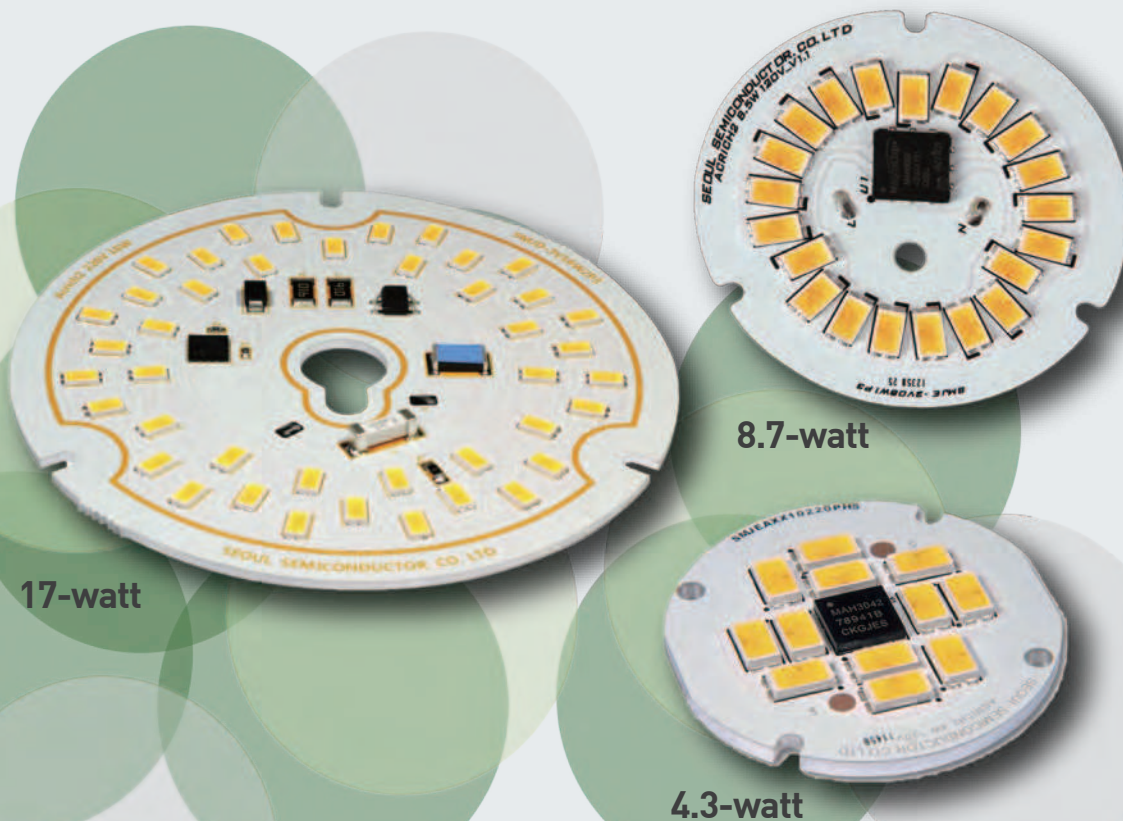
### Electro Optical Characteristics

Series	Color	Part No.	Size [mm]	VF [V]	Flux [lm]	IF [mA]	Topt[°C]	CCT[K]	2θ 1/2[°]	CRI [Typ]
MJT 4040	CW	SAW09H0A	4.0*4.0*2.2	64	165	20	-30~+85	4,200-6,000	120	70
MJT 3528	CW	SAW8WA2A	3.5*2.8*0.6	32.5	132	40	-30~+85	3,700-7,000	120	82
	WW				124			2,600-3,700		
MJT 5630	CW	SAW8KG0A	5.6*3.0*0.75	19	40	20	-30~+85	3,700-7,000	115	82
	WW				35			2,600-3,700		
	CW	SAW8KG0B		22	53			3,700-7,000	115	82
	WW				49			2,600-3,700		
MJT 6540	CW	SAW8P42A	6.5*4.0*0.80	13	30	20	-30~+85	3,700-7,000	115	83



# Acrich2 - AC LED Modules

Seoul Semiconductor's family of Acrich2 AC-LED modules is the perfect replacement light source for flush-mount fixtures, downlights and sconces. These AC-LED modules can be connected to AC line voltage without any driver or ballast. Available in a wide variety of light output levels and form-factors, including 4.3-watt, 8.7-watt, 13-watt and 17-watt modules.



Seoul Semiconductor  
Acrich2

## Get Plugged in with Acrich2

For fast time-to-market and minimal electrical design time, the Acrich2 family combines high-voltage MJT LEDs with a custom power integrated circuit to give optimum light output in standard form factors without external drivers or ballasts.

Wide Voltage Range	Number of IC	x 1				x 2	...	x n	Dimming	
	270V	A wide range of power distribution	4W	8W	12W	16W	32W	...	200W	Analog DC 0~10v
240V										
230V										
220V										
120V	Application	MR (MR16)	Bulb	Down Light Spot Lamp PAR Lamp		...	High Watt Application (Street Lighting, HighBay)		Phase Cut Dimming	
110V										
100V										

# Acrich2

## Electro Optical Characteristics

Series	VoPT [V]	Part No.	Color	Flux[lm]		P[W]	Size [mm]	CCT [K]	CRI	Flux Bin	PF	Efficacy [lm/W]
				Min.	Typ.							
4.3W	120	SMJE-2V04W1P3	CW	430	450	4.3W	33	4,700-6,000	Min. 80	4a	Min 0.95	100
		SMJE-2V04W1P3	NW	380	400			3,700-4,200		4b		87
		SMJE-2V04W1P3	WW	290	330			2,600-3,200		4c		67
8.7W	120	SMJE-2V08W1P3	CW	870	910	8.5W	46	4,700-6,000	Min. 80	8a	Min 0.95	100
		SMJE-2V08W1P3	NW	740	800			3,700-4,200		8b		87
		SMJE-2V08W1P3	WW	570	650			2,600-3,200		8c		67
8.7W Candle	120	SMJC-2V08W2P4	CW	580	670	8.7W	30	4,700-6,000	Min. 80	ALL	Min. 0.97	67
	SMJC-2V08W2P4	WW			2,600-3,200							
8.7W Eco	120	SMJE-2V08W2P4	CW	580	670	35.9*25.3	30	4,700-6,000	Min. 80	ALL	Min. 0.97	67
	SMJE-2V08W2P4	WW										
13W	120	SMJE-2V12W1P3	CW	1,300	1,360	13W	50	4,700-6,000	Min. 80	13a	Min 0.95	100
		SMJE-2V12W1P3	NW	1,140	1,210			3,700-4,200		13b		87
		SMJE-2V12W1P3	WW	870	1,000			2,600-3,200		13c		67
12.7W Eco	120	SMJE-2V12W2P4	CW	850	930	36.5*34	30	4,700-6,000	Min. 80	ALL	Min 0.97	67
		SMJE-2V12W2P4	WW									
17W	120	SMJD-2V16W1P3	CW	1,700	1,780	70.0	50	4,700-6,000	Min. 80	17a	Min 0.95	100
		SMJD-2V16W1P3	NW	1,480	1,590			3,700-4,200		17b		87
		SMJD-2V16W1P3	WW	1,140	1,300			2,600-3,200		17c		67
		SMJD-2V16W2P3	CW	1,700	1,780	100	50	4,700-6,000	Min. 80	17a	Min 0.97	100
		SMJD-2V16W2P3	NW	1,480	1,590			3,700-4,200		17b		87
		SMJD-2V16W2P3	WW	1,140	1,300			2,600-3,200		17c		67
		SMJD-2D16W2P3	CW	1,700	1,780			4,700-6,000		17a		100
		SMJD-2D16W2P3	NW	1,480	1,590			3,700-4,200		17b		87
		SMJD-2D16W2P3	WW	1,140	1,300			2,600-3,200		17c		67
16W Eco	120	SMJD-2V16W2P4	CW	1,070	1,260	62	50	4,700-6,000	Min. 80	ALL	Min. 0.97	67
		SMJD-2V16W2P4	WW									

## Electro Optical Characteristics

Series	VoPT [V]	Part No.	Color	Flux[lm]		P[W]	Size [mm]	CCT [K]	CRI	Flux Bin	PF	Efficacy [lm/W]
				Min.	Typ.							
4.3W	220	SMJE-3V04W1P3	CW	430	450	4.3W	33	4,700-6,000	Min. 80	4a	Min 0.95	100
		SMJE-3V04W1P3	NW	380	400			3,700-4,200		4b		87
		SMJE-3V04W1P3	WW	290	330			2,600-3,200		4c		67
8.7W	220	SMJE-3V08W1P3	CW	870	910	8.7W	46	4,700-6,000	Min. 80	8a	Min 0.95	100
		SMJE-3V08W1P3	NW	740	800			3,700-4,200		8b		87
		SMJE-3V08W1P3	WW	570	650			2,600-3,200		8c		67
8.7W Candle	220	SMJC-3V08W2P4	CW	580	670	8.7W	30	4,700-6,000	Min. 80	ALL	Min. 0.97	67
	SMJC-3V08W2P4	WW			2,600-3,200							
8.7W Eco	220	SMJE-3V08W2P4	CW	580	670	35.9*25.3	30	4,700-6,000	Min. 80	ALL	Min. 0.97	67
	SMJE-3V08W2P4	NW										
13W	220	SMJE-3V12W1P3	CW	1,300	1,360	13W	50	4,700-6,000	Min. 80	13a	Min 0.95	100
		SMJE-3V12W1P3	NW	1,140	1,210			3,700-4,200		13b		87
		SMJE-3V12W1P3	WW	870	1,000			2,600-3,200		13c		67
12.7W Eco	220	SMJE-3V12W2P4	CW	850	930	36.5*36	30	4,700-6,000	Min. 80	ALL	Min 0.97	67
		SMJE-3V12W2P4	WW									
17W	220	SMJD-3V16W1P3	CW	1,700	1,780	17.5W	70.0	4,700-6,000	Min. 80	17a	Min 0.95	100
		SMJD-3V16W1P3	NW	1,480	1,590			3,700-4,200		17b		87
		SMJD-3V16W1P3	WW	1,140	1,300			2,600-3,200		17c		67
		SMJD-3V16W2P3	CW	1,700	1,780	17W	100	4,700-6,000	Min. 80	17a	Min 0.97	100
		SMJD-3V16W2P3	NW	1,480	1,590			3,700-4,200		17b		87
		SMJD-3V16W2P3	WW	1,140	1,300			2,600-3,200		17c		67
		SMJD-3D16W2P3	CW	1,700	1,780			4,700-6,000		17a		100
		SMJD-3D16W2P3	NW	1,480	1,590			3,700-4,200		17b		87
		SMJD-3D16W2P3	WW	1,140	1,300			2,600-3,200		17c		67
16W Eco	220	SMJD-3V16W2P4	CW	1,070	1,260	16W	62	4,700-6,000	Min. 80	ALL	Min. 0.97	67
		SMJD-3V16W2P4	WW									



# High Power LEDs & Chip-on-Board (COB) LEDs

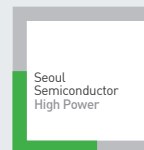
The **High Power (Z-Power) Family** of high-brightness LEDs includes the Z5, Z5 color, Z6, and Z7. Each of these LEDs has enhanced chip technology for low droop at high temperatures, plus a wide variety of CRI, colors and operating currents.

**Chip-On-Board (COB)** is an array of individual LED die placed in a high performance ceramic package to maximize light density and improve reliability over discrete solutions. The die is electrically connected to operate at high voltages compatible with standard power supplies.

## Chip-on-Board (COB) LEDs

Series	Part No.	Color	VF[V]	Flux [lm]	Efficacy [lm/W]	CCT[K]	CRI [Typ]	IF [mA]	2θ <sup>1/2</sup> [°]	Rθj-s [K/W]	Junction Temp [°C]
ZC6	SBW01F1A	CW	24	750	115	5000	Typ. 75	270	125	2.6	120
	SBWW1F1A	WW		650	100	2700	Min. 80		115		
ZC10	SBW02F1A	CW	24	1160	115	5000	Typ. 75	420	125	1.7	120
	SBWW2F1A	WW		1010	100	2700	Min. 80		115		
ZC16	SBW04F1A	CW	27	1750	120	5000	Typ. 75	540	125	1.2	120
	SBWW4F1A	WW		1460	100	2700	Min. 80		115		
ZC40	SBW05F1A	CW	36	4680	130	5000	Min. 70	1000	125	0.4	120
	SBWW5F1A	WW		3670	102	2700	Min. 80		115		

ZC6	ZC10	ZC16	ZC40
2~7W	5~12W	8~18W	15~50W
13.25x13.25	17.25x17.75	19.75x19.75	28.0x28.0

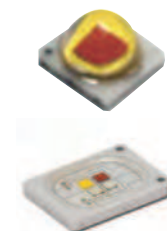


## High Power LEDs (White)



Series	Part No.	Color	VF [V]	Flux [lm]	CCT [K]	CRI [Typ]	IF[mA]		2θ <sup>1/2</sup> [°]		
							Typ.	Max.			
Z5M	SZ5-M0-W0-00	CW	3.1	145	6000	70	350	1200	120		
	SZ5-M0-W0-C8	CW		128	6000	Min.80					
	SZ5-M0-WN-00	NW		135	4000	69					
	SZ5-M0-WN-C8	NW		122	4000	Min.80					
	SZ5-M0-WW-C8	WW		116	3000	Min.80					
	SZ5-M0-WW-C9	WW		91	2700	Min.90					
Z7	SZW07A0A	CW	3.3	550	6000	70	1400	2800	130		
	SZWW7A0A	WW		450	3000	80					
P8	SPW08F0D	CW	3.4	82	6000	73	350	500	120		
	SPW88F0E	CW		100	6000	80				300	400
	SPWW8F0E	WW		95	3000	80				300	400

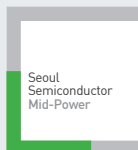
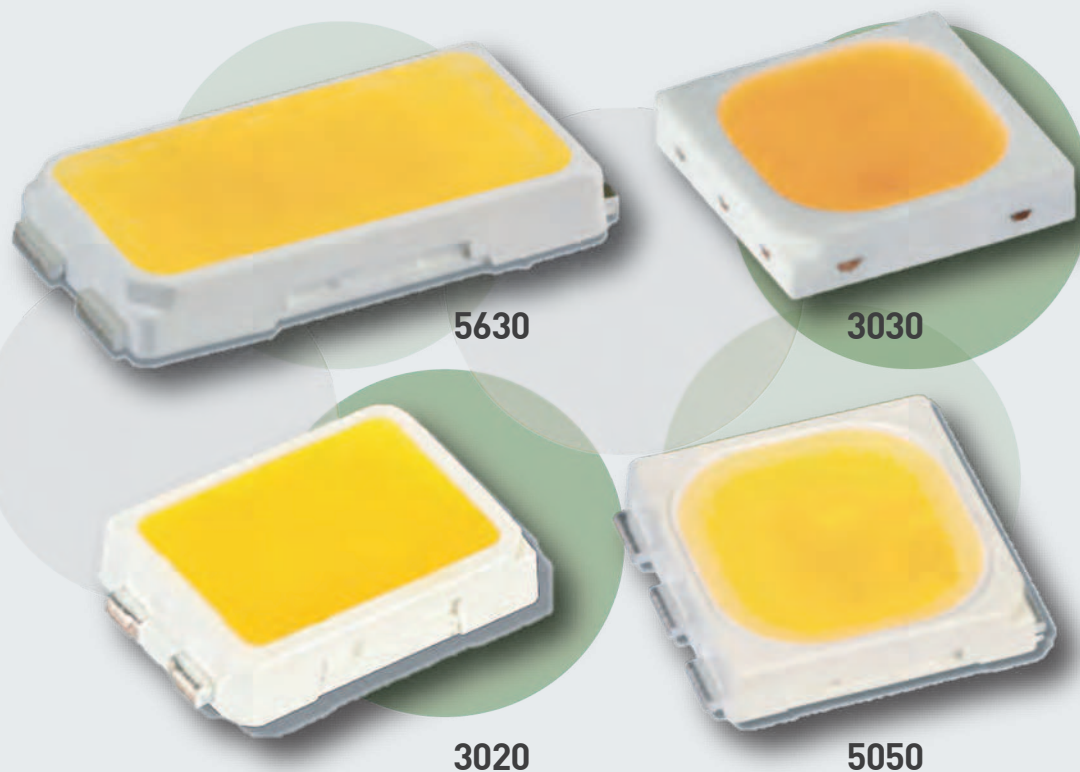
## High Power LEDs (Color)



Series	Part No.	Color	VF [V]	Flux [lm]	λd [nm]	P [W]	IF[mA]		2θ <sup>1/2</sup> [°]
							Typ.	Max.	
Z5 Color	SZR05A0A	Red	2.4	55	625	1W	350	700	123
	SZG05A0A	Green	3.3	100	525				128
	SZB05A0A	Blue	3.3	22	460				128
	SZA05A0A	Amber	2.3	46	592				123
Z6	SZFP6F0A	Full Color	2.3	38	R: 625	1W	350	700	120
			3.4	60	G: 525				
			3.4	16	B: 460				
			3.4	80	W: 5300				

# Mid-Power LEDs

The Mid-Power family includes the 3020, 3030, 5050, and 5630 – these LEDs combine a high reliability LED chip with high performance phosphor in a thermally enhanced package with a heat slug.



## Electro Optical Characteristics

### 3020 Series

Series	Part No.	Color	VF[V]	CCT[K]	Flux[lm]	P[W]	IF[mA]		CRI [Typ]	2θ[2°]
							Typ.	Max.		
3020	STW9B12C	WW	3.2	2,600-4,200	27.3	0.3W	100	120	Min.80	120
		CW		3,700-7,000	36.6		100	120		
	STW8B12C	WW	2,600-3,200	32.6	0.3W	100	120			

### 3030 Series

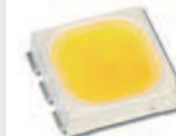
Series	Part No.	Color	VF[V]	CCT[K]	Flux[lm]	P[W]	IF[mA]		CRI [Typ]	2θ[2°]
							Typ.	Max.		
3030	STW8C2SA	CW	6.3	3,700-7,000	72.6	0.6W	100	200	Min.80	120
		WW		2,600-3,200	66.1		100	200		
	STW8C2SA	CW	6.7	3,700-7,000	104.6	1W	150	200		
		WW		2,600-3,200	95.3		150	200		

### 5050 Series

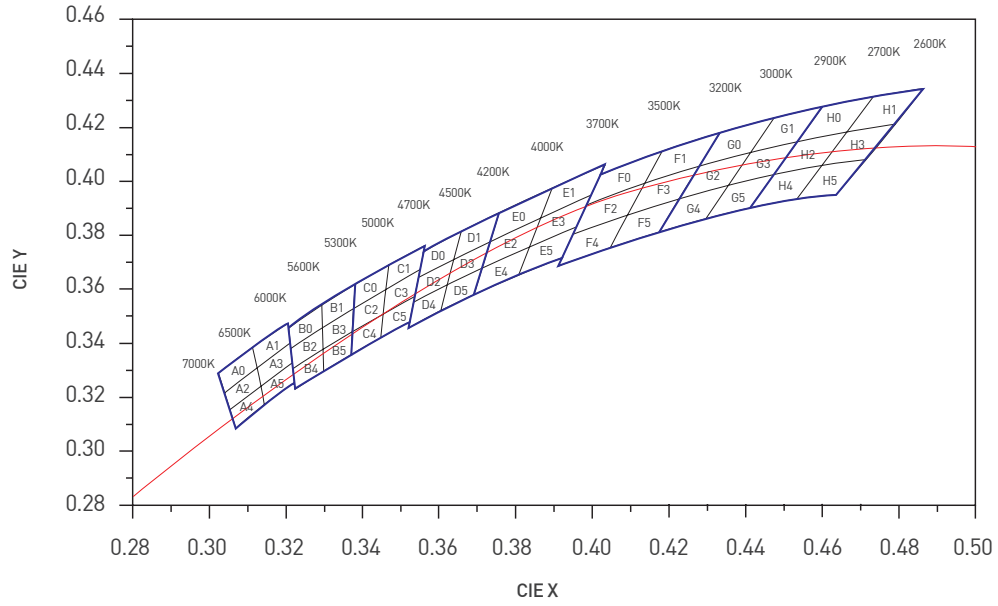
Series	Part No.	Color	VF[V]	CCT[K]	Flux[lm]	P[W]	IF[mA]		CRI [Typ]	2θ[2°]
							Typ.	Max.		
5050	STW7T16A	CW	3.1	4,700-7,000	21.3	0.2W	60	90	75	120
		WW		3,700-7,000	20.7		60	90	Min.80	
	STW8T16A	WW	3.1	2,600-3,700	19.5	0.2W	60	90	Min.80	
		CW		3,700-8,200	19.2		60	90	80	
	STW8T36B	WW	3.2	2,600-3,700	16.7	0.2W	60	90	90	
		CW		3,700-8,200	15.2		60	90	90	
	STW9T36B	WW	3.2	2,600-3,700	14.6	0.2W	60	90	90	
		CW		3,700-8,200	15.2		60	90	90	
STW8T16C	CW	3.1	3,700-8,200	27.5	0.2W	65	100	Min.80		
	WW		2,600-3,700	24.6		65	100	Min.80		

### 5630 Series

Series	Part No.	Color	VF[V]	CCT[K]	Flux[lm]	P[W]	IF[mA]		CRI [Typ]	2θ[2°]
							Typ.	Max.		
5630	STW8Q14C	CW	3.15	3,700-7,000	42.2	0.3W	100	160	Min.90	120
		WW		2,600-3,700	37					
	STW9Q14C	WW	3.15	2,600-4,200	30.9					
	STW9Q14B	WW	3.2	2,600-4,500	28.5					
	STW8Q14BE	CW	3.2	3,700-7,000	35					
		WW		2,600-3,700	33					







## NOTES

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