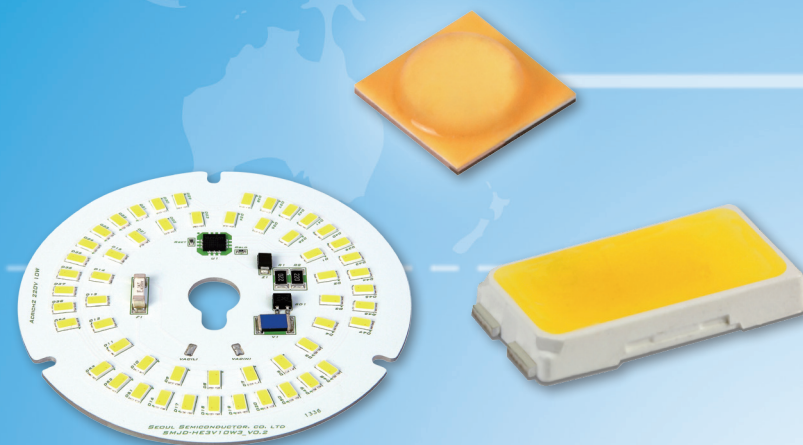




SEOUL SEMICONDUCTOR

Product Selector Guide

Summer 2014



SEOUL SEMICONDUCTOR

seoulsemicon.com

SEOUL SEMICONDUCTOR NORTH AMERICA

Quick Guide to our Product Portfolio

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About Us

Seoul Semiconductor (www.SeoulSemicon.com) manufactures and packages a wide selection of light emitting diodes (LEDs) for the automotive, general illumination/lighting, Home appliance, signage and back lighting markets. 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 in areas such as "nPola", "Acrich", and "Acrich MJT - Multi-Junction Technology" a proprietary family of high-voltage LEDs.

The company's broad product portfolio includes a wide array of package and device choices such as Acrich and Acirch2, high-brightness LEDs, mid-power LEDs, side-view LEDs, and through-hole type LEDs as well as custom modules, displays, and sensors.

Acrich3

Acrich3, Simplify your Smart Lighting System

Seoul Semiconductor proudly presents Acrich3 with advanced dimming and connections for your smart-lighting dreams.

With the ability to directly power IR sensors, Zigbee, and Bluetooth controllers, the new advanced Acrich3 IC enables easy integration for your Smart-Lighting electronics. Acrich3 IC also incorporates an analog input for perfectly-linear dimming based on your smart-lighting's 0-10V command.

In addition, Acrich3 improves TRIAC Dimming compatibility. Acrich3's ability to precisely control the dimming range with the turn of a knob or a slide of the switch ensures smooth light control. And as always, Acrich3 continues to lead the world in low-distortion power by having one of the lowest THDs and one of the highest power factors.

• Remarkably Improved TRIAC Dimming Compatibility up to 60%

• Easy to build Smart Lighting interface

- Wireless Control (Zigbee, WIFI and Bluetooth)
- Smart Sensing (IR, Motion Sensors)
- Analog Dimming
- Step Dimming
- CCT Control

• Cost Efficient Dimming System than Conventional LED system

• Acrich3 enables Simple and Compact Smart Lighting Module

Conventional Lighting Module

- AC/DC Converter
- Separate Dimming Interface



Acrich3 Smart Lighting

- Compact Design
- Save Space and Components by 6mm x 6mm Acrich IC
- Easy Dimming Interface

• Uniform Linear Analog Dimming

- Analog Dimming is more important for Commercial & Industrial Lighting
- Acrich3 performs Uniform LINEAR Analog Dimming

• More Energy Saving with Smart Lighting by Sensors

• Energy Saving with Motion Sensor

Light on 100% in the presence of people and dims to 10-50% in the absence.

• Acrich3 power Sensors directly from IC

Sensor modules can be can save component and space. LEDs, IC and IR Sensors etc. are all on 1 Board



IR sensor Dimming Module
All Device on 1 Board

• Acrich3 enables various Wireless Controls

- Zigbee, WIFI, Bluetooth



Acrich2

Get Plugged in with Acrich2

"The latest Acrich2 17W module saves energy up to 50 percent and improves compatibility with phase cut dimmer and analog DC dimmer"



Features & Solutions

Acrich2 is a revolutionary family of LED modules that make it easy to convert traditional light sources to solid-state lighting(LEDs). These modules do not require the drivers, bridges or ballasts associated with traditional light sources.

Acrich2 modules are the perfect replacement light sources for flush-mount fixtures, down lights and sconces.

Applications

- Downlight
- Flush Mount
- Wall Sconce
- PAR
- MR16
- A19 Bulb
- GU10

Number of IC	x 1				x 2	...	x n	Dimming
A wide range of power distribution	4W	8W	12W	16W	32W	...	200W	Analog DC 0~10v
Application	MR (MR16) GU (GU10)	Bulb(A19) Tube		Down Light Spot Lamp PAR Lamp		...	High Watt Application (Street Lighting, HighBay)	Phase Cut Dimming

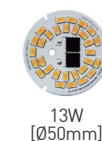
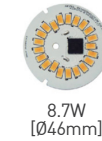
Wide Voltage Range
277V
240V
230V
220V
120V
110V
100V

Electro Optical Characteristics

Acrich2

Series	Color	Part No.	V _i [V]	Power [W]	CCT[K]	Binning	Flux Bin	Flux[lm] Min.	Flux[lm] Typ.	CRI
4.3W	CW	SMJE-2V04W1P3	120	4.3W	4,700~6,000	McAdam 3 Step	4a 4b	290 380	330 400	Min.80
	NW				3,700~4,200					
	WW				2,600~3,200					
8.7W	CW	SMJE-2V08W1P3	120	8.7W	4,700~6,000	McAdam 3 Step	8a 8b	590 740	650 800	Min.80
	NW				3,700~4,200					
	WW				2,600~3,200					
8.7W_Candle	CW	SMJC-2V08W2P4*	120	8.7W	4,700~6,000	-	ALL	580	670	Min.80
	WW				2,600~3,200	-				
8.7W_Eco	CW	SMJE-2V08W2P4	120	8.7W	4,700~6,000	-	ALL	540	670	Min.80
	WW				2,600~3,200	-				
10W	CW	SMJD-HE2V10W3	120	10W	4,700~5,300	-	ALL	1250 1110	1350 1200	Min.80
	WW				2,600~3,200	-				Min.70
13W	CW	SMJE-2V12W1P3	120	13W	4,700~6,000	McAdam 3 Step	13a 13b	880 1140	1000 1210	Min.80
	NW				3,700~4,200					
	WW				2,600~3,200					
12.7W_Eco	CW	SMJE-2V12W2P4	120	12.7W	4,700~6,000	-	ALL	850	930	Min.80
	WW				2,600~3,200	-				
17W	CW	SMJD-2V16W1P3	120	17W	4,700~6,000	McAdam 3 Step	17a 17b	1140 1480	1300 1590	Min.80
	NW				3,700~4,200					
17W	WW	SMJD-2V16W2P3	120	17W	4,700~6,000	McAdam 3 Step	17a 17b	1140 1480	1300 1590	Min.80
	NW				3,700~4,200					
	WW				2,600~3,200					

* Under Development



Electro Optical Characteristics

Series	Color	Part No.	V _f [V]	Power [W]	CCT[K]	Binning	Flux Bin	Flux[lm] Min.	Flux[lm] Typ.	CRI
4.3W	CW	SMJE-3V04W1P3	220	4.3W	4,700~6,000	McAdam 3 Step	4a 4b	290 380	330 400	Min.80
	NW				3,700~4,200					
	WW				2,600~3,200					
8.7W	CW	SMJE-3V08W1P3	220	8.7W	4,700~6,000	McAdam 3 Step	8a 8b	590 740	650 800	Min.80
	NW				3,700~4,200					
	WW				2,600~3,200					
8.7W_Candle	CW	SMJC-3V08W2P4*	220	8.7W	4,700~6,000	-	ALL	580	670	Min.80
	WW				2,600~3,200	-				
8.7W_Eco	CW	SMJE-3V08W2P4	220	8.7W	4,700~6,000	-	ALL	540	670	Min.80
	WW				2,600~3,200	-				
10W	CW	SMJD-HE2V10W3	220	10W	4,700~5,300	-	ALL	1250 1110	1350 1200	Min.80
	WW				2,600~3,200	-				Min.70
13W	CW	SMJE-3V12W1P3	220	13W	4,700~6,000	McAdam 3 Step	13a 13b	880 1140	1000 1210	Min.80
	NW				3,700~4,200					
	WW				2,600~3,200					
12.7W_Eco	CW	SMJE-3V12W2P4	220	12.7W	4,700~6,000	-	ALL	850	930	Min.80
	WW				2,600~3,200	-				
17W	CW	SMJD-3V16W1P3	220	17W	4,700~6,000	McAdam 3 Step	17a 17b	1140 1480	1300 1590	Min.80
	NW				3,700~4,200					
	WW				2,600~3,200					
17W	CW	SMJD-3V16W2P3	220	17W	4,700~6,000	McAdam 3 Step	17a 17b	1140 1480	1300 1590	Min.80
	NW				3,700~4,200					
	WW				2,600~3,200					

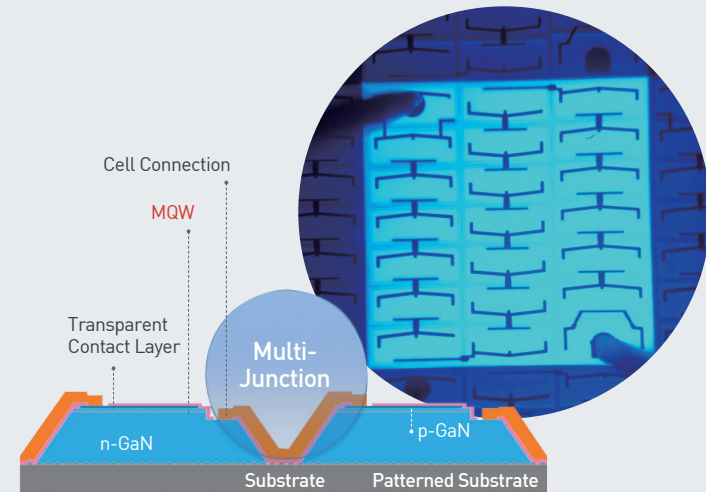
* Under Development

Acrich²

Acrich² MJT

Multi-Junction Technology

MJT stands for Multi Junction Technology, eliminating the usage of multiple wire bonds between several dies. Since it uses only one chip, it vastly improves the reliability of the LED package, reducing the potential number of failure modes associated with wire bonds within the LED package. It can be driven at higher voltage than Conventional DC LEDs, providing designers high voltage options without large form factors of multi-die chip-on-boards.



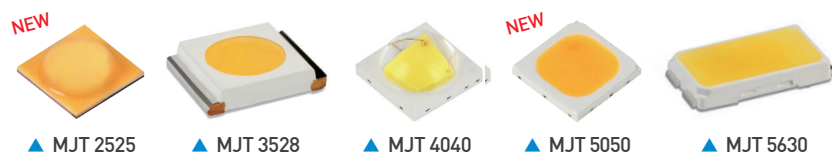
Why Acrich MJT?

MJT Feature	Benefit
High Reliability	Eliminates multiple wire bonds between several die's to create the high voltage architecture improving reliability of the LED package
High Efficiency; Low Cost	Low current high voltage architecture enables simpler, smaller, cheaper and more efficient driver topologies in luminaire designs.
Better Thermal Management	Improved efficiency of the driver electronics results in less heat generated and fewer electronic components used in the driver design allowing more space for thermal management within the luminaire
Scalability	Various package sizes possible with different lumen outputs, forward voltages and power consumptions



Advantages of Multi-Junction Technology

- High voltage, low current operation
 - Efficient, cost-effective drivers
 - Accelerates time to market
- FEATURES**
- Ideal for high voltage DC and AC designs
 - Wide range of voltages 13C - 69V
 - High luminous efficacy up to 141 lm/W



Applications

- Troffer
- Flood Light
- Street Light
- Tunnel
- Wall Washer

Electro Optical Characteristics

Series	Color	Part No.	Size [mm]	V _F [V]	Flux [lm]	I _F [mA]	T _{opt} [°C]	CCT[K]	2θ 1/2 [°]	CRI
NEW Acrich MJT 2525	WW	SAWWSF72A	2.5x2.5x1.2	23	95.0	40	-30~+100	2,600~3,700	130	Min.80
Acrich MJT 3528	WW	SAW8WA2A	3.5x2.8x0.6	32.5	124	40	-30~+85	2,600~3,700	120	82
	CW			32.5	132	40	-30~+85	3,700~7,000		
Acrich MJT 4040	CW	SAW09A0A	4.0x4.0x2.2	32	170	40	-30~+85	4,200~6,000	120	Min.70
	CW	SAW09H0A	4.0x4.0x2.2	64	165	20	-30~+85	4,200~6,000	120	70
NEW Acrich MJT 5050	WW	SAW8LH0A	5.0x5.0x0.65	64	155	20	-30~+100	2,600~3,700	120	80
	CW	SAW0LH0A	5.0x5.0x0.65	64	180	20	-30~+100	4,700~7,000	120	70
Acrich MJT 5630	WW	SAW8KG0B	5.6x3.0x0.75	22	49	20	-30~+85	2,600~3,700	115	82
	CW			22	53			3,700~7,000		
	WW	SAW9KG0B	5.6x3.0x0.75	22	45	20	-30~+85	2,600~3,700	115	Min.90

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

The **High Power (Z-Power) Family** of LEDs have enhanced chip technology for low droop at high temperatures, plus a wide variety of CRI, colors and operating currents.

COB family (ZC series) is now available in a minimum 90 CRI option. It offers high efficacies, lumen density, ease of use and excellent color consistency over a wide range of lumen outputs from 500 to 5000 lumens.

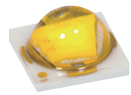
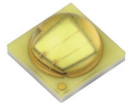
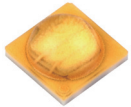


Chip-on-Board (COB) LEDs

Series	Part No.	Color	Power [W]	V _F [V]	I _F [mA]	Flux[lm] Typ.	CCT [K]	CRI	2θ 1/2 [°]	Luminous Efficacy [lm/W]	RθJA [K/W]	Junction Temp. [°C]
ZC4	SDW01F1B	Cool	4.5	9	500	590	5,000	Min.70	120	131	1.7	125
	SDW81F1B	Warm	4.5	9	500	500	3,000	Min.80	120	111	1.7	125
ZC6	SDW01F1C	Cool	6.7	37	180	870	5,000	Min.70	120	130	1.4	125
	SDW81F1C	Neutral	6.7	37	180	805	4,000	Min.80	120	120	1.4	125
	SDW91F1C	Warm	6.7	37	180	710	2,700	Min.80	120	106	1.4	125
		Neutral	6.5	36	180	680	4,000	Min.90	120	105	1.4	125
	SDW02F1C	Warm	6.5	36	180	635	3,000	Min.90	120	98	1.4	125
		Cool	13	37	350	1,780	5,000	Min.70	120	137	0.7	125
ZC12	SDW82F1C	Neutral	13	37	350	1,620	4,000	Min.80	120	125	0.7	125
	SDW92F1C	Warm	13	37	350	1,500	3,000	Min.80	120	115	0.7	125
		Neutral	13	37	350	1,385	4,000	Min.90	120	107	0.7	125
	SDW03F1C	Warm	13	37	350	1,295	3,000	Min.90	120	100	0.7	125
		Cool	18.5	37	500	2,520	5,000	Min.70	120	136	0.7	125
	SDW83F1C	Neutral	18.5	37	500	2,275	4,000	Min.80	120	123	0.7	125
ZC18	SDW93F1C	Warm	18.5	37	500	2,050	3,000	Min.80	120	111	0.7	125
		Neutral	18.5	37	500	1,940	4,000	Min.90	120	105	0.7	125
	SDW04F1C	Warm	18.5	37	500	1,810	3,000	Min.90	120	98	0.7	125
		Cool	25.9	37	700	3,650	5,000	Min.70	120	141	0.4	125
ZC25	SDW84F1C	Neutral	25.9	37	700	3,400	4,000	Min.80	120	131	0.4	125
		Warm	25.9	37	700	3,140	3,000	Min.80	120	121	0.4	125
ZC25	SDW94F1C	Neutral	25.9	37	700	2,770	4,000	Min.90	120	107	0.4	125
		Warm	25.9	37	700	2,590	3,000	Min.90	120	100	0.4	125
ZC40	SDW05F1C	Cool	37	37	1,000	5,030	5,000	Min.70	120	136	0.4	125
	SDW85F1C	Neutral	37	37	1,000	4,650	4,000	Min.80	120	126	0.4	125
		Warm	37	37	1,000	4,300	3,000	Min.80	120	116	0.4	125
	SDW95F1C	Neutral	37	37	1,000	3,885	4,000	Min.90	120	105	0.4	125
		Warm White	37	37	1,000	3,625	3,000	Min.90	120	98	0.4	125

Seoul
Semiconductor
High Power

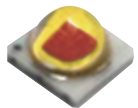
High Power LEDs (White)



Series	Part No.	Color	V _f [V]	Flux[lm] Typ.	CCT [K]	CRI	I _f [mA]		2θ _{1/2} [°]
							Typ.	Max.	
Z5	SZW05A0A	CW	3.3	105	6,300	70	350	700	120
	SZW05A0B	WW		124	6,000	70			
Z5M1	SZ5-M1-W0-00	CW	2.95	158	5,300	Min.70	350	1500	118
	SZ5-M1-WN-00	NW		156	4,000	Min.70			
	SZ5-M1-WN-C8	NW		142	4,000	Min.80			
	SZ5-M1-WW-C8	WW		128	3,000	Min.80			
Z5P1	SZ5-P1-W0-00	CW	3.05	148	5,300	Min.70	350	1000	118
	SZ5-P1-WN-00*	NW		143	4,000	Min.70			
	SZ5-P1-WN-C8	NW		128	4,000	Min.80			
	SZ5-P1-WW-C8	WW		115	3,000	Min.80			

* Under Development

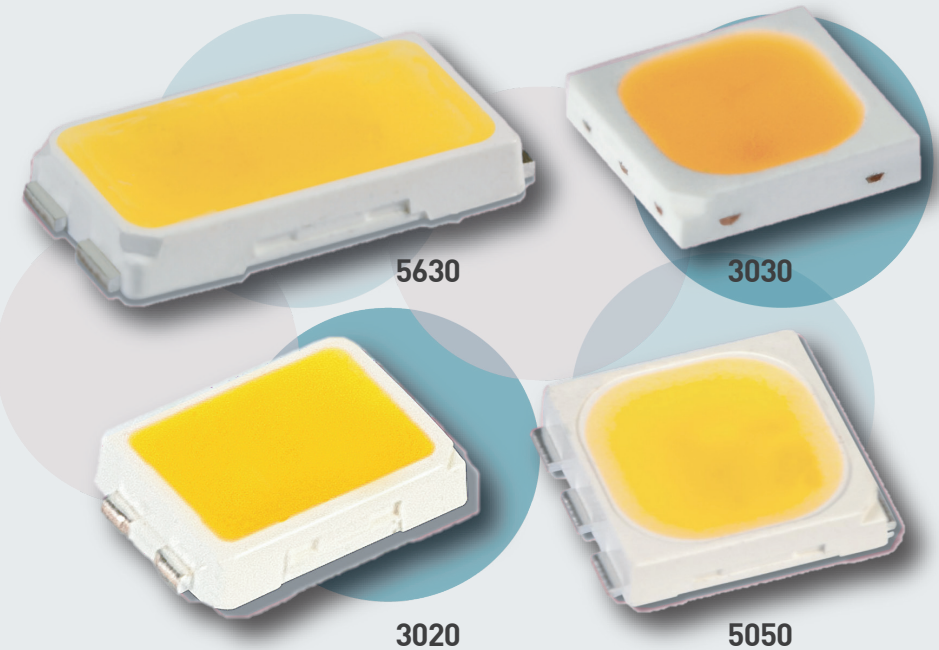
High Power LEDs (Color)



Series	Part No.	Color	V _f [V]	Flux [lm]	λ _d [nm]	P [W]	I _f [mA]		2θ _{1/2} [°]
							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

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.



Seoul Semiconductor
Mid-Power

Electro Optical Characteristics

3020 Series

Series	Part No.	Color	V _f [V]	CCT[K]	Flux[lm] Typ.	P[W]	I _f [mA]		CRI	2θ _{1/2} [°]
							Typ.	Max.		
3020	STW9B12C	WW	3.2	2,600~4,200	27.3	0.3	100	120	Min.80	120
	STW9B12G	WW	3	2,700	7.7	Max 0.13	30	40	Min.90	120
	STW8B12B	CW	3.05	3,700~7,000	13.5	0.12	40	80	Min.80	120
	STW8B12C	WW	3.05	2,600~3,700	15.1	0.12	40	80	Min.80	120
		CW	3.15	3,700~7,000	36.6	0.3	100	120	Min.80	120
		WW		2,600~3,200	32.6					

3030 Series

Series	Part No.	Color	V _f [V]	CCT[K]	Flux[lm] Typ.	P[W]	I _f [mA]		CRI	2θ _{1/2} [°]
							Typ.	Max.		
3030	STW7C2SA	White	6.1	4,700~7,000	86.6	0.6	100	200	Min.70	120
	STW8C2SA	CW		3,700~7,000	81.5				Min.80	
	STW9C2SA	WW		2,600~3,200	77.7				Min.80	
	STW9C2SA	White		2,600~4,200	60				Min.90	

5050 Series

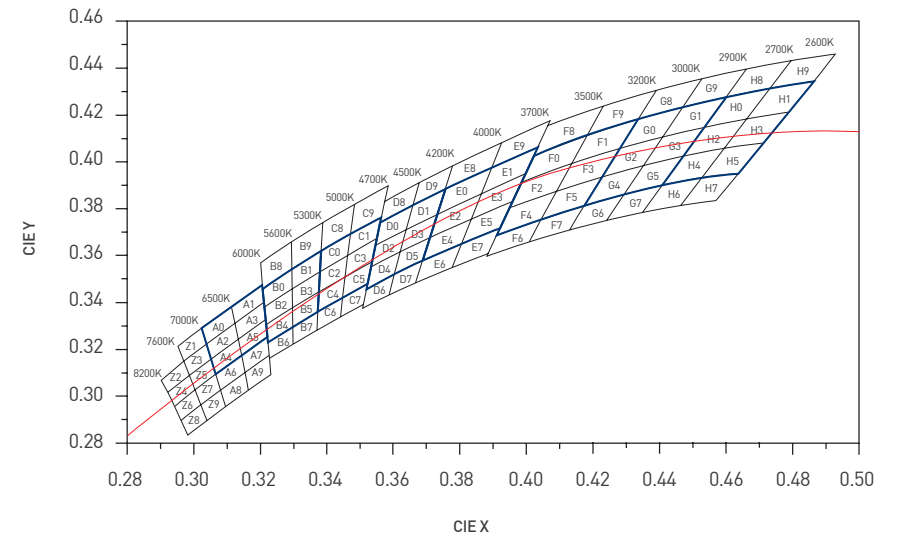
Series	Part No.	Color	V _f [V]	CCT[K]	Flux[lm] Typ.	P[W]	I _f [mA]		CRI	2θ/2°
							Typ.	Max.		
5050	STW7T16A	CW	3.1	4,700-7,000	21.3	0.2	60	90	75	120
	STW8T16A	CW	3.1	3,700-7,000	20.7	0.2	60	90	Min.80	
		WW		2,600-3,700	19.5					
	STW8T36B	CW	3.2	3,700-8,200	19.2	0.2	60	90	80	
		WW		2,600-3,700	16.7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

5630 Series

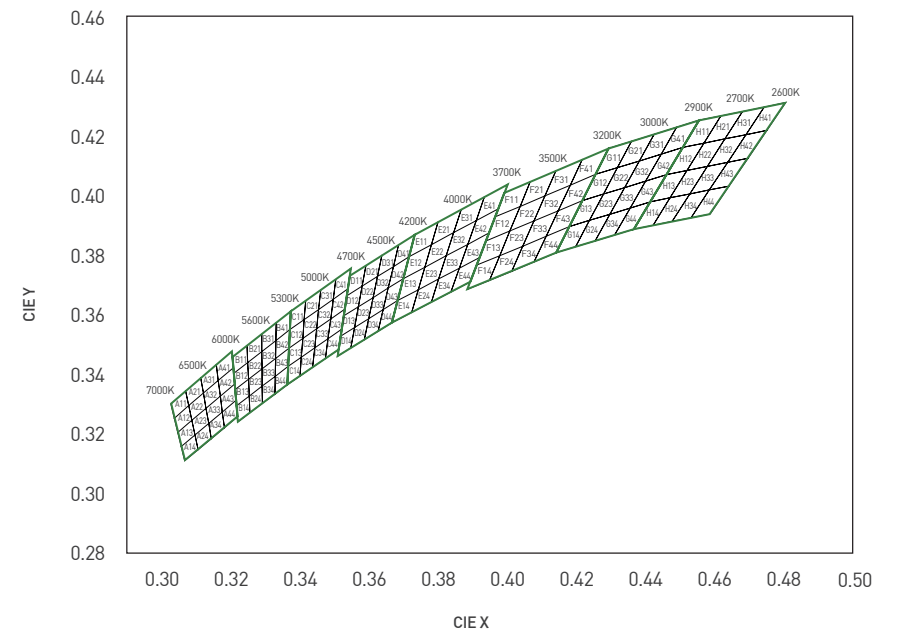
Series	Part No.	Color	V _f [V]	CCT[K]	Flux[lm] Typ.	P[W]	I _f [mA]		CRI	2θ _{1/2} [°]
							Typ.	Max.		
5630	STW8Q14C	CW	3.15	3,700~7,000	43	0.3	100	160	Min.80	120
	STW9Q14C	WW	3.15	2,600~3,700	38.1				Min.80	
	STW9Q14C	WW	3.15	2,600~4,200	30.9				Min.90	
	*STW8Q14D	CW	2.8	5,000	30.8	0.17	60	200	Min.80	
	STW8Q14D	WW	2.8	3,000	28.3				Min.80	
	STW8Q14BE	CW	3.2	2,600~7,000	35	0.3	100	160	Min.80	
	STW8Q14BE	WW	3.2	2,600~7,000	33				Min.80	
	STW9Q14B	White	3.2	2,600~4,500	28.5				Min.90	
	STW8Q2PA	White	3.2	2,600~7,000	29	0.3	100	160	Min.80	120

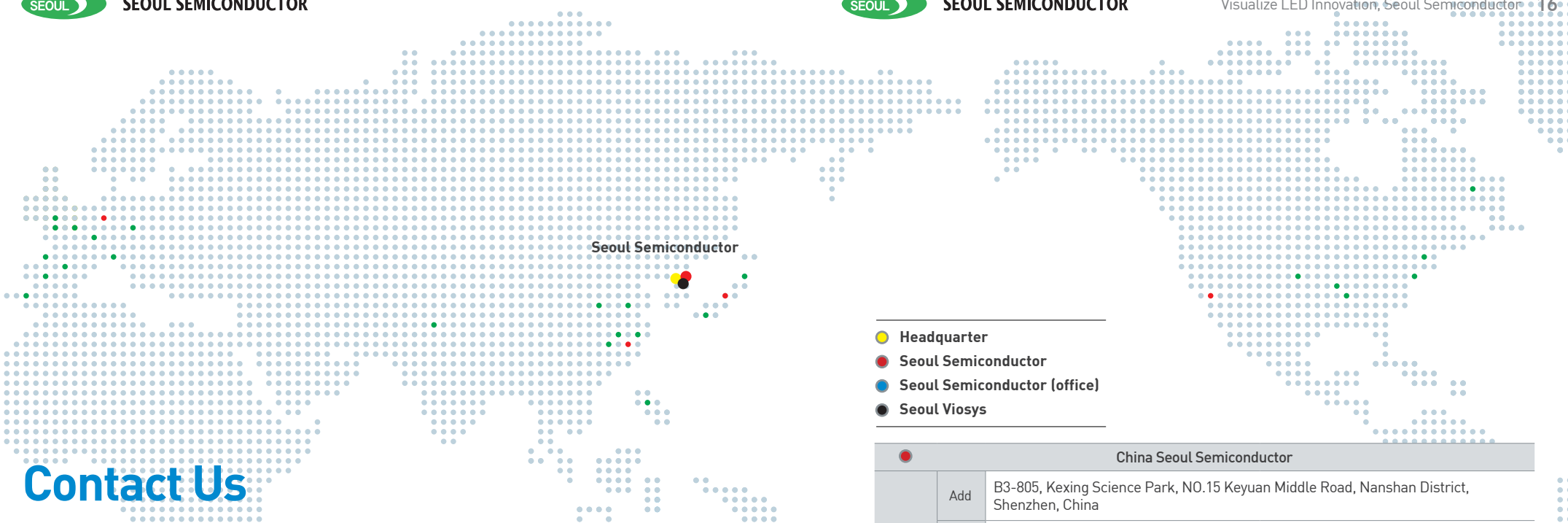
* Coming soon in July, 2014

ANSI-Color Bin



MacAdam 3-STEP Rank




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