

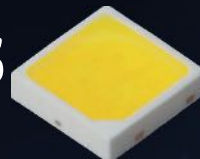


Ever Researching For A Brighter World

**Product Guide
Sep 2017**



Mid Power - 757 series



3.0x3.0x0.65mm

Highest Class & Performance Mid Power

- Leading mid power performance with 210lm/W @ 5,000K
- Leading quality & lifetime at high τ/T_J via proprietary packaging material
- 3-step colour bin options, ≥ 70 , ≥ 80 and ≥ 90 CRI options
- Various power and electrical options
- Wide range of colour temperatures from 2,000k to 6,500k

Applications



Bulb



Downlight



Tube



Troffer



Cove

Specifications

	Ra Rank	CCT	Luminous Flux	Luminous Efficacy	Forward Current		Forward Voltage			Thermal Resistance	Power Dissipation	Junction Temperature
			lm	lm/W	mA		V			°C/W	mW	°C
			Typ.	Typ.	Typ.	Abs. Max. Ratings	Min.	Typ.	Max.	Typ.	Absolute Maximum Ratings	
NFSW757G-V2	R8000	5,000K	36.9	200	65	180	2.4	2.84	3.1	13	594	120
	R9050*		31.1	168								
NFSW757G-V2	R70	3,000K	35.2	191	65	180	2.4	2.84	3.1	13	594	120
	R8000		34.0	185								
	R9050*		28.3	153								
NF2W757G-V2F1	R8000	5,000K	37.5	210	65	180	2.4	2.73	3.0	11	594	120
	R9050*		31.9	180								
NF2W757G-V2F1	R70	3,000K	35.8	202	65	180	2.4	2.73	3.0	11	594	120
	R8000		34.6	195								
	R9050*		29.0	163								
NF2W757GR-V1	R70	5,000K	147	156	150	200	5.7	6.3	6.6	11	1,420	120
	R8000		144	152								
	R9050*		123	130								
NF2L757GR-V1	R70	3,000K	138	146	150	200	5.7	6.3	6.6	11	1,420	120
	R8000		135	143								
	R9050*		112	119								

* Ra $\geq$ 90; R9 $\geq$ 50

2W - x19C series



3.5×3.5×2.0mm

Industry Leading High Power Point Light Source

- Leading high power performance - 148lm/W @ 700mA (4,000K Ra>70 @ 85°C)
- Proven ceramic substrate quality and reliability
- 3-step colour bin options, ≥70, ≥80 and ≥90 CRI options
- Enables precise optical control
- x19C available in 2-pad (119C) and 3-pad (219C) footprint design

Applications



Street/Area



High Bay



Downlight



PAR Lamp



Spotlight

Specifications

			Luminous Flux	Luminous Efficacy	Forward Current		Forward Voltage			Thermal Resistance	Power Dissipation	Junction Temperature
			lm	lm/W	mA		V			°C/W	W	°C
	Ra Rank	CCT	Typ.	Typ.	Typ.	Abs. Max. Ratings	Min.	Typ.	Max.	Typ.	Absolute Maximum Ratings	
NVSW219C	Rnn	5,000K	325	156	700	1,800	2.7	2.98	3.3	4.2	5.94	150
	R70		322	154								
	R8000		280	134								
	R9050*		254	122								
	Rnn		180	181	350			2.84				
	R70		178	179								
	R8000		155	156								
	R9050*		140	141								
NVSL219C	R70	4,000K	320	153	700	1,800	2.7	2.98	3.3	4.2	5.94	150
	R8000		282	135								
	R9050*		243	116								
	R70		177	178	350			2.84				
	R8000		154	155								
	R9050*		134	134								

* Ra≥90; R9≥50

3W - 319A series



3.5x3.5x2.1mm

Next Generation High Power Point Light Source

- Leading high power performance - 164lm/W @ 700mA (5,000K Ra>70 @25°C)
- High reliability ceramic substrate
- Precise optical control and highest class of light
- Available in 2-pad and 3-pad footprint design

Applications



Street/Area



High Bay



Downlight



PAR Lamp



Spotlight

Specifications

				Luminous Flux lm	Luminous Efficacy lm/W	Forward Current mA		Forward Voltage V	Thermal Resistance °C/W		Estimated Lifetime
	Ra Rank	CCT	Tj	Typ.	Typ.	Typ.	Abs. Max.	Typ.	Typ.	Max.	
NVSW3x9A	R70	2700K	25°C	425	134	1050	2000	3.02	3	4	L70= 50,000hr Tj= 144°C
		3000K		440	139						
		3500K		450	142						
		4000K		474	149						
		4500K		477	150						
		5000K		480	151						
		5700K		460	145						
		6500K		457	144						
	R8000	2700K		382	120						
		3000K		400	126						
		3500K		415	131						
		4000K		420	132						
	R70	4500K		422	133						
		5000K		415	131						
		2700K		394	130						
		3000K		408	134						
		3500K	418	137							
		4000K	440	145							
		4500K	443	145							
		5000K	443	145							
	R8000	5700K	424	139							
		6500K	421	138							
		2700K	349	115							
		3000K	365	120							
		3500K	379	125							
		4000K	384	126							
		4500K	386	127							
		5000K	372	122							

measurement condition : 50μsec, 1/100 duty

4W - 229A series



4.0×4.0×2.3mm

4W Point Light Source LED

- 4W class with 146lm/W @ 1,400mA (4,000K/R70 @ 85°C)
- Proven ceramic substrate quality and reliability
- 3-, 5- and 7-step colour bins
- Enables precise optical control

Applications



High Bay



Street/Area



Downlight



PAR Lamp



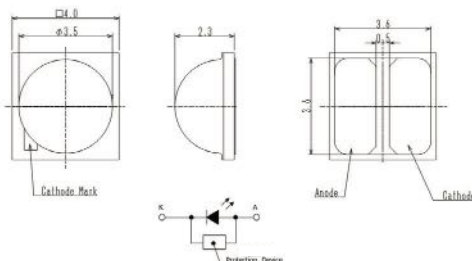
Spotlight

Specifications

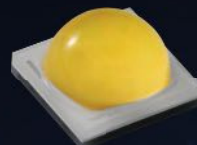
	Ra Rank	CCT	Luminous Flux	Luminous Efficacy	Forward Current		Forward Voltage			Thermal Resistance	Power Dissipation	Junction Temperature
			lm	lm/W	mA		V			°C/W	W	°C
			Typ.	Typ.	Typ.	Abs. Max. Ratings	Min.	Typ.	Max.	Typ.	Absolute Maximum Ratings	
NWSW229A	R70	5,000K	635.4	151	1,400	2,000	2.70	3.00	3.30	3.2	6.60	150
NWSL229A	R70	4,000K	629.2	150	1,400	2,000	2.70	3.00	3.30	3.2	6.60	150
		3,000K	590.3	141								

Dimensions

[NWSx229A Dimension]



8W - 144A series



5.0×5.0×3.15mm

8W Point Light Source LED - Super High Power

- 8W typ. with 155lm/W @ 5,000K Ra>70 @Tj25C
- 6V and 12V option
- Proven ceramic substrate quality and reliability
- Enables narrow beam angles with High Flux

Applications



High Bay



Street/Area



Downlight



PAR Lamp



Spotlight

Specifications

	Ra Rank	CCT	Luminous Flux	Luminous Efficacy	Forward Current		Forward Voltage			Thermal Resistance	Power Dissipation	Junction Temperature
			lm	lm/W	mA		V			C/W	mW	°C
			Typ.	Typ.	Typ.	Abs. Max Rating	Min.	Typ.	Max.	Typ.	Absolute Max. Rating	
NV4W144AR	R70	5000K	1,342	161	700	1,500	11.2	11.9	12.8	1.2	19.2	150
	R8000		1,202	144								
	R9050*		1,071	129								
NV4W144AM	R70	5000K	1,342	161	1,400	3,000	5.40	6.00	6.60	1.2	19.2	150
	R8000		1,202	144								
	R9050*		1,071	129								
NV4L144AR	R70	3000K	1,217	146	700	1,500	11.2	11.9	12.8	1.2	19.2	150
	R8000		1,091	131								
	R9050*		949	114								
NV4L144AM	R70	3000K	1,170	140	1,400	3,000	5.40	6.00	6.60	1.2	19.2	150
	R8000		1,070	128								
	R9050*		930	112								

* Ra≥90; R9≥50

COB B - V2 series



15x12x2mm
19x16x2mm
24x19x2mm
38x38x2mm

Powerful Chip-On-Board Options

- Multiple power levels available up to 10,000lm
- 3-step colour bin, CRI ≥70, ≥80, ≥90 and special CRI options
- Leading COB performance with 170lm/W @ 5,000K Ra>80
- Proven Aluminium Oxide (ceramic) substrate quality and reliability

Applications



Downlight



PAR Lamp



Spotlight



High Bay



Street/Area

Specifications

			Luminous Flux	Luminous Efficacy	Forward current		Forward Voltage		Thermal Resistance	Power dissipation	Tj	L.E.S	Package size	
			lm	lm/W	mA		Vf		°C/W	W	°C			
	Ra Rank	CCT	Typ.	Typ	Typ.	Max.	Typ.	Max.	Typ.	Absolute Max. Rating		mm	mm	
NTCWT012B-V2	R8000	5000K	415	169	70	150	35	37.1	4.1	5.6	140	5.9	15x12x2	
	R9050*		365	149										
	R8000		395	161										
	R9050*		340	139										
NTCWS024B-V2	R8000	5000K	795	169	135	300	34.9	37	3	11.1	140	6.7		
	R9050*		700	149										
	R8000		750	159										
	R9050*		645	137										
NFCWL036B-V2	R8000	5000K	1550	172	260	540	34.7	36.3	1.8	19.6	140	8.7		
	R9050*		1370	152										
	R8000		1470	163										
	R9050*		1270	141										
NFCWL048B-V2	R8000	5000K	2160	172	360	720	34.8	36.4	1.5	26.2	140	11.5		
	R9050*		1930	154										
	R8000		2040	163										
	R9050*		1790	143										
NFCWL060B-V2	R8000	5000K	2760	172	460	900	34.9	36.5	1.4	32.9	140	11.5		
	R9050*		2420	151										
	R8000		2610	163										
	R9050*		2240	140										
NFCWL072B-V2	R8000	5000K	3190	170	540	1080	34.8	36.4	1.2	39.3	140	11.5		
	R9050*		2800	149										
	R8000		3020	161										
	R9050*		2600	138										
NFCWJ084B-V2	R8000	5000K	3940	168	670	1260	35	36.6	1	46.1	140	14.6		
	R9050*		3500	149										
	R8000		3730	159										
	R9050*		3240	138										
NFCWJ096B-V2	R8000	5000K	4450	167	760	1440	35	36.6	0.95	52.7	140	14.6		
	R9050*		3970	149										
	R8000		4210	158										
	R9050*		3680	138										
NFCWJ108B-V2	R8000	5000K	5050	168	860	1620	35	36.6	0.9	59.3	140	14.6		
	R9050*		4500	150										
	R8000		4780	159										
	R9050*		4180	139										
NFCWJ120B-V2	R8000	5000K	6080	164	1050	1800	35.3	36.9	0.9	66.4	140	14.6		
	R9050*		5430	146										
	R8000		5760	155										
	R9050*		5030	136										
NFDWJ130B-V2	R8000	5000K	7170	162	1150	1800	38.6	40.4	0.95	72.7	140	14.6		
	R9050*		6390	144										
	R8000		6780	153										
	R9050*		5930	134										
NFEWH306B-V2	R8000	5000K	12300	169	1400	2100	51.9	54.2	0.55	113.8	140	23	38x38x2	
	R9050*		11040	152										
	R8000		11640	160										
	R9050*		10240	141										

* Ra≥90; R9≥50

COB Z - V1 series



High Flux Chip-On-Board

- The worlds highest class of optical density COB
- 123lm/W, 2200lm @ 17.9W(ϕ 7mm 5,000K Ra>80)
- Proven Aluminium Nitride (ceramic) substrate quality with industry's smallest class of LES
- Long lifetime performance - 50,000 hours L70 @ Tj=136°C
- Superior thermal dissipation performance

15x12x2mm - L.E.S 7 mm
19x16x2mm - L.E.S 11 mm
24x19x2mm - L.E.S 14.6 mm

Applications



PAR Lamp



Spotlight



High Bay



Street/Area

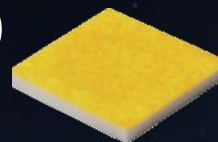
Specifications

	Ra Rank	CCT	Luminous Flux	Luminous Efficacy	Forward Current		Forward Voltage			Thermal Resistance	Power Dissipation	Junction Temperature
			lm	lm/W	mA		V			C/W	mW	C
			Typ.	Typ.	Typ.	Abs. Max Rating	Min.	Typ.	Max.	Typ.	Absolute Max. Rating	
NJCWS024Z-V1	R70	5000K	2,570	144	500	1,000	33.0	35.8	38.7	1.14	38.7	150
	R8000		2,460	137								
	R9050 *		2,170	121								
	R70	3000K	2,500	140								
	R8000		2,200	123								
NVCWL024Z-V1	R9050 *	5000K	1,920	107	1,200	2,200	32.6	35.4	38.2	0.8	84.0	150
	R70		6,600	155								
	R8000		6,300	148								
	R9050 *	3000K	5,550	131								
	R70		6,420	151								
NVEWJ048Z-V1	R8000	5000K	5,650	133	1,800	3,300	43.4	47.2	51.0	0.4	168.0	150
	R9050 *		4,930	116								
	R70		12,740	150								
	R8000	3000K	12,160	143								
	R9050 *		10,720	126								
	R70		12,400	146								
	R8000		10,910	128								
	R9050 *		9,520	112								

Data is tentative * Ra≥90; R9≥50

Direct Mountable Chip

(E17 and E21 series)



Minimized Size, Maximized Flux Density

- Package free chip scale solution
- 1W and 2W options
- Extremely high flux density
- Optics friendly - Topside emission only
- High density module - minimized crosstalk
- Application design flexibility
- 2 Steps option available

E17-1.7×1.7×0.27mm (White/R8000)
 E17-1.7×1.7×0.30mm (Warm White/R8000)
 E21-2.1×2.1×0.27mm (White/R8000)
 E21-2.1×2.1×0.30mm (Warm White/R8000)

Applications



PAR Lamp



Spotlight



High Bay



Street/Area



Portable Light

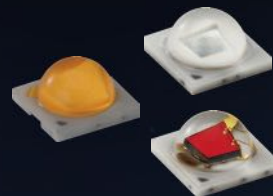
Specifications

	Ra	CCT	Luminous Flux	Luminous Efficacy	Forward current		Forward Voltage		Thermal Resistance	Power dissipation	T _J
			lm	lm/W	mA		Vf		°C/W	W	°C
			Typ.	Typ	Typ.	Max.	Typ.	Max.	Typ.	Absolute Max. Rating	
NCSWE17A	R70	5000K	158	150	350	700	3	3.3	0.5	2.3	135
	R8000		148	141							
	R9050*		125	119							
	R9080**		118	109							
NCSLE17A	R70	3000K	151	143	350	700	3	3.3	0.5	2.3	135
	R8000		133	126							
	R9050*		111	105							
	R9080**		100	95							
NVSWE21A	R70	5000K	320	152	700	1400	3	3.3	0.3	4.6	135
	R8000		298	141							
	R9050*		248	118							
	R9080**		230	109							
NVSLE21A	R70	3000K	306	145	700	1400	3	3.3	0.3	4.6	135
	R8000		268	127							
	R9050*		220	104							
	R9080**		204	96							

* Ra≥90; R9≥50

** Ra≥90; R9≥80

Single Colour LEDs



For Entertainment and Accent Lighting

- High flux and high efficacy colour LEDs
- Low, mid and high power options
- x19B-V1 available in 2-pad (119) and 3-pad (219) footprint design

Applications



Decorative



Gaming



Signage



Special Effects



Traffic

Specifications

	3.5x3.5x2.0mm		Luminous Flux	Luminous Efficacy	Current		Forward Voltage			Thermal Resistance	Power Dissipation	Junction Temperature
	λ nm	Colour	lm	lm/W	mA		V			°C/W	W	°C
			Typ.	Typ.	Typ.	Abs. Max. Ratings	Min.	Typ.	Max.	Typ.	Absolute Maximum Ratings	
NCSBx19B-V1	470	Blue	40.0	38.1	350	1500	2.7	3.0	3.3	10	4.95	150
NCSx19B-V1	450	Blue	680mW	-		1500	2.7	2.93	3.3	8	4.95	
NCSEx19B-V1	505	Green	108	92		1200	3.1	3.32	3.7	25	4.44	
NCSGx19B-V1	527	Green	139	117		1200	3.0	3.38	3.8	25	4.56	
NCSAx19B-V11	590	Yellow	118	114	700	1500	2.7	2.93	3.3	11	4.95	150
NVSAx19B-V11	590	Yellow	240	115		1500	2.70	2.98	3.30	9	4.95	
NCSRx19B-V1	622	Red	75	98		700	1.8	2.20	2.60	11	1.82	



3.0x1.4x0.52mm

NESR157A	622	Red	7.5	68	50	70	1.8	2.2	2.9	20	0.203	120
NESG157A	525	Green	15.4	86			2.9	3.5	3.9	42	0.273	
NESB157A	470	Blue	4.4	30		90	2.5	2.9	3.3	22	0.297	



3.0x3.0x0.65mm

NE2R757G	622	Red	17.5	58.3	100	140	2.6	3.0	3.4	-	-	120
NE2G757G	525	Green	34	97.1			2.9	3.5	3.9	46	0.546	
NE2B757G	470	Blue	8.7	30.0			2.5	2.9	3.3	20	0.462	
NFSY757G 1	580	Yellow	30.2	161.3	65	150	2.4	2.88	3.3	24	0.495	120

¹phosphor converted

Special Colour Rendering LEDs

For High Quality Retail Lighting

- High CRI and Special Colour Rendering for General Lighting

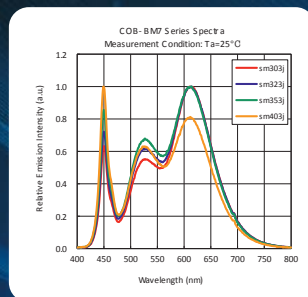
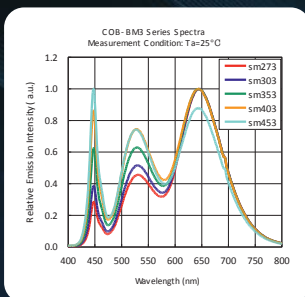
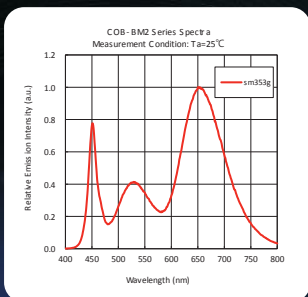
M2: Red/Meat



M3: Primary Colours



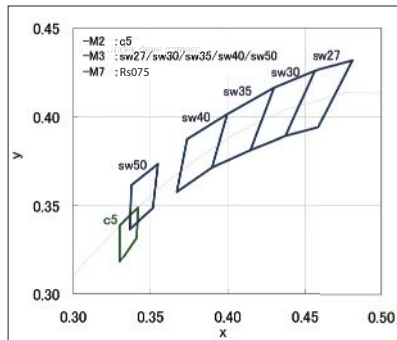
M7: Vivid Whites



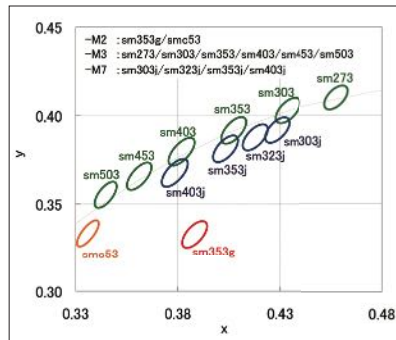
UV Free

Available colour ranks

Mid Power - 757 series



COB series



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