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LED Module V-series

VB22A



VB22B



VB22C



V562A



V562B



V562C



V282A



V282B



Features& Benefits

- Cost effective solution, deliver better lm/\$
- Same mechanical foot-print as existing M-series
- Good efficacy, 146 lm/W @ 4000K
-

Applications

Indoor Lighting:

- Troffer / Linear / Line fixtures



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1. Product Code Information

a) VB22A

Nominal CCT (K)	Product Code
3000	SI-B8V221B2CUS
3500	SI-B8U221B2CUS
4000	SI-B8T221B2CUS
5000	SI-B8R221B2CUS

b) VB22B

Nominal CCT (K)	Product Code
3000	SI-B8V301B2CUS
3500	SI-B8U301B2CUS
4000	SI-B8T301B2CUS
5000	SI-B8R301B2CUS

c) VB22C

Nominal CCT (K)	Product Code
3000	SI-B8V341B2CUS
3500	SI-B8U341B2CUS
4000	SI-B8T341B2CUS
5000	SI-B8R341B2CUS

d) V562A

Nominal CCT (K)	Product Code
3000	SI-B8V11156CWW
3500	SI-B8U11156CWW
4000	SI-B8T11156CWW
5000	SI-B8R11156CWW

e) V562B

Nominal CCT (K)	Product Code
3000	SI-B8V15156CWW
3500	SI-B8U15156CWW
4000	SI-B8T15156CWW
5000	SI-B8R15156CWW

f) V562C

Nominal CCT (K)	Product Code
3000	SI-B8V17156CWW
3500	SI-B8U17156CWW
4000	SI-B8T17156CWW
5000	SI-B8R17156CWW

g) V282A

Nominal CCT (K)	Product Code
3000	SI-B8V06128CWW
3500	SI-B8U06128CWW
4000	SI-B8T06128CWW
5000	SI-B8R06128CWW

h) V282B

Nominal CCT (K)	Product Code
3000	SI-B8V08128CWW
3500	SI-B8U08128CWW
4000	SI-B8T08128CWW
5000	SI-B8R08128CWW

2. Characteristics

Item	Rating	Unit	Remark
Rated Lifetime	>50,000	hour	L70B50
Ingress Protection (IP)	no rating	-	
Ambient / Operating Temperature (t_{amb})	-30 ~ +50	°C	
Storage Temperature	-30 ~ +80	°C	

(a) VB22A

Item	Nom. CCT (K)	Rating			Unit	Remark
		Min	Typ.	Max		
Luminous Flux (Φ_v)	3000	2426	2696	2968	lm	
	3500	2520	2800	3082		
	4000	2614	2904	3194		
	5000	2614	2904	3194		
Luminous Efficacy	3000	115	127	140	lm/W	$I_f = 840 \text{ mA}$ $t_p = 50 \text{ }^\circ\text{C}$
	3500	119	132	146		
	4000	124	137	151		
	5000	124	137	151		
CCT	3000	2980	3045	3110	K	
	3500	3360	3465	3570		
	4000	3830	3985	4130		
	5000	4810	5028	5240		
Color Consistency (initial)		-	-	3	Mac Adam step	
Color Rendering Index (Ra)		80	83	-	-	
Operating Current (I_f)		-	840	1080	mA	-
Operating Voltage (V_f)		22.68	25.2	27.72	Vdc	$I_f = 840 \text{ mA}$
Power Consumption		19.04	21.16	23.28	W	$t_p = 50 \text{ }^\circ\text{C}$

Notes:

- 1) t_p : temperature at which performance is specified; measured at “tc point”.
- 2) Samsung maintains a measurement tolerance of: Luminous flux: $\pm 5\%$, CRI: ± 2.0 , Voltage: $\pm 0.3\text{V}$, Power Consumption: $\pm 0.5\text{W}$

(b) VB22B

Item	Nom. CCT (K)	Rating			Unit	Remark
		Min	Typ.	Max		
Luminous Flux (Φ_v)	3000	3681	4090	4499	lm	
	3500	3796	4218	4640		
	4000	3883	4314	4745		
	5000	3883	4314	4745		
Luminous Efficacy	3000	115	128	141	lm/W	$I_f = 1260 \text{ mA}$ $t_p = 50 \text{ }^\circ\text{C}$
	3500	119	132	145		
	4000	121	135	148		
	5000	121	135	148		
CCT	3000	2980	3045	3110	K	
	3500	3360	3465	3570		
	4000	3830	3985	4130		
	5000	4810	5028	5240		
Color Consistency (initial)		-	-	3	Mac Adam step	
Color Rendering Index (Ra)		80	83	-	-	
Operating Current (I_f)		-	1260	1440	mA	-
Operating Voltage (V_f)		22.82	25.36	27.9	Vdc	$I_f = 1260 \text{ mA}$ $t_p = 50 \text{ }^\circ\text{C}$
Power Consumption		28.75	31.96	35.15	W	$t_p = 50 \text{ }^\circ\text{C}$

Notes:

- 1) t_p : temperature at which performance is specified; measured at "tc point".
- 2) Samsung maintains a measurement tolerance of: Luminous flux: $\pm 5\%$, CRI: ± 2.0 , Voltage: $\pm 0.3\text{V}$, Power Consumption: $\pm 0.5\text{W}$

(c) VB22C

Item	Nom. CCT (K)	Rating			Unit	Remark
		Min	Typ.	Max		
Luminous Flux (Φ_v)	3000	4086	4540	4994	lm	
	3500	4264	4738	5212		
	4000	4428	4920	5412		
	5000	4428	4920	5412		
Luminous Efficacy	3000	122	135	149	lm/W	$I_f = 700 \text{ mA}$ $t_p = 50 \text{ }^\circ\text{C}$
	3500	127	141	155		
	4000	132	146	161		
	5000	132	146	161		
CCT	3000	2980	3045	3110	K	
	3500	3360	3465	3570		
	4000	3830	3985	4130		
	5000	4810	5028	5240		
Color Consistency (initial)		-	-	3	MacAdam step	
Color Rendering Index (Ra)		80	83	-	-	
Operating Current (I_f)		-	700	1080	mA	-
Operating Voltage (V_f)		43.2	48.0	52.8	Vdc	$I_f = 700 \text{ mA}$
Power Consumption		30.24	33.6	36.96	W	$t_p = 50 \text{ }^\circ\text{C}$

Notes:

- 1) t_p : temperature at which performance is specified; measured at “tc point”.
- 2) Samsung maintains a measurement tolerance of: Luminous flux: $\pm 5\%$, CRI: ± 2.0 , Voltage: $\pm 0.3\text{V}$, Power Consumption: $\pm 0.5\text{W}$

(d) V562A

Item	Nom. CCT (K)	Rating			Unit	Remark
		Min	Typ.	Max		
Luminous Flux (Φ_v)	3000	1213	1348	1484	lm	I _f = 420mA t _p = 50 °C
	3500	1260	1400	1541		
	4000	1307	1452	1597		
	5000	1307	1452	1597		
Luminous Efficacy	3000	115	127	140	lm/W	
	3500	119	132	146		
	4000	124	137	151		
	5000	124	137	151		
CCT	3000	2980	3045	3110	K	
	3500	3360	3465	3570		
	4000	3830	3985	4130		
	5000	4810	5028	5240		
Color Consistency (initial)		-	-	3	Mac Adam step	
Color Rendering Index (Ra)		80	83	-	-	
Operating Current (I _f)		-	420	540	mA	-
Operating Voltage (V _f)		22.68	25.20	27.72	Vdc	I _f = 420 mA
Power Consumption		9.52	10.58	11.64	W	t _p = 50 °C

Notes:

- 1) t_p: temperature at which performance is specified; measured at "tc point".
- 2) Samsung maintains a measurement tolerance of: Luminous flux: ±5%, CRI: ±2.0, Voltage: ±0.3V, Power Consumption: ±0.3W

(e) V562B

Item	Nom. CCT (K)	Rating			Unit	Remark
		Min	Typ.	Max		
Luminous Flux (Φ_v)	3000	1841	2045	2250	lm	$I_f = 630 \text{ mA}$ $t_p = 50 \text{ }^\circ\text{C}$
	3500	1898	2109	2320		
	4000	1941	2157	2373		
	5000	1941	2157	2373		
Luminous Efficacy	3000	115	128	141	lm/W	
	3500	119	132	145		
	4000	121	135	148		
	5000	121	135	148		
CCT	3000	2980	3045	3110	K	
	3500	3360	3465	3570		
	4000	3830	3985	4130		
	5000	4810	5028	5240		
Color Consistency (initial)		-	-	3	Mac Adam step	
Color Rendering Index (Ra)		80	83	-	-	
Operating Current (I_f)		-	630	720	mA	-
Operating Voltage (V_f)		22.82	25.36	27.9	Vdc	$I_f = 630 \text{ mA}$
Power Consumption		14.38	15.98	17.58	W	$t_p = 50 \text{ }^\circ\text{C}$

Notes:

- 1) t_p : temperature at which performance is specified; measured at "tc point".
- 2) Samsung maintains a measurement tolerance of: Luminous flux: $\pm 5\%$, CRI: ± 2.0 , Voltage: $\pm 0.3\text{V}$, Power Consumption: $\pm 0.5\text{W}$

(f) V562C

Item	Nom. CCT (K)	Rating			Unit	Remark
		Min	Typ.	Max		
Luminous Flux (Φ_v)	3000	2043	2270	2497	lm	
	3500	2132	2369	2606		
	4000	2214	2460	2706		
	5000	2214	2460	2706		
Luminous Efficacy	3000	122	135	149	lm/W	If = 700 mA $t_p = 50^\circ\text{C}$
	3500	127	141	155		
	4000	132	146	161		
	5000	132	146	161		
CCT	3000	2980	3045	3110	K	
	3500	3360	3465	3570		
	4000	3830	3985	4130		
	5000	4810	5028	5240		
Color Consistency (initial)		-	-	3	MacAdam step	
Color Rendering Index (Ra)		80	83	-	-	
Operating Current (I_f)		-	700	1080	mA	-
Operating Voltage (V_f)		21.6	24.0	26.4	Vdc	If = 700 mA
Power Consumption		15.12	16.8	18.48	W	$t_p = 50^\circ\text{C}$

Notes:

- 1) t_p : temperature at which performance is specified; measured at "tc point".
- 2) Samsung maintains a measurement tolerance of: Luminous flux: $\pm 5\%$, CRI: ± 2.0 , Voltage: $\pm 0.3\text{V}$, Power Consumption: $\pm 0.5\text{W}$

(g) V282A

Item	Nom. CCT (K)	Rating			Unit	Remark
		Min	Typ.	Max		
Luminous Flux (Φ_v)	3000	651	724	796	lm	
	3500	672	746	821		
	4000	692	769	846		
	5000	692	769	846		
Luminous Efficacy	3000	115	128	140	lm/W	$I_f = 450 \text{ mA}$ $t_p = 50^\circ\text{C}$
	3500	119	132	145		
	4000	122	136	149		
	5000	122	136	149		
CCT	3000	2980	3045	3110	K	
	3500	3360	3465	3570		
	4000	3830	3985	4130		
	5000	4810	5028	5240		
Color Consistency (initial)		-	-	3	Mac Adam step	
Color Rendering Index (Ra)		80	83	-	-	
Operating Current (I_f)		-	450	540	mA	-
Operating Voltage (V_f)		11.34	12.60	13.86	Vdc	$I_f = 450 \text{ mA}$
Power Consumption		5.10	5.67	6.24	W	$t_p = 50^\circ\text{C}$

Notes:

- 1) t_p : temperature at which performance is specified; measured at “tc point”.
- 2) Samsung maintains a measurement tolerance of: Luminous flux: $\pm 5\%$, CRI: ± 2.0 , Voltage: $\pm 0.3\text{V}$, Power Consumption: $\pm 0.3\text{W}$

(h) V282B

Item	Nom. CCT (K)	Rating			Unit	Remark
		Min	Typ.	Max		
Luminous Flux (Φ_v)	3000	869	965	1062	lm	I _f = 300 mA t _p = 50 °C
	3500	896	995	1095		
	4000	923	1026	1129		
	5000	923	1026	1129		
Luminous Efficacy	3000	115	128	141	lm/W	
	3500	119	132	145		
	4000	122	136	149		
	5000	122	136	149		
CCT	3000	2980	3045	3110	K	
	3500	3360	3465	3570		
	4000	3830	3985	4130		
	5000	4810	5028	5240		
Color Consistency (initial)		-	-	3	Mac Adam step	
Color Rendering Index (Ra)		80	83	-	-	
Operating Current (I _f)		-	300	360	mA	-
Operating Voltage (V _f)		22.68	25.20	27.72	Vdc	I _f = 300 mA
Power Consumption		6.80	7.56	8.32	W	t _p = 50°C

Notes:

- 1) t_p: temperature at which performance is specified; measured at “tc point”.
- 2) Samsung maintains a measurement tolerance of: Luminous flux: ±5%, CRI: ±2.0, Voltage: ±0.3V, Power Consumption: ±0.3W

Item	Nominal*	Life	Max**	Unit
Temperature for V282A,	50 (t _p)	70 (t _{p,50})	90 (t _c)	°C
Temperature for V282B,	50 (t _p)	70 (t _{p,50})	90 (t _c)	°C
Temperature for V562A,	50 (t _p)	70 (t _{p,50})	90 (t _c)	°C
Temperature for V562B,	50 (t _p)	70 (t _{p,50})	90 (t _c)	°C
Temperature for V562C	50 (t _p)	70 (t _{p,50})	90 (t _c)	°C
Temperature for LT-VB22A,	50 (t _p)	70 (t _{p,50})	90 (t _c)	°C
Temperature for LT-VB22B,	50 (t _p)	70 (t _{p,50})	90 (t _c)	°C
Temperature for LT-VB22C,	50 (t _p)	70 (t _{p,50})	90 (t _c)	°C

Notes:

- * Temperature used to specify performance of the module (t_p).
 - ** Rated maximum temperature, highest permissible temperature to avoid safety risk (t_c).
- All temperatures are measured at the designated “tc point” as indicated on the module.

3. Structure and Assembly

a) Appearance

VB22A



VB22B



VB22C



V562A



V562B



V562C



V282A



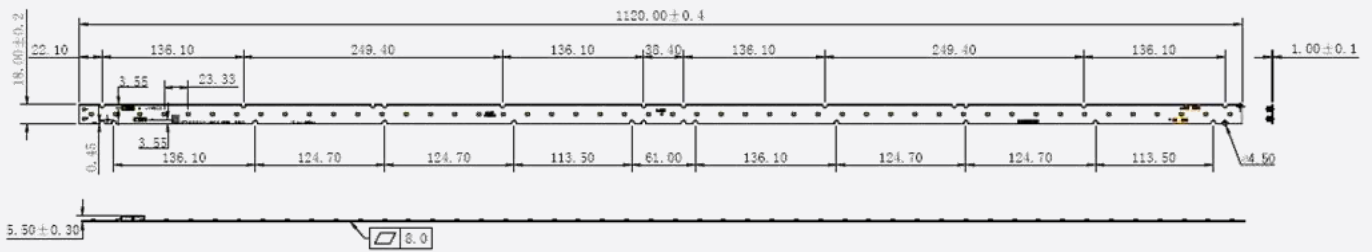
V282B



b) Dimension

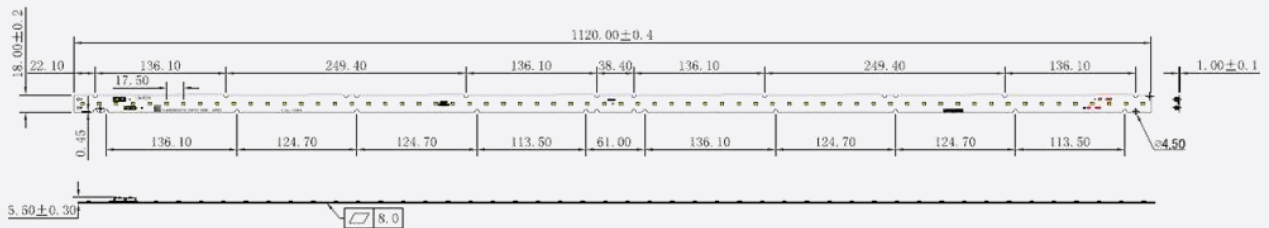
VB22A

Dimension	Specification	Tolerance	Unit
Module Length	1120	±0.4	mm
Module Width	18	±0.2	mm
Module Height	5.5	±0.3	mm
PCB Thickness	1.0	±0.1	mm
Module Weight	45.15	±1.5	g



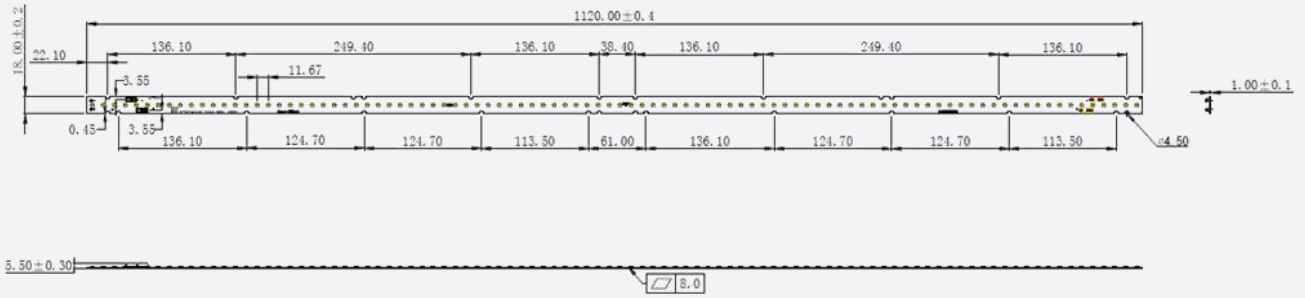
VB22B

Dimension	Specification	Tolerance	Unit
Module Length	1120	±0.4	mm
Module Width	18	±0.2	mm
Module Height	5.5	±0.3	mm
PCB Thickness	1.0	±0.1	mm
Module Weight	45.25	±1.5	g



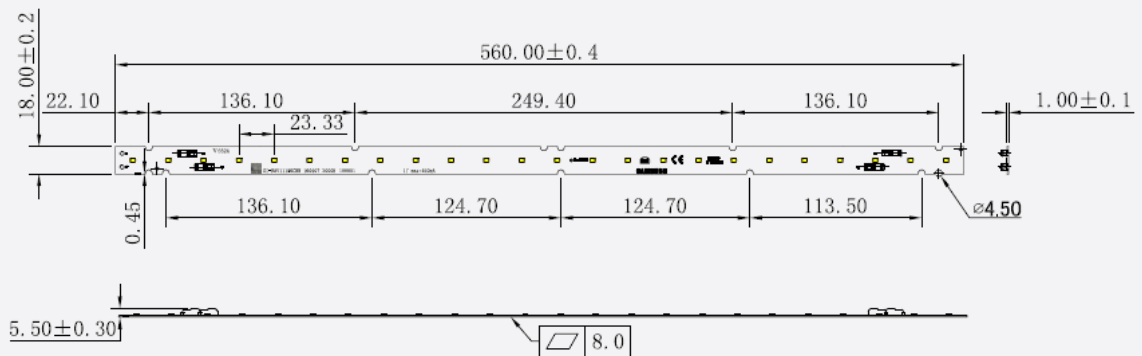
VB22C

Dimension	Specification	Tolerance	Unit
Module Length	1120	±0.4	mm
Module Width	18	±0.2	mm
Module Height	5.5	±0.3	mm
PCB Thickness	1.0	±0.1	mm
Module Weight	49.1	±1.5	g



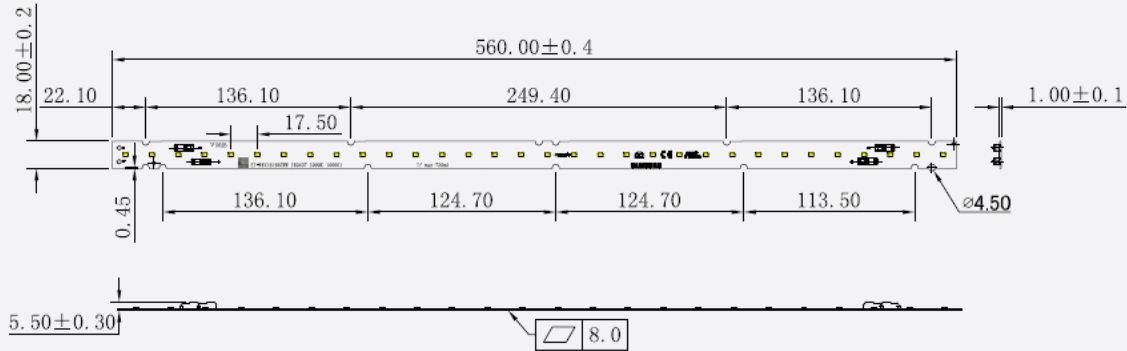
V562A

Dimension	Specification	Tolerance	Unit
Module Length	560	±0.4	mm
Module Width	18	±0.2	mm
Module Height	5.5	±0.3	mm
PCB Thickness	1.0	±0.1	mm
Module Weight	24.77	±1.5	g



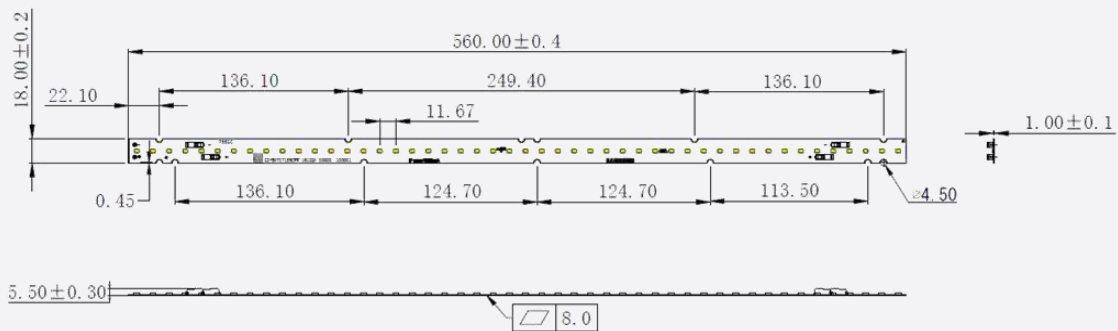
V562B

Dimension	Specification	Tolerance	Unit
Module Length	560	±0.4	mm
Module Width	18	±0.2	mm
Module Height	5.5	±0.3	mm
PCB Thickness	1.0	±0.1	mm
Module Weight	24.86	±1.5	g



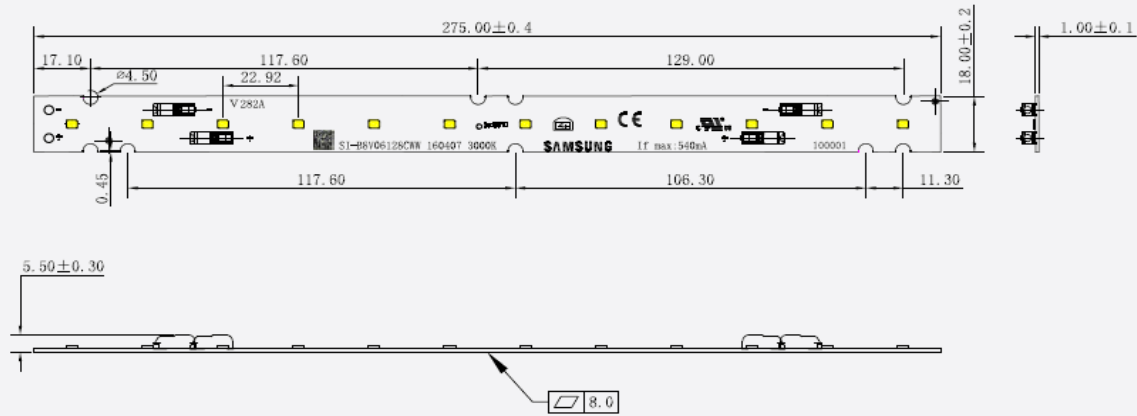
V562C

Dimension	Specification	Tolerance	Unit
Module Length	560	±0.4	mm
Module Width	18	±0.2	mm
Module Height	5.5	±0.3	mm
PCB Thickness	1.0	±0.1	mm
Module Weight	24.94	±1.5	g



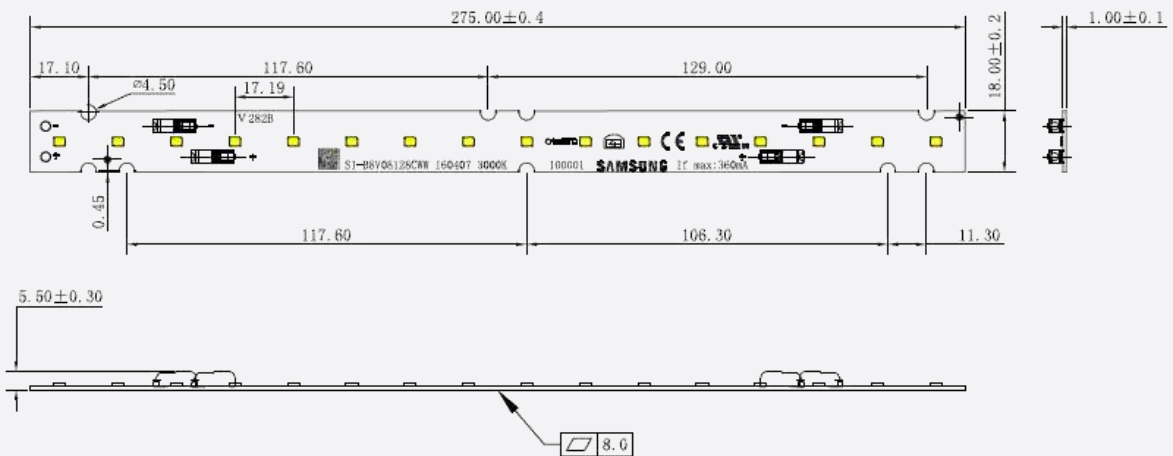
V282A

Dimension	Specification	Tolerance	Unit
Module Length	275	±0.4	mm
Module Width	18	±0.2	mm
Module Height	5.5	±0.3	mm
PCB Thickness	1.0	±0.1	mm
Module Weight	12.54	±1.5	g



V282B

Dimension	Specification	Tolerance	Unit
Module Length	275	±0.4	mm
Module Width	18	±0.2	mm
Module Height	5.5	±0.3	mm
PCB Thickness	1.0	±0.1	mm
Module Weight	12.60	±1.5	g



c) Assembly

Connectors on the board are provided for easy wiring with the LED driver and between modules

[Front connector]



VB22A



VB22B



VB22C



V562A



V562B



V562C



V282A



V282B





VB22A



VB22B



VB22C



V562A



V562B



V562C



V282A



V282B

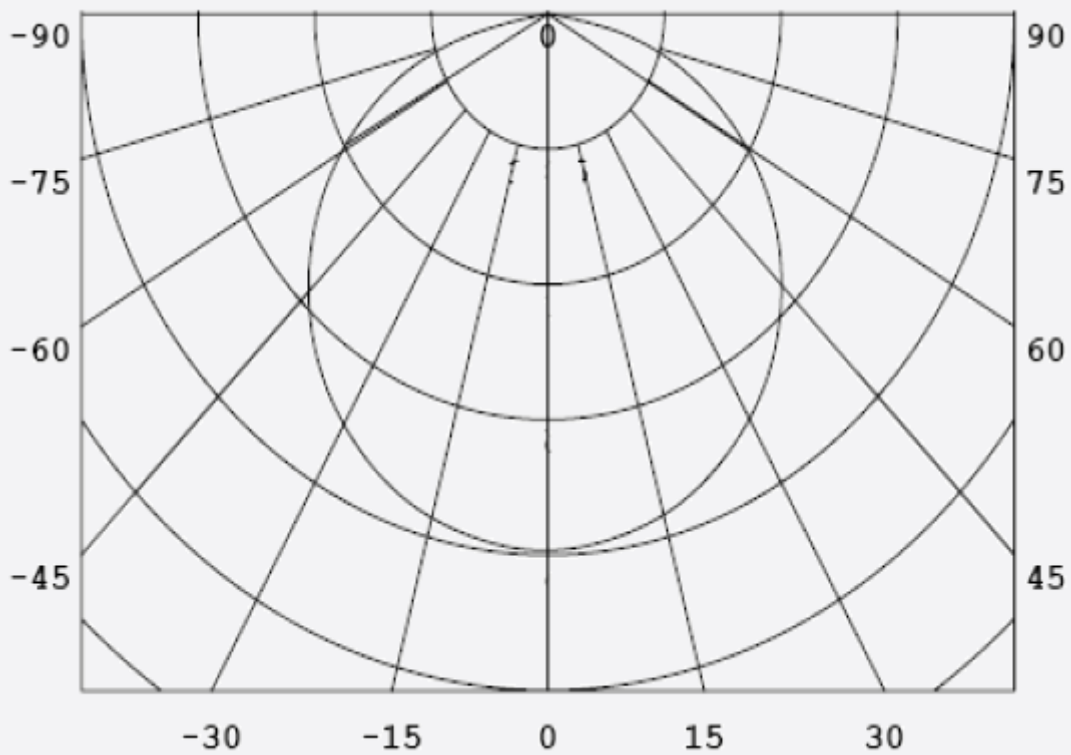


d) Structure

Item	Specification
LED	SMD2835 Middle power LED
PCB	Material: CEM-3,copperdouble layer
Connector	Reworkable poke-in connector type
Wire	18-22AWG; terminal strip length of 7.5-8.5mm

e) Light Distribution

Polar Intensity Diagram: Beam Angle $120 \pm 5^\circ$



f) Thermal Management

Performance temperatures are measured on “tc point” as indicated on the module.

VB22A



VB22B



VB22C



V562A



V562B



V562C



V282A

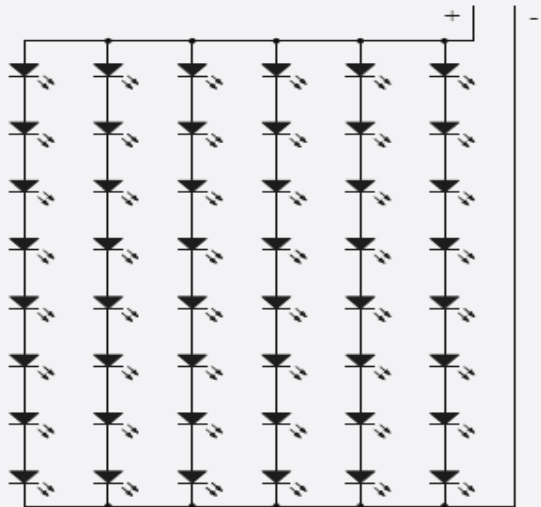


V282B

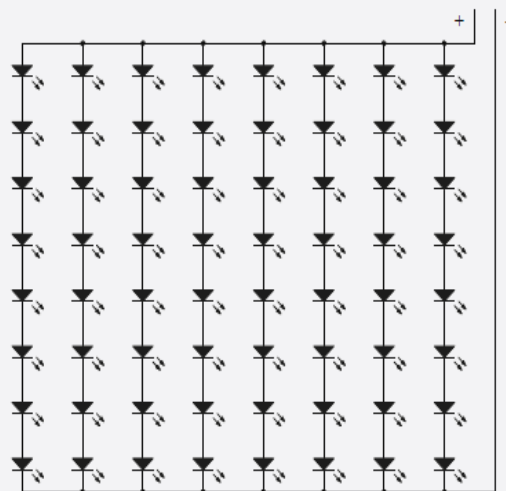


g) Schematic Circuit

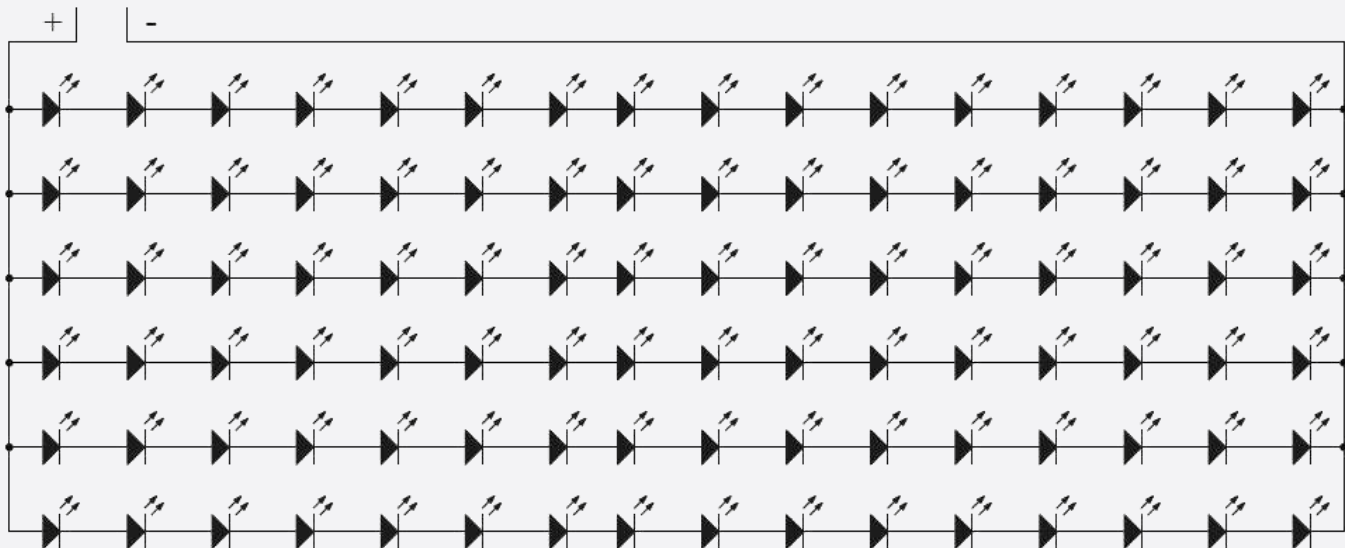
VB22A
8S×6P



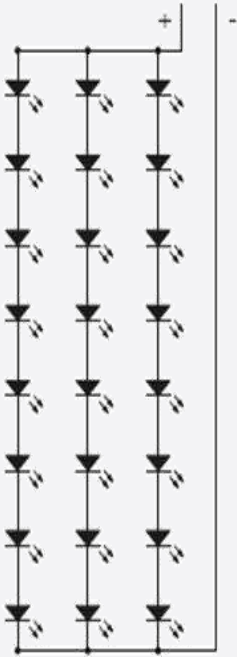
VB22B
8S×8P



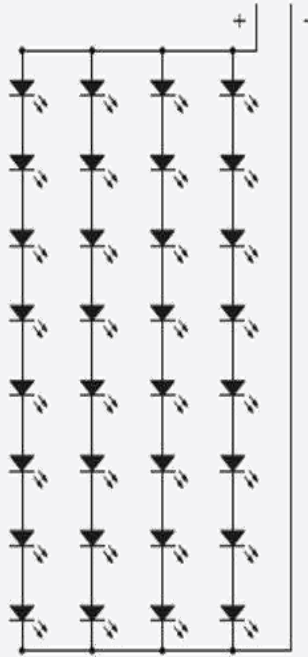
VB22C
16S×6P



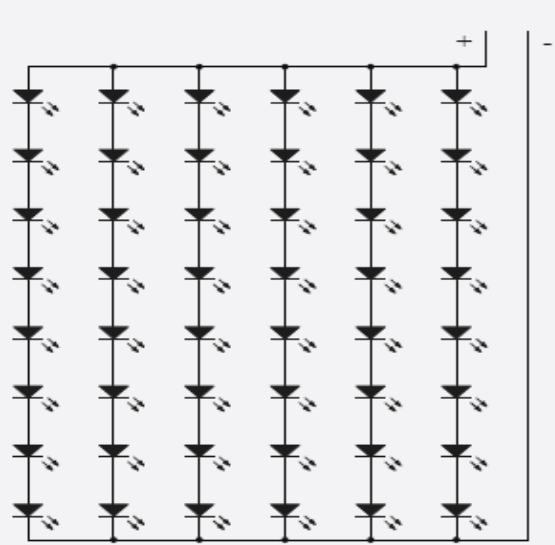
V562A
8S×3P



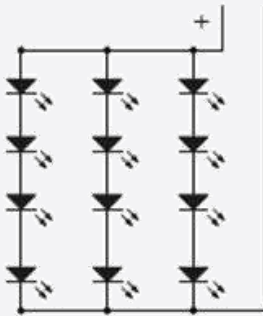
V562B
8S×4P



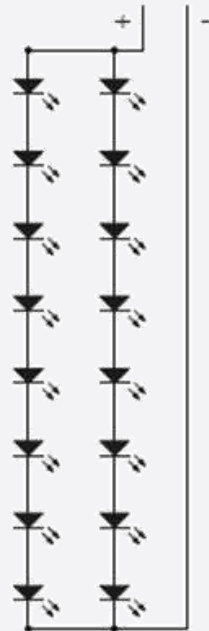
V562C
8S×6P



V282A
4S×3P



V282B
8S×2P



4. Certification and Declaration

Item	Compliant to	Remark
Test & Certification	ENEC	-
	VDE	-
	UL	E344519
	cUL	E344519
Declaration	RoHS	Hazardous Substance & Material
	REACH	Hazardous Substance & Material