LED Module

LT-HB22D
LT-H562D
LT-H282D

Features & Benefits

- Premium linear to deliver the highest efficacy, 187 lm/W @ 4000K
- Three options of the board length : 4ft / 2ft / 1ft
- Same foot print as M-series for easy expansion of fixture line-up
- Seamless design & re workable poke-in connector

Applications

Indoor Lighting:

- Replacement of T5/T8 tubes
- Office / Retail / Living space
- Troffer / Linear / Pendant

SAMSUNG

Table of Contents

1. Product Code Information

a) HB22D

Nominal CCT (K)		Product Code
3000	Front CNT	SI-B8V221B2HUS
3500		SI-B8U221B2HUS
4000		SI-B8T221B2HUS
5000		SI-B8R221B2HUS

b) H562D

Nominal CCT (K)		Product Code
3000	Front CNT	SI-B8V11156HUS
3500		SI-B8U11156HUS
4000		SI-B8T11156HUS
5000		SI-B8R11156HUS

c) H282D

Nominal CCT (K)		Product Code
3000	Front CNT	SI-B8V05128HUS
3500		SI-B8U05128HUS
4000		SI-B8T05128HUS
5000		SI-B8R05128HUS

2. Characteristics

Item	Rating	Unit	Remark
Rated Lifetime	>50,000	hour	L70B50
Ingress Protection (IP)	no rating	-	
Ambient / Operating Temperature (t_{amb})	-20 ~ +50	℃	
Storage Temperature	-30 ~ +80	℃	

a) HB22D

Item	Nom. CCT (K)	Rating				Remark
		Min	Typ.	Max	If(mA)	
Luminous Flux (Φ_v)	3000	3480	3870	4260	lm	I_f = 960 mA t_p = 50 ℃
	3500	3530	3925	4320		
	4000	3640	4040	4440		
	5000	3640	4040	4440		
Luminous Efficacy	3000	161	179	197	lm/W	
	3500	163	182	200		
	4000	169	187	206		
	5000	169	187	206		
CCT	3000		3000		K	
	3500		3500			
	4000		4000			
	5000		5000			
Color Consistency (initial)	3000		3		Mac Adam step	
	3500		3			
	4000		3			
	5000	-	3	-		
Color Rendering Index (Ra)		80	83	-	-	
Operating Current (I_f)		-	960		mA	
Operating Voltage (V_f)		20.8	22.5	24.2	Vdc	
Power Consumption		20.0	21.6	23.2	W	

Notes:

1) t_p: temperature at which performance is specified; measured at “Tc point”.

2) Samsung maintains a measurement tolerance of: Luminous flux: ±7 %, CRI: ±3.0, Voltage: ±0.3 V, Power Consumption: ±0.3W

3) Max 4 kV for ESD(Direct contact)

b) H562D

Item	Nom. CCT (K)	Rating				Remark
		Min	Typ.	Max	If(mA)	
Luminous Flux (Φ_v)	3000	1740	1935	2130	lm	
	3500	1770	1965	2160		
	4000	1820	2020	2220		
	5000	1820	2020	2220		
Luminous Efficacy	3000	161	179	197	lm/W	
	3500	164	182	200		
	4000	169	187	206		
	5000	169	187	206		
CCT	3000		3000		K	I_f = 480 mA t_p = 50 ℃
	3500		3500			
	4000		4000			
	5000		5000			
Color Consistency (initial)	3000		3		Mac Adam step	
	3500		3			
	4000		3			
	5000	-	3	-		
Color Rendering Index (Ra)		80	83	-	-	
Operating Current (I_f)		-	480		mA	
Operating Voltage (V_f)		20.8	22.5	24.2	Vdc	
Power Consumption		10.0	10.8	11.6	W	

Notes:

1) t_p: temperature at which performance is specified; measured at “Tc point”.

2) Samsung maintains a measurement tolerance of: Luminous flux: ±7 %, CRI: ±3.0, Voltage: ±0.3 V, Power Consumption: ±0.3W

3) Max 4 kV for ESD(Direct contact)

c) H282D

Item	Nom. CCT (K)	Rating				Remark
		Min	Typ.	Max	Unit	
Luminous Flux (Φ_v)	3000	870	970	1065	lm	I_f = 240 mA t_p = 50 ℃
	3500	880	980	1080		
	4000	910	1010	1110		
	5000	910	1010	1110		
Luminous Efficacy	3000	161	180	197	lm/W	
	3500	163	181	200		
	4000	169	187	206		
	5000	169	187	206		
CCT	3000		3000		K	
	3500		3500			
	4000		4000			
	5000		5000			
Color Consistency (initial)	3000		3		Mac Adam step	
	3500		3			
	4000		3			
	5000	-	3	-		
Color Rendering Index (Ra)		80	83	-	-	
Operating Current (I_f)		-	240		mA	
Operating Voltage (V_f)		20.8	22.5	24.2	Vdc	
Power Consumption		5.0	5.4	5.8	W	

Notes:

1) t_p: temperature at which performance is specified; measured at “Tc point”.

2) Samsung maintains a measurement tolerance of: Luminous flux: ±7 %, CRI: ±3.0, Voltage: ±0.3 V, Power Consumption: ±0.3W

3) Max 4 kV for ESD(Direct contact)

Item	Nominal*	Life**	Max***	Unit
Temperature	50 (t_p)	85($t_{p,\ 50}$)	90(t_c)	℃

Notes:

* Temperature used to specify performance of the module (t_p).

** Rated maximum performance temperature at which lifetime is specified ($t_{p,\ 50}$).

*** 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

HB22D

H562D

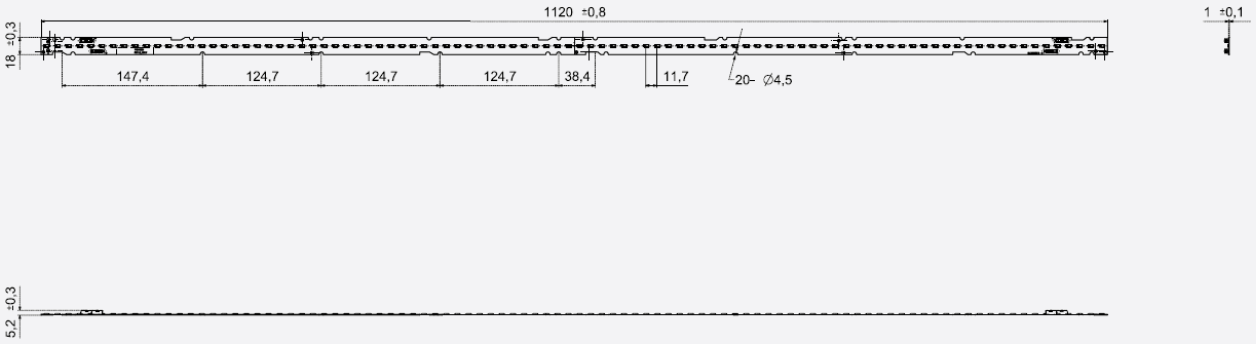
H282D

b) Dimension

HB22D

Dimension	Specification	Tolerance	Unit
Module Length	1120.0	±0.8	mm
Module Width	18.0	±0.3	mm
Module Height	5.2	±0.3	mm
PCB Thickness	1.0	±0.16	mm
Module Weight	45.0	±2.3	g

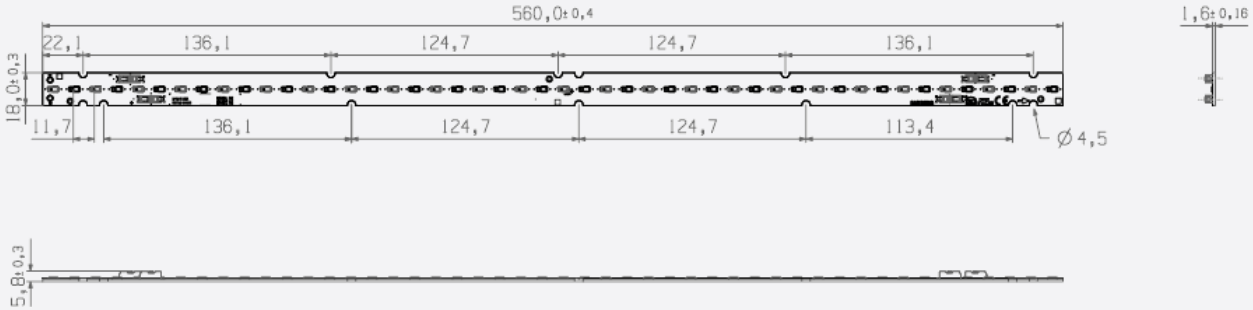
- Front Connector Module



H562D

Dimension	Specification	Tolerance	Unit
Module Length	560.0	±0.4	mm
Module Width	18.0	±0.3	mm
Module Height	5.8	±0.3	mm
PCB Thickness	1.6	±0.16	mm
Module Weight	28.5	±1.5	g

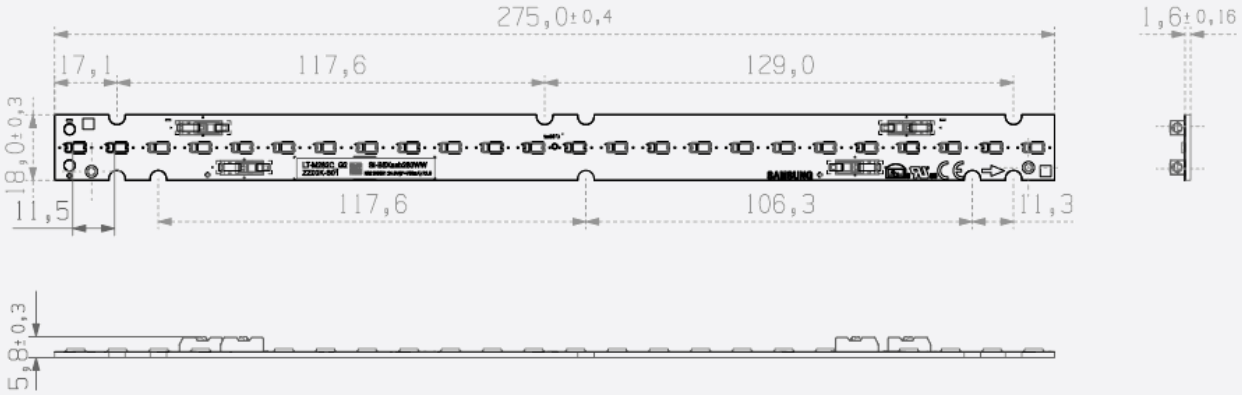
- Front Connector Module



H282D

Dimension	Specification	Tolerance	Unit
Module Length	275.0	±0.4	mm
Module Width	18.0	±0.3	mm
Module Height	5.8	±0.3	mm
PCB Thickness	1.6	±0.16	mm
Module Weight	14.0	±1.0	g

- Front Connector Module



c) Assembly

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

[Front connector]

d) Thermal Management

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

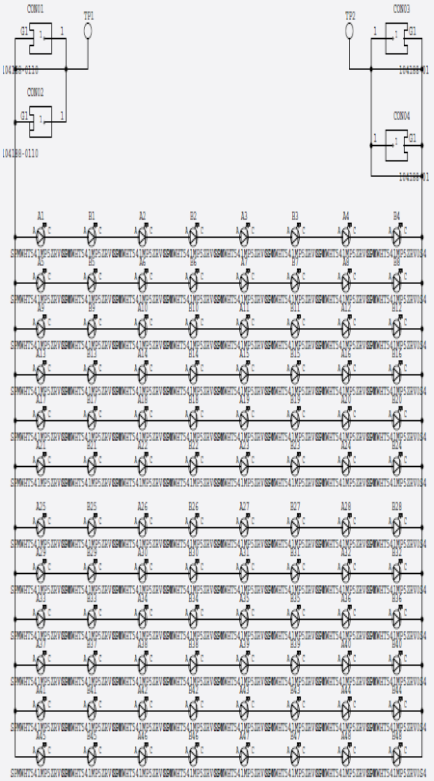
HB22D

H562D

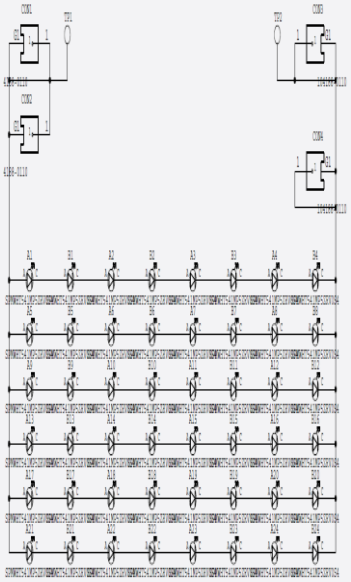
H282D

e) Schematic Circuit

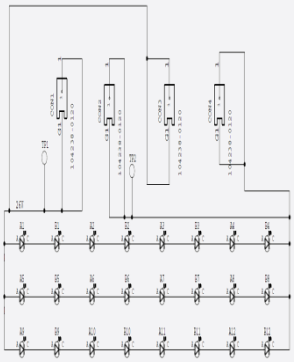
HB22D : 8s x 12p



H562D : 8s x 6p



H282D : 8s x 3p



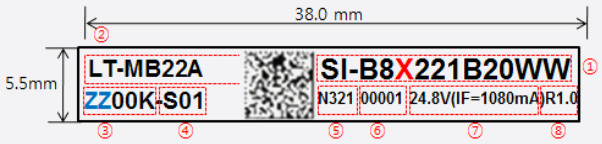
4. Certification and Declaration

Item	Compliant to	Remark
Test & Certification	CE	N/A
	ENEC	N/A
	VDE	N/A
	UL	T.B.D
	cUL	T.B.D
	Photo biological Safety(LM561C LED)	IEC / EN 62471
Declaration	RoHS	Hazardous Substance & Material
	REACH	Hazardous Substance & Material

5. Label Structure

a) Module Label

[Printing Label]



[Information of Barcode]

① Model code: SI-B8X221B2HUS
SI-B8X11156HUS
SI-B8X05128HUS

X : V(3000K), U(3500K), T(4000K), R(5000K)

② Product name: LT-HB22D
LT-H562D
LT-H282D

③ CRI & Color temperature: 8ZZ

ZZ: 30, 35, 40, 50

④ LED maker: -S (Samsung)

Group No.: 01 (Binning group)

⑤ SMT date: N321 (2013-March-21)

A (2000), B (2001) · · · · · · K (2010), L (2011), M (2012), N (2013) · · · · · · (year)

1 (January), · · · · · · 9(September), A (October), B (November), C (December) (month)

01, 02, 03, · · · · · · 31th (date)

⑥ Serial No.: 00001~99999; Setting "00001" every working day

⑦ Voltage (IF)

⑧ Product Revision: R1.0

[QR CODE Information]

① Example: SI-B8X221B2HUS_ N321100001ZZ00K-S01

② 34 digits: Model code (14) + Space (1) + SMT date (4) + SMT line No. (1) + Serial No. (5) + Color temperature (5) + Dash(1) + LED maker (1) + GROUP No. (2)

Model CODE	SI-B8X221B2HUS
QR CODE Information	SI-B8X221B2HUS_N321100001ZZ00K-S01

b) Tray & MBB Label

- 100mm x 50mm

① Model code: SI-B8X221B2HUS
SI-B8X11156HUS
SI-B8X05128HUS

② LOT: 20150101-D0001

Packing Date(8 digit) → 20150101
Production Site(1digit) → PyeongTaek SUHIL(E), TianJIn SUHIL(D), SLED(B)
Serial no(4 digit) → 0001~9999, A111~A999

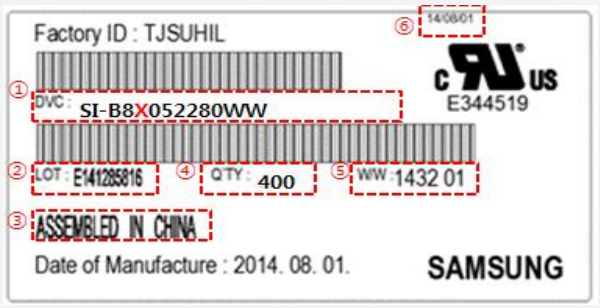
③ QTY: Quantity of Packaged Bar (5 Digit)

④ W/W: Production Year(2 digit) + Production Week(2 digit)

⑤ Issue date of Label: 12:year/01:month/30:day

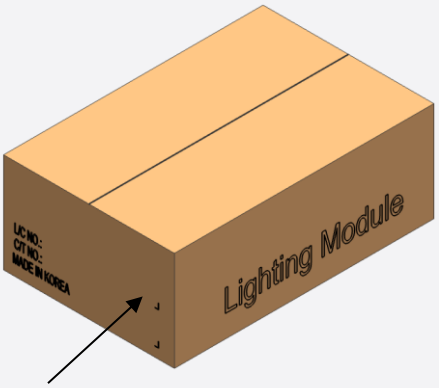
c) Box Label

- 100mm x 50mm



The lot number is composed of the following characters:

① Product code
② Lot ID
③ Place of origin
④ Quantity
⑤ Describe production week
⑥ Date of Issue



6. Packing Structure

ARTICLE	TRAY	BOX	PALLET	REMARK
Quantity	20 ea	200 ea	2400 ea	LT-HB22D
	40 ea	280 ea	5600 ea	LT-H562D
	40 ea	400 ea	12,800 ea	LT-H282D

7. Precautions in Handling & Use

A. The LED Lighting Modules for white light are devices which are materialized by combining white LEDs.
The color of white light can differ a little unusually to diffuser plate(sign-board panel).
Also when the LEDs are illuminating, operating current should be decided after considering
the ambient maximum temperature.

B. Handling
To prevent the LED Lighting Modules from making any defectives, please handle the LED Lighting
Modules with care as follows.
(1) Don't drop the unit and don't give the unit any shocks.
(2) Don't bend the PCB and don't touch the LED Resin.
(3) Don't storage the Module in a dusty place or room.
(4) Don't take the product apart.
(5) Don't touch the LED and also PCB and other circuit parts of Module with your naked fingers or sharpness things.
(6) Take care so that do not pull wire with hand in case of carries or moves LED Lighting Modules.

C. Cleaning
The LED Lighting Modules should not be used in any type of fluid such as water, oil, organic solvent, etc.
It is recommended that IPA (Isopropyl Alcohol) be used as a solvent for cleaning the LED Lighting Modules.
When using other solvents, it should be confirmed beforehand whether the solvents will dissolve the
package and the resin or not. Freon solvents should not be used to clean the LEDs because of
worldwide regulations. Do not clean the LED Lighting Modules by the ultrasonic.
Before cleaning, a pre-test should be done to confirm whether any damage to the LED Lighting
Modules will occur.

D. Static Electricity
Static electricity or surge voltage damages the LED Lighting Modules. Please keep the working
process anti-static electricity condition to prevent the Lighting from destroying, as following.
(1) Anyone who handles the unit should be well grounded.(earth ring or anti-static glove)
(2) Anyone who handles the unit should wear anti-electrostatic working clothes.
(3) All kinds of device and instruments, such as working table, measuring instruments and assembly jigs in your production lines should be well grounded.

E. Storage
The LED Lighting Modules must be stored to insert a package of a moisture absorbent
material(silica gel) in a box.

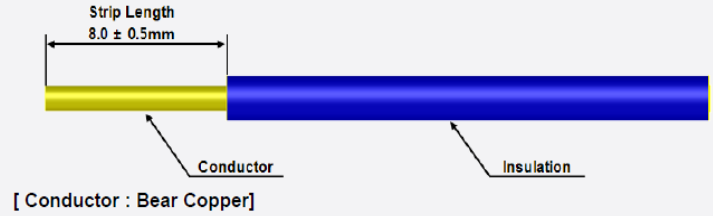
F. Others
If over voltage which exceeds the absolute maximum rating is applied to LED Lighting Modules.
It will cause damage Circuits(that LED is included) and result in destruction.
Do not directly look into lighted LED with naked eyes.
Please use this product within 5 months, which is kept in its original packaging unopened when
stocked

APPENDIX 1. APPLICABLE SOLID WIRES

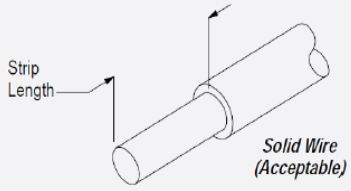
A. Applicable solid wires

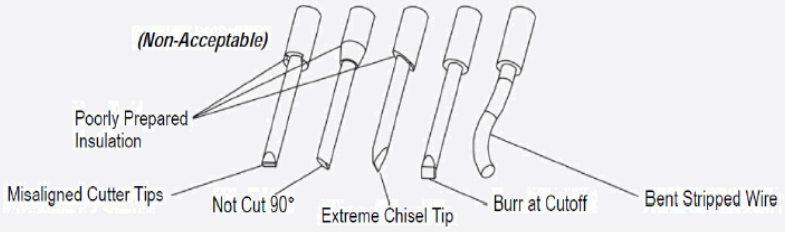
Wire Range AWG NO.	Number of Conductors / Diameter of a conductors (NO. / mm)	Insulation Diameter (mm)	Conductor Type
24	1 / 0.51	1.35	Solid
22	1 / 0.64	1.48	
20	1 / 0.81	1.65	
18	1 / 1.02	1.86	

B. Wire strip length



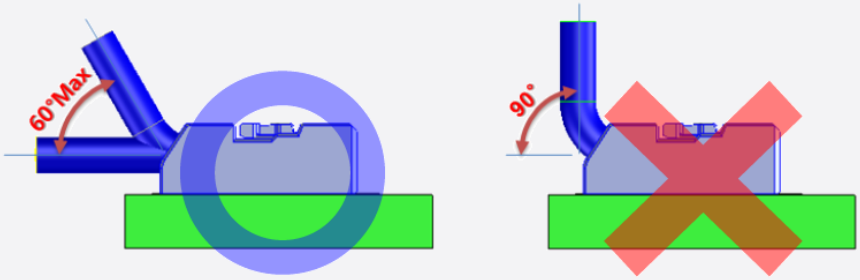
[Conductor : Bear Copper]





C. Caution : Pullout condition for Wire angle

When pull out after inserting the wire, do not recommend pull out from more than 60 degree.



Legal and additional information.

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