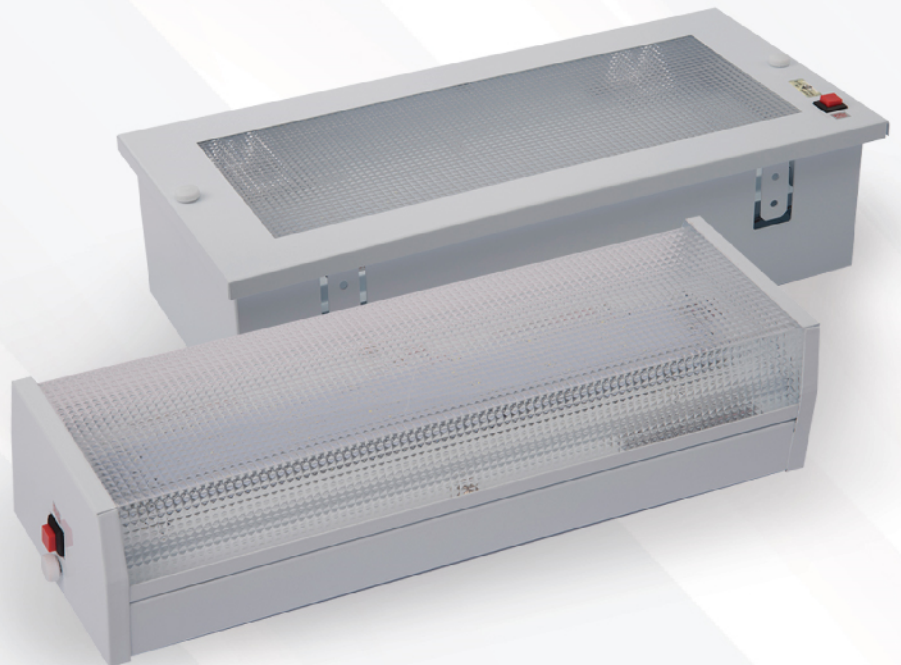


SHINZ[®]

Innovating Future

DELIVERING USER
FRIENDLY EL-T FOR
COMMERCIAL &
INDUSTRIAL BUILDINGS

SE-20ST / 20RST



Reference Standard
MS 619-2-22:2005
(IEC 60598-2-22:1997 and
Amd. 1:2022, MOD)

TECHNICAL CHARACTERISTIC

Mode of Operation	: Non-Maintained
Input Voltage	: AC240V~
Input Wattage	: 1.4W
Input Current	: 0.009A
Frequency	: 50Hz
Lamp Type	: 20 x 0.1W SUPER BRIGHT LED
Lamp Output	: SE-20ST (109 LUMENS), SE-20RST(74 LUMENS)
Power Factor	: 0.7
Charger	: Solid State Electronic Automatic
Charger Monitor	: Permanent Red Led On
Test Monitor	: Red LED Flashing (Refer Fig.A)
Fault Monitor	: Green LED Flashing (Refer Fig.A)
Test Facility - Manual	: Push-To-Test Switch
Test Facility - Automatic	: Automatic Testing
Battery Type	: 3.2VDC 1500mAh High Temperature Sealed Lithium Iron Phosphate (LiFePO4)
Back Up Duration	: 3 Hours
Operating Temperature	: ta 35°C
Weight	: 0.25kg (Surfaced) , 0.30Kg (Recessed)
Mounting	: Surfaced / Recessed
Degree of Protection	: IP 20
Fitting Construction	: Electro Galvanised Steel Sheet with Epoxy Powder Coating
Warranty	: 2-5 Years (Terms and Conditions apply)
Dimensions	: Refer to Fig.B
Installation Guide	: To be provided in individual packing
Operation Manual	: QR code provided at Installation guide
Reference Standard	: MS619-2-22:2015 (IEC 60598-2-22:19997 and AMD.1:2022, MOD)



Figure A

STATUS INDICATIONS

LED Indication	LED Figure	Status
Permanent On		Charging or Standby - AC mode
Red LED Flashing @1Hz		Monthly Functional Test activated and take around 30sec. to complete
Red LED Flashing @3Hz		Yearly Duration Test activated and take around ~90 minutes. to complete
Green LED Flashing @1Hz		Battery and Charging Circuit Fault.
Green LED Flashing @3Hz		Light Source or Monthly test fail

Note :

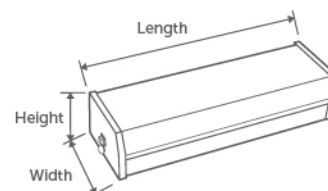
The Yearly Duration Test is a partial discharge test to determine the condition of the battery and therefore the test duration is set at ~90 minutes. If the duration test fails a proper test and inspection shall be conducted by the maintenance personnel.

Figure B

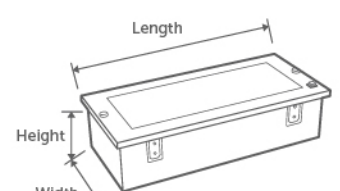
PRODUCT DIMENSIONS

DESCRIPTIONS	LENGTH	HEIGHT	WIDTH
SURFACED	357 MM	80 MM	116 MM
RECESSED	381/395 MM	88 MM	163/186 MM

SURFACED



RECESSED



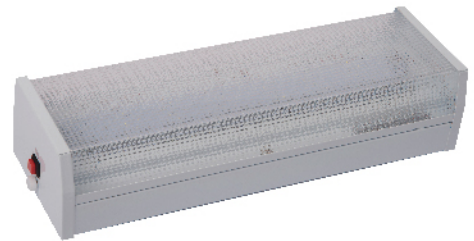
SE-20ST / 20RST

DELIVERING USER FRIENDLY EL-T FOR COMMERCIAL & INDUSTRIAL BUILDINGS



The SE-20 Series Fittings are constructed using Epoxy Powder coated galvanized steel sheets. It is suitable for any retrofit or new installations.

In year 2018, SHINZ have upgraded the SE-20 series with SE-20ST/ SE-20RST emergency luminaires with automatic testing (EL-T) and switched the batteries from NiCad to Lithium Iron Phosphates (LiFePO₄). It was tested and approved by Malaysia SIRIM. We have also obtained Jabatan Bomba dan Penyelamat Malaysia Licence. Until today we have successfully sold more than 20,000 units throughout Malaysia.



SE-20ST SURFACED MOUNT
0.9 Kg/Unit | 10 Units/Carton



SE-20RST RECESSED MOUNT
1.6 Kg/Unit | 6 Units/Carton



EL is short for "Emergency Lighting", the extra "T" in EL-T stands for "Automatic Testing". This means, EL defines the basic requirements that are relevant for all emergency lighting control gear, EL-T includes all of these basic requirements plus some additional ones that are relevant for automatic testing.

EL and EL-T are self-compliance marks. They confirm that emergency lighting control gear comply with all the relevant standards. Like the CE mark, EL and EL-T work as self-compliance mark. This means that the manufacturer is responsible for putting on the mark. The marks can be used without further investigation through an external certification body.

How does self-test emergency lighting work and why is it increasingly important for end-users?

Self-test emergency products can reduce the burden of testing emergency lighting installations as these perform all mandatory testing automatically, removing the need for the user or building owner to perform manual testing. The luminaire performs its own functionality test and an LED indicator on the device draws attention to any issues.

Monthly functional tests and annual full duration tests are automatically initiated with results shown via an LED indicator on the indicating light. The responsible person need only check the status of the LED indicator and record the results in the log book. This still requires manual checks / physical walk-arounds and it also requires manual and reactive rectification work.

Testing Requirements				
	Check Charge Function	Check Lamp Operation	Check Battery Capacity	Check Duration

Not only is this a far less time-consuming and lower-cost operation than with manual testing, it also ensures that maintenance personnel are only required to attend to lights with reported faults. Where a fault is identified the LED indicator will report (Blink) what is at fault and continue to report (Blink) this until the fault has been rectified.

Saving Time & Money	Testing Causes No Disruption
More Effective and Reliable than Manual Testing	Easy to Install

SPECIFICATIONS FOR EMERGENCY LIGHTING

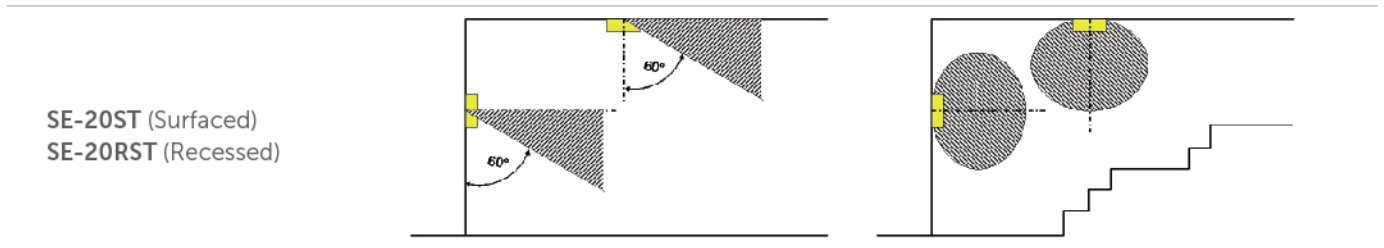
- Self-Contained Emergency Light with Automatic Testing (EL-T) system, non-maintained mode of operation that comes with high temperature sealed Lithium Iron Phosphate (LiFePO₄) batteries to back up 3 hours (180Minutes) constantly when power failure. The EL-T system shall provide **functional** test on LED source, inner charger & switch over control monthly and **duration** test on battery capacity yearly. An indicator shall be alert (blink) draws to any fault issues on lighting circuit, battery capacity and charging circuit.
- The Emergency Luminaires shall be tested and comply to MS 619-2-22:2005 & IEC 60598-2-22:1997 and Amd. 1:2022, MOD
- The LiFePO₄ Batteries shall comply to both safety standard of IEC 62133:2012 and performance standard IEC 62620:2014.
- The emergency luminaire fitting is constructed using Epoxy Powder coated galvanized steel sheets with IP20.
- Suitable for indoor applications such as anti-panic areas, emergency escape route and high-risk task areas.

DATA SHEET EMERGENCY LIGHTING

	SE-20ST (Surfaced)	SE-20RST (Recessed)
Luminous Flux	: 113 lm	: 93 lm
Correction Factor	: 1.000	: 1.000
Emergency Lighting Factor	: 1.00	: 1.00
Emergency Lighting Luminous Flux	: 113 lumens	: 93 lumens
Light Output Ratio	: 100.04	: 99.97
Light Output Ratio (Lower Hemisphere)	: 96.44	: 99.20
Light Output Ratio (Upper Hemisphere)	: 3.56	: 0.80

GLARE VALUATION (Maximum Luminous Intensity [cd])

	SE-20ST (Surfaced)			SE-20RST (Recessed)		
	C0	C90	C0 - C360	C0	C90	C0 - C360
Gamma 60° - 90°	18.7	15.0	18.7	7.8	12.8	13.2
Gamma 0° - 180°	38.7	38.5	39.4	39.6	40.5	40.7






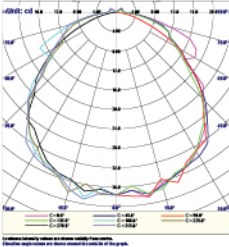
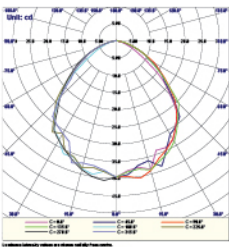


DISTANCE TABLE FOR EVEN ESCAPE ROUTES

The spacing tables show the distance from the wall or door to the first luminaire and then the distance that must not be exceeded for spacing between subsequent luminaires.

This is shown for the luminaires being mounted either parallel to the route (Axial) or at right angles to the route (Transverse) for different mounting heights.

In addition to values for escape routes, figures are also given for the coverage of open areas by regular arrays of luminaires.

Model	Photometric	Mounting Height [m]					
SE-20ST (Surfaced)		2.00	2.45	6.07	6.11	6.07	2.42
		3.00	2.57	7.02	6.96	6.91	2.51
		4.00	2.22	7.22	7.19	7.14	2.19
		5.00	1.11	6.88	6.74	6.82	1.06
		6.00	0.00	5.04	5.08	5.08	0.00
		7.00	0.00	2.25	2.20	2.20	0.00
		8.00	0.00	0.00	0.00	0.00	0.00
		9.00	0.00	0.00	0.00	0.00	0.00
		10.00	0.00	0.00	0.00	0.00	0.00
SE-20RST (Recessed)		2.00	2.25	5.46	5.59	5.81	2.33
		3.00	2.50	6.56	6.56	6.67	2.48
		4.00	2.21	7.03	6.98	6.99	2.20
		5.00	1.29	6.83	6.85	6.84	1.36
		6.00	0.00	5.39	5.32	5.32	0.00
		7.00	0.00	2.81	2.47	2.83	0.00
		8.00	0.00	0.00	0.00	0.00	0.00
		9.00	0.00	0.00	0.00	0.00	0.00
		10.00	0.00	0.00	0.00	0.00	0.00

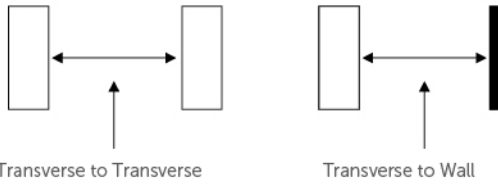
The spacing table is based on the following parameters:

- Light loss factor: 0.72
- Emergency lighting factor: 1.00
- Minimum illuminance on center line: 1.00 lx

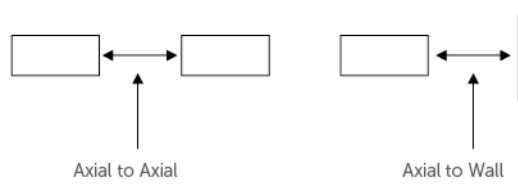
- Minimum illuminance on half of escape route width: 0.50 lx
- Diversity on the center line max. 40 : 1
- Width of escape route: 2.00 m

APPLICATIONS

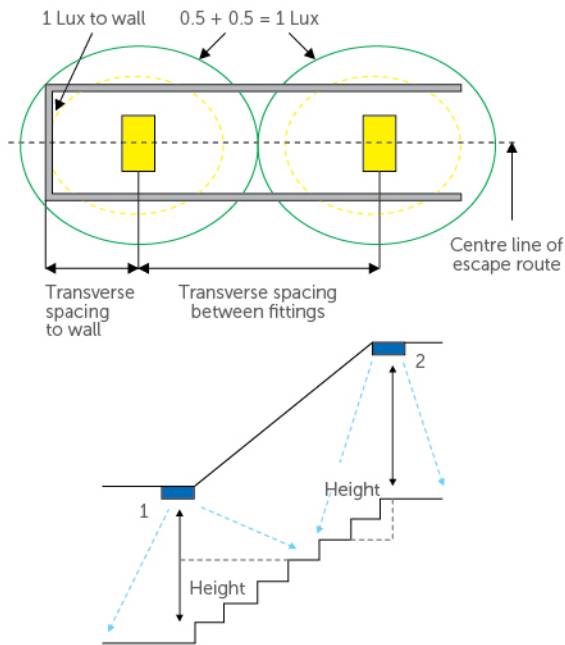
Transverse Mounting Positions



Axial Mounting Positions



Escape Routes

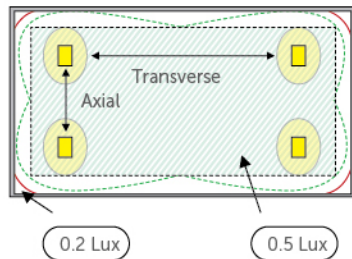


When designing the lighting for an emergency escape route it is advised that achieving even distribution of illuminance throughout the escape route with 1 lux as a minimum level on the centre of line.

When placing luminaires near stairs or any other change of level, the luminaires must be located so each tread receives direct light. Generally at least two luminaires will be needed to provide the 1 lux minimum level on the centre of each tread.

The diagram left shown the spacing from luminaire 1 to luminaire 2 is reduced as their mounting height is being reduced as the point's illuminated rise up the stairs.

Open Areas



The diagram shows the area that needs to be covered for open area lighting. The main area is illuminated to a level of 0.5 lux. This excludes the area 0.5m away from the walls indicated by the dotted line.

POINT OF EMPHASIS

Point of Emphasis is known for locating luminaires correctly to reveal specific hazards and highlight safety equipment and signs. Whether it is for an emergency escape route, open area (anti-panic) or hazardous area (high-risk task area)

It is necessary to identify and needed to be highlighted to ensure people do not trip or fall during evacuation.

At every exit door planned to be used in an emergency.	Near the stairs so that each step receives direct light.	Near every first-aid zone.	Near every change in floor level.	High-risk forms moving machinery or chemical workshops & substances in the laboratory
At every corridor intersection.	Near every fire safety device and call point.	Near the safety equipment	At the escalator	

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