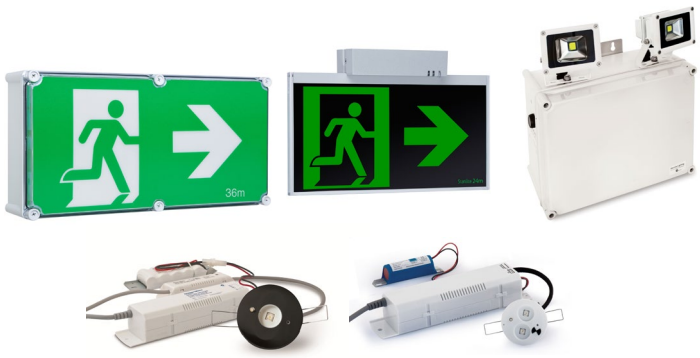
Consultant Specification

Nexus® LX Specification
Emergency and exit
lighting monitored system

Version : 1.0



Technical Specification – Nexus® LX

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1 General

Provide a Stanilite® Nexus LX monitoring system for the exit and emergency lighting throughout the scope.

1.1 Scope

Provide emergency and exit lighting systems comprising:

- Self-contained single point battery reserve emergency lightings with Nexus LX capability
- Self-contained single battery reserve exit lights with Nexus LX capability
- Luminaire wiring and controls
- All exit and emergency lights to be classified by an approved authority in accordance with ASNZS 2293.1 with the classification being clearly identified on the luminaire
- Installation of the system in accordance with the manufacturers installation and commissioning guidelines

1.2 Standards

Reference documents

Comply with the following standards:

- AS/NZS 2293 - emergency evacuation lighting in buildings
- AS/ACIF S009 - installation requirements for customer cabling (wiring rules)
- AS 3000 - exit and emergency lighting complying with all relevant clauses in the luminaires section of this specification

1.3 Regulatory Requirements

Requirement

Comply with requirements of:

- Building Code of Australia
- National Construction Code of Australia
- Applicable Local Government Authority

2 Product Specification

2.1 Nexus LX System Structure

Network communications shall be via a multi-drop bus technology using a single twisted pair shielded Nexus LX NXS-1PS cable connected in an open ended daisy chain manner.

The network shall be divided into segments (channels) containing not more than 50 emergency and exit luminaires per copper router.

Each channel shall not be more than 1000m in data cable length.

Each channel shall be terminated with an end-of-line resistor and the location of the end-of-line resistor shall be within the last device nearest to the end of the channel.

Each channel shall be segmented from the system backbone (trunk) using a Nexus LX router device.

The channel data cable must not have any tee-offs or star formations. It shall be one continuous segment that does not require loping back to its other end.

The channel data cable shall connect to each emergency luminaire and the router in a daisy chain manner.

The backbone (trunk) shall connect all the routers in a daisy chain manner back to the Nexus LX server.

2.2 System Software

The management software application shall:

- Display graphical representations of the system server, controllers and luminaires
- Provide reporting facilities capable of sorting by date, group, device
- Produce reports including test reports, work instructions, status reports that can be sorted by fitting, group, test type, date range
- Be able to decommission, recommission defective luminaires

2.3 Nexus LX Server Requirement

The Nexus LX server shall have:

- Intel i5 processor
- Windows 10 64 bit Pro
- LCD 19” monitor
- 250GB HDD
- 8GB RAM
- Integrated video card
- Mouse and pad
- 104 keyboard
- 2 spare USB ports

- USB LONWORKS interface module TP FT 10 for Nexus LX

2.4 Nexus LX Emergency and Exit Luminaires

Provide luminaires supplied and installed to comply with AS/NZS 2293 and AS/NZS 3000 with the following:

- Emergency lighting C0 and C90 classification
- EMC test results
- Heat rise test results

Each Nexus LX luminaire shall contain a microcontroller responsible for data communications and for the control and monitoring of the emergency functions of the luminaire.

The microcontroller in each emergency or exit luminaire shall monitor the following:

- Emergency test button
- Switched active mains supply
- Emergency lamp current
- Emergency lamp light output
- Mains lamp light output
- Emergency inverter or power supply
- Battery charging

Each luminaire shall have a unique identifier – neuron ID – which shall be clearly labelled on the outside of the luminaire.

The microcontroller in each emergency luminaire shall be able to disconnect the emergency unit from the mains supply to test the emergency operation of the unit in the event of power failure. It shall record the battery discharge time achieved during this test.

Batteries

Removable Stanilite Lithium iron LiFePO4 single cell batteries to be used.

Batteries shall be suitably located away from heat sources such as transformers, ballasts and lamps in order to achieve optimum battery life. Batteries shall be securely fastened using purpose made clamps, incorporated into the battery pack or luminaire body. Battery connection shall be by quick connect tabs and receptacle connectors.

- Initial emergency period: 2 hours
- In service emergency period: 1.5 hours

2.5 Nexus LX Programming and Commissioning

Full commissioning of the Stanilite Nexus LX system shall be performed by the manufacturer. The contractor must engage the manufacturer directly to perform initial commissioning and testing of the system, ensure the system is fully updated with the correct device data, configured and operational.

This will form part of the acceptance of the emergency lighting system for the issuing of project practical completion.

The manufacturer shall also be engaged to perform the 6 and 12 monthly tests and produce a work instruction for the contractor to complete any remediation work during this period.

Hard copies of all test reports to be supplied and filed.

Stanilite will provide a detailed excel spreadsheet for the contractor to complete with the following information to assist in the commissioning of the system:

- Neuron ID
- Channel sequence number
- Part number
- Unit type
- Location including building, area, position
- Drawing number and grid reference
- Floor level
- Circuit and distribution board

Provide Stanilite with the completed commissioning spreadsheet in electronic excel format.

Channel sequence numbers are to be clearly marked on all luminaires in accordance with ASNZS 2293.

Detailed as-built drawings must also be provided at the commissioning stage with the following information:

• Location of the Nexus LX routers and area controller and emergency/exit luminaires with SPU_ID's

• Data cable installation routes detailing the trunk formation and channel/segment paths to luminaires including end-of-line resistor locations