

Stanilite
nexus[®]RF

ARE YOU PREPARED FOR AN EMERGENCY?

EXIT AND EMERGENCY LIGHTING

ACCESS POINT ID:	10000-00-000	☐
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MATRIX CHECK



Thomas & Betts

ARE YOU PREPARED FOR AN EMERGENCY?

In the interest of public safety, the Australian Standard AS/NZS 2293.2 outlines the obligations of building owners in relation to Exit signs and Emergency Lighting, to ensure the safe evacuation of occupants in an emergency. It is the responsibility of a building owner to:

- *Check all emergency lighting units, and conduct a discharge test every 6 months*
- *Clean light emitting and reflecting surfaces of all fittings every 12 months*
- *Keep a log book of maintenance information*

Complying with these requirements can be very expensive and labour intensive, especially in larger buildings where testing requires many labour hours spent manually inspecting every emergency light. In addition, the disruption of the power supply during inspection can put public safety at risk.

Emergency Exit Check
100%

Batten Lighting Check
100%

Flood Light check
100%

Spitfire Check
85%
Replace Spitfire 1-24
AHD394B F6N DKX//



WHAT IS NEXUS®?

Nexus®, is a realtime emergency lighting monitoring system which offers building owners control over their public safety obligations, helps manage installation and directs the maintenance of an emergency lighting system. A Nexus® network enables the user to:

- *Manage the installation and removal of components*
- *Cost effectively test and monitor the system*
- *Assign fittings to groups. Fittings are collected in groups so that they can be tested together in a logical manner e.g. groups could represent different floors or departments.*
- *Manage maintenance activities. Any fitting that fails a test or exhibits a fault will be automatically added to the Maintenance Group ensuring easy identification of the fittings requiring maintenance. The fittings are automatically removed from the Maintenance Group once they have been repaired and re-tested.*
- *Ensure tests are performed properly*
- *Prepare reports. Testing and maintenance functions can be documented using the Nexus® reporting functions. You can record all maintenance operations to satisfy requirements of AS/NZS 2293.2, and plan future maintenance budgets through the use of an online log book.*
- *Log test results and print them as required.*

Nexus® has been designed to enable maintenance personnel to easily maintain the emergency lighting system without having to walk through the building or disrupt the power supply. Nexus® can test and report on the status of emergency lights either individually, in groups or all together.

WHAT IS NEXUS® RF?

Until now, the Nexus® system has relied upon a dedicated data cable as the channel for network communication. Nexus® RF takes the time proven Nexus® system and replaces the data cable with a radio frequency (RF) method of communication. The result is a system with numerous advantages including further cost reductions in the establishment and maintenance of an emergency lighting monitoring system.



WHY CHOOSE NEXUS® RF?

There are many reasons for selecting Nexus® RF as your Emergency Lighting Monitoring System.

ENDLESS APPLICATIONS

Freed from the need for a dedicated cable network and PC, the Nexus® RF system has the potential to be used in a variety of applications that previous systems found difficult or were cost prohibitive. These include -

- *Upgrading existing buildings – without the need to run cables throughout the building, the upgrade of existing sites is child's play.*
- *Small Sites – the elimination of the PC as the head end coupled with the elimination of the data cable means that the cost to set up a small site is significantly reduced. This means that there are long term financial benefits even to sites under 100 fittings.*
- *Multiple buildings – the flexibility in backbone selection with the Nexus® RF system means that running multiple buildings on one site through an integrated system is no hassle.*

COST SAVINGS

Nexus® RF will deliver the long term cost benefits of a monitored system along with the added advantage of reduced installation costs.

» SLASH INSTALLATION COSTS

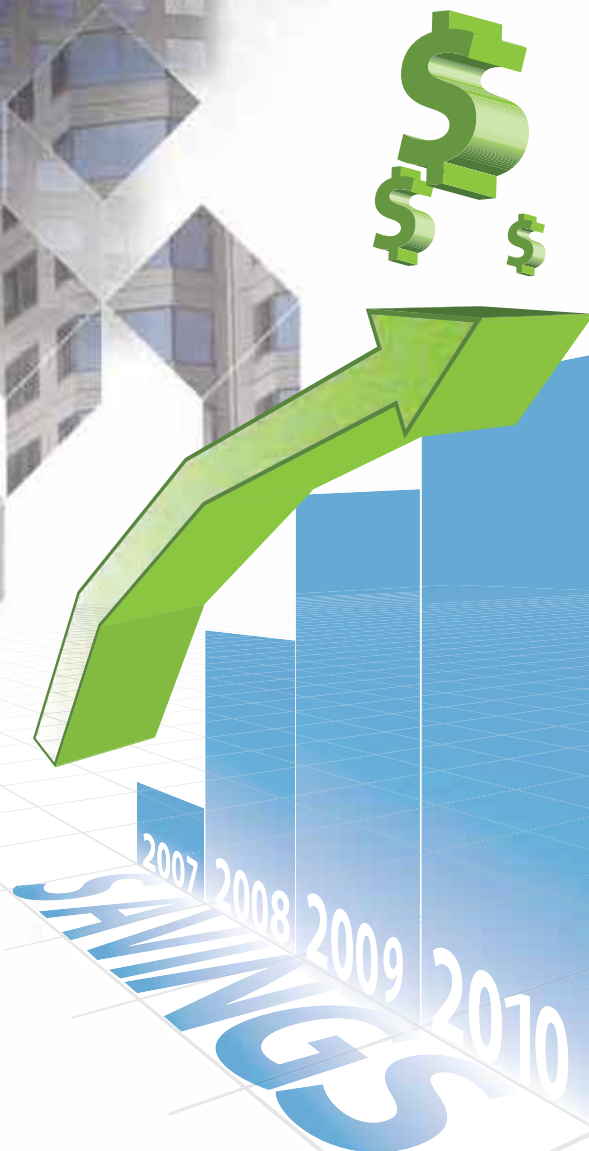
From the contractors point of view a Nexus® RF system installs in the same way as a non-monitored single point system. Once the fittings are connected to the appropriate power circuit there is nothing else to do -

- *Cost of data cable between nodes is totally eliminated**
- *Cost of data cable installation is eliminated*
- *Cost of checking and correcting data cable faults between fittings is eliminated*

» ONGOING LABOUR SAVINGS

To ensure compliance with AS/NZS 2293.2, testing of a building requires many hours of labour for qualified staff to manually inspect and test every emergency light fitting and record the results in a log book. Manual testing is therefore very difficult and expensive to do on a large scale.

Nexus® RF enables the user to remotely activate light fittings and retrieve status information. The fittings will automatically send their status to the server in real-time ensuring the server always has an accurate record of the fitting's status. This information is then automatically stored in an electronic log book. Maintenance personnel need only attend to fittings that require maintenance.



WHY CHOOSE NEXUS® RF?

RELIABILITY

Emergency Lighting is an essential building safety system. You cannot afford for this system to fall into disrepair and hence you need to be able to rely upon your monitoring system to accurately advise of required maintenance. Stanilite has built its reputation upon quality product and the Nexus® RF system is the result of more than 2 years research into the best communications platform to ensure a highly reliable diagnostic tool.

Here are just some of the reasons that you can rely upon Nexus® RF.

900 MHz MESH NETWORKING SYSTEM

The Nexus® RF system utilises **mesh networking technology** which allows for neighbouring nodes to pass messages along the network and hence extend the range of the system. In addition the mesh network ensures multiple potential communication paths so that data always has a way back to the controller. The mesh network connections are formed automatically and change dynamically to suit the RF environment.

Automatic Route Optimisation ensures the shortest path is used each time.

The Nexus® RF mesh network operates in the 915-928 MHz ISM band, providing superior penetration through building materials and ensuring network integrity.

» OPTIMUM CHANNEL SELECTION

In addition to the benefits provided by the 900MHz band, the Nexus® RF system also features **Optimum Channel Selection** technology utilising the full spectrum of the band to ensure trouble free operation.



» FOOLPROOF INSTALLATION

The Nexus[®] RF system is as **simple to install** as a non-monitored single point system. The performance of the system is in no way compromised by poor cable installation between nodes. As long as the power is correctly connected to the unit, the system will be functional.

» SELF MONITORING

Like the Nexus[®] models before it, the Nexus[®] RF system is self monitoring and can **diagnose any network problems**. In fact, since there are multiple communications paths for each node, the system can potentially rectify itself.

» INDEPENDENT SYSTEM

The operation of emergency lighting is **not impeded by nor dependant upon Nexus[®] RF** which is simply used to test and monitor fittings. A Nexus[®] RF light fitting can be removed from or added anywhere within the Nexus[®] RF network without interruption to the operation of the system.

Each of the fittings store their own previous test results, maintenance history, location, unit type and other information. If anything should happen to the area controller, the network will automatically rebuild with all the fitting history.

» STANILITE[®] REPUTATION

Stanilite is a well known and trusted brand within the emergency lighting market and has a **proven track record** with the Nexus[®] data cabled system. The Nexus[®] RF system exhibits the same attention to detail and focus on building safety that has made Stanilite Australia's number one choice for emergency lighting systems.

WHY CHOOSE NEXUS® RF?

SIMPLICITY

One of the guiding principles in designing the Nexus® RF system was to make it as simple as possible for both the installer and end user.

» SIMPLE AUSTRALIAN STANDARDS COMPLIANCE

Then Nexus® RF system makes compliance with AS2293.2 and therefore various state and local regulations very easy. The system is able to run the required 6 monthly discharge tests, create maintenance logs and run compliance reports to assist in making sure that a crucial building safety system is operational. The system provides reliable data that is not compromised by human error and makes it quick and easy to access.





» SPU STYLE INSTALLATION

With no data cables to worry about, the Nexus® RF enabled units simply need to be connected to the mains power as per a normal non-monitored installation. On some fittings there will be the need to attach an external antenna to the ceiling but that is a simple "position and fix" operation as the antenna is already connected to the unit. The contractor does not have to be concerned with network communications at all.

» HASSLE FREE SYSTEM COMMISSIONING

As part of a Nexus® RF system package, Thomas & Betts will take care of the commissioning process once the contractor has provided a database of fitting locations. In addition, Thomas & Betts will take care of the defects liability period since anything that should occur within the RF network can only be remedied by Nexus® RF system specialists. Responsibility for the system for the first twelve months will also encompass conducting the 6 monthly discharge tests free of charge.

» EASY SYSTEM CONTROLS

The Nexus® RF system features a Graphical User Interface (GUI) that is accessible on the Wireless Area Controller, through direct PC connection or through a remote PC connection. This interface makes it very easy for the user to understand the status of the system, run system diagnostics, produce reports and much more.

» THROUGH LIFE SUPPORT

Thomas & Betts provides a unique, nation wide Through-Life Product Support Service to assist users at every stage of the system's life. Nexus® specialists are available to offer assistance over the phone or in the field if required, throughout the life of the system.



WHY CHOOSE NEXUS® RF?

FLEXIBILITY

All buildings and building owners are inherently different. Nexus® RF wireless technology copes with building variations and the Area Controller even allows the user to choose the most suitable backbone. The system also provides for multiple communication options to enable remote system interrogation.

» WIRELESS TECHNOLOGY

Buildings with difficult layouts, sites with multiple buildings, heritage sites, all of these once troublesome projects are now made child's play using wireless mesh networking. The Nexus® RF 900MHz mesh network has been proven to penetrate difficult substrates such as masonry walls making the whole system suitable for a wide variety of applications.

Emergency Exit Check
100%

Batten Lighting Check
100%

Spitfire check
100%





» USER CHOICE

The advanced Wireless Area Controller has been designed to give the user ultimate choice. The system can use an existing communications backbone or choose the one that best suits. Communication between the Routers and the Area Controller will be possible via Ethernet LAN, WLAN or GPRS.

Even how you use the Nexus® RF software tools is a matter of user choice. The Nexus® RF system can be accessed through the Area Controller unit itself or it can be operated via remote control through an IP connection or dial-up modem. The Nexus® RF Wireless Area Controller acts as a web server and hence the remote computer does not need any special software other than a web browser.

» MULTI-NETWORK POTENTIAL

The Nexus® RF Area Controller has been designed with flexibility in mind. Through a series of plug-in modules it can be configured to cope with systems that use multiple backbones for example part of the system could run on the wireless mesh network and part on a data cabled network. This provides the system designer and users with the ability to configure the best system for any given site.



WHAT DOES A NEXUS® RF SYSTEM LOOK LIKE?

Before we look at sample system designs we need to review the components of a Nexus® RF system -

» EMERGENCY LIGHT FITTINGS

Most Stanilite Exit Signs and Emergency Luminaries will be available in Nexus® RF capable models. This will include the market leading Quickfit range of exit signs and Spitfire series of emergency luminaries. For details see page 16.

» NEXUS® RF AREA CONTROLLER (AC)

The Area Controller is the system head end controller. The system does not require a PC to run the Nexus® utilities as has been the case in the past and still is with competing products. The Area Controller stores the master database, operates as a user interface, co-ordinates nodes both through the Routers and in it's own cluster.

The Area Controller is primarily designed for Ethernet connection however through a series of interface modules it can be configured to suit a variety of communication methods.

» NEXUS® RF AREA CONTROLLER ROUTER (ACR)

The ACR is used to enhance system performance on large sites. Each ACR can co-ordinate a cluster of up to 90 nodes. The ACR maintains the database and monitors each cluster independent to the AC. Should the AC go off line, the ACR would continue to operate as normal and feedback information once the AC was available again.

» REPEATER (WHERE REQUIRED)

A repeater is used to boost the RF signal in difficult areas of the network. Most sites will not require the use of a repeater.

» INTERFACE MODULES

Interface modules are used to configure the AC and enable it to communicate on networks other than Ethernet and the Wireless Mesh Network .

» HIGHLIGHTS

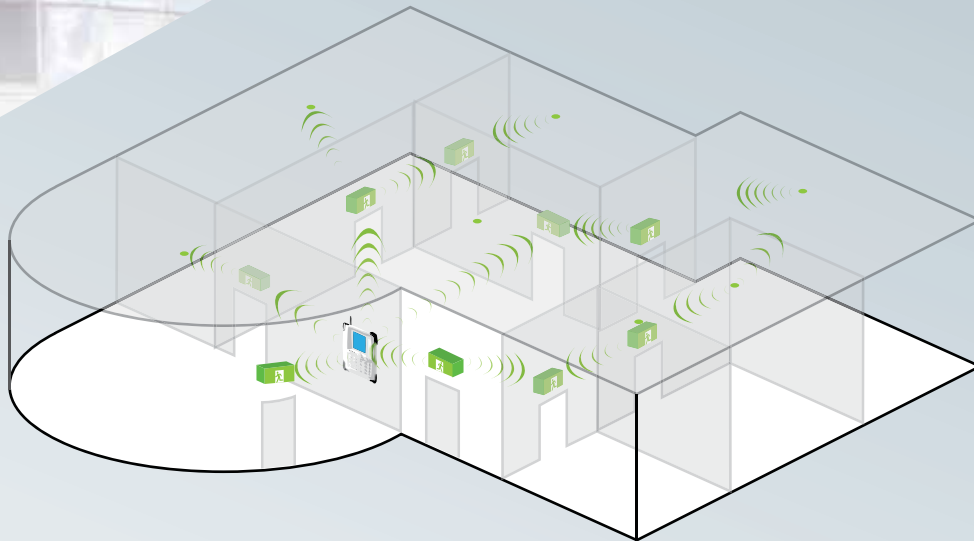
- External interface ports
- Touch screen for easy control
- USB A and USB B ports for connection to peripherals such as a keyboard, mouse, modem PC etc.
- Ethernet connection
- Wall Mountable
- Battery backed
- SD slot for removable memory
- CF slot for memory and/or peripheral devices





» SMALL SYSTEM EXAMPLE

In a system of less than 100 nodes it is most likely that the only hardware required, other than the lighting units themselves, is an Area Controller. All communication would occur wirelessly and installation would not vary greatly from a non-monitored system. Once the units are in place, the system will self discover and establish the mesh network. The building itself could be quite large as each node only needs to be able to communicate with its close neighbours and does not need to communicate directly with the Area Controller.



» FAQ's

1. How far can the Nexus® RF signal travel?

Using mesh networking technology, the signal only needs to travel as far as the next node and hence open air distance is not usually an issue. The actual distance a signal is able to travel is impacted by a range of factors including building materials, reflective surfaces etc.

2. How far apart can nodes be located?

This is determined by AS2293.1:2005 and the spacing tables therein according to the classification of a fitting. The Nexus® RF system has been built to enable compliance with the standard.

3. What if Nexus® RF cannot penetrate a room?

The use of 900MHz band at the correct signal strength ensures that most substrates can be penetrated. In the odd occasion where a room cannot be penetrated using a standard node layout then the Thomas & Betts technicians will have various options available including repeaters, additional nodes or coax cable connection.

4. Will the RF signal interfere with alarms, data or sensitive equipment such as in hospitals?

No. The system has been tested & classified to AS4268:2003 to ensure it does not cause harmful interference to other devices.

5. How many nodes can the system handle?

The maximum number of nodes in a system is limitless however to ensure adequate system performance they need to be organised into clusters. Each cluster is co-ordinated by an Area Controller Router or Area Controller either of which can handle up to 100 nodes.

» LARGE SYSTEM EXAMPLE

The Nexus® RF system has been designed to be extremely flexible and provides for a range of system options. Each large site will need to be assessed for the best system solution with the assistance of Thomas and Betts technical staff.

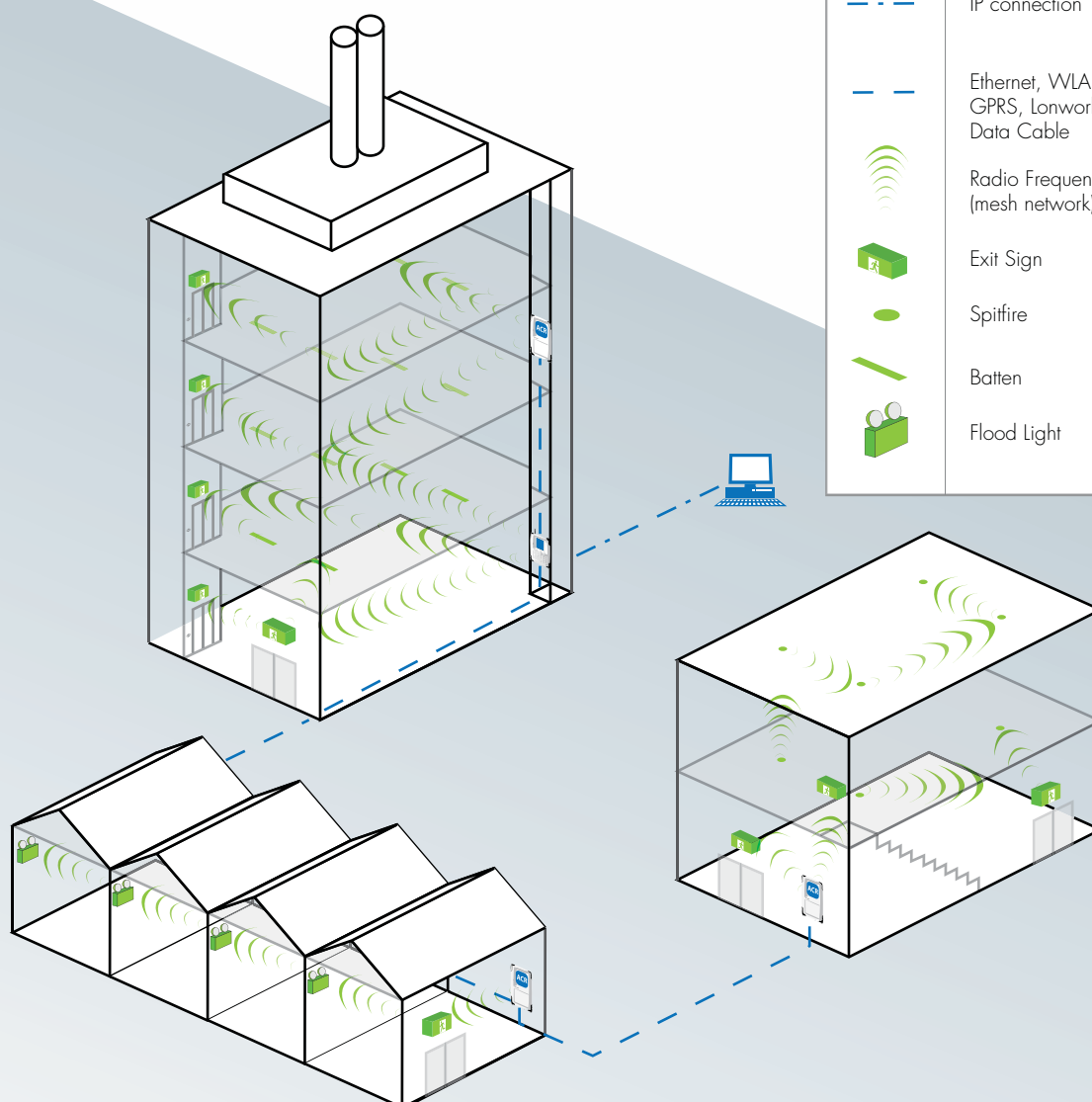
The basic Nexus® RF system is designed to run on an Ethernet system which is present in most modern buildings however through a range of interface cards the backbone of the network could be WLAN.

As with the small system example, site performance will be optimized through the careful selection and placement of Area Controller Routers and the Area Controller to form efficient clusters. Building layout and materials will also play some role in determining the best solution to deliver a highly effective means of meeting AS2293.2 testing and maintenance requirements.

The interrogation of the Nexus® database can be achieved through a variety of means. Nexus® RF is easily adapted to local or remote monitoring of the system. Locally, the Nexus® utilities can be accessed directly through the Area Controller or through a PC connected to the Area Controller. Remotely, the Area Controller can be accessed through a broadband IP connection or dial up modem. In either case, the PC requires no special software other than a web browser.

» LEGEND

	Area Controller
	Area Controller Router
	Optional Remote Computer
	IP connection
	Ethernet, WLAN, GPRS, Lonworks or Data Cable
	Radio Frequency (mesh network)
	Exit Sign
	Spitfire
	Batten
	Flood Light



Note: Drawings are conceptual only.

NEXUS® RF SYSTEM COMPONENTS

EXCEL LED™ SERIES

The Stanilite® Excel LED range has been cleverly designed to provide high visibility whilst remaining architecturally pleasing. As you would expect from any Stanilite fitting, the Excel LED range comes with high quality electronic components offering the best performance at a value for money price.

» EXCEL LED LEGEND™

Type	Single or Double Sided
Maintained	PLNRFLLED

Note – Excel LED Legend units come complete with all pictograph inserts.



» EXCEL LED LEGEND QUICKFIT®

Type	Single or Double Sided
Maintained	PLQNRFLLED

Note – Excel LED Legend Quickfit units come complete with all pictograph inserts.



» EXCEL LED SPITFIRE®

Type	Single	Dual
Non Maintained Recessed*	SFNRF1LED	SFNRF2LED
Non Maintained Surface Mount	SFBNRF1LED	SFBNRF2LED
Non Maintained Weatherproof Surface Mount	SFBVVPNRF1LED	SFBVVPNRF2LED

**White adaptors included to convert standard 60mm lamp head to 85mm diameter and 141mm diameter sizes.*



Recessed



Weatherproof Surface Mount



Surface Mount

QUICKFIT® SERIES

The Quickfit® range of exits is Australia's first choice for quality signage. The Quickfit features a unique steel slide connect bracket that provides strength, is compatible with all current and previous models for easy retrofit and enables quick and easy maintenance. Only the Quickfit bracket needs to be installed during fitout which greatly reduces damage.

Switch mode electronics and smart design provide excellent reliability, energy efficiency and long life performance from all components including lamps and batteries.

The Quickfit is available in the Lumatec® Cold Cathode and Theatre Mask models to cater for the entire project.

» QUICKFIT 10W STANDARD

Type	Single Sided	Double Sided
Maintained	PQFNRF110MSS	PQFNRF110MDS
Sustained	PQFNRF210SSS	PQFNRF210SDS

Note - Quickfit 10W units come complete with all pictograph inserts.

» QUICKFIT LUMATEC 50,000HR STANDARD

Type	Single Sided	Double Sided
Maintained	PQFNRFDR50KSS	PQFNRFDR50KDS

Note - Quickfit Lumatec units come complete with all pictograph inserts.

» QUICKFIT 18W JUMBO

Type	Single Sided	Double Sided
Straight on from here	PQFJNRF218SQL-1	PQFJNRF218SQL-5
Left from here / AOW	PQFJNRF218SQL-2	PQFJNRF218SQL-6
Right from here	PQFJNRF218SQL-3	

» QUICKFIT 10W MAINTAINED WEATHERPROOF

Type	Single Sided	Double Sided
Straight on from here	PWQFNRF110MP-1	PWQFNRF110MP-5
Left from here / AOW	PWQFNRF110MP-2	PWQFNRF110MP-6
Right from here	PWQFNRF110MP-3	

Note - for acrylic rather than polycarbonate enclosures, substitute the P with an A eg PWQFNRF110MA-1

» QUICKFIT 4W LUMATEC MAINTAINED WEATHERPROOF

Type	Single Sided	Double Sided
Straight on from here	PWQFNRFDR50KP-1	PWQFNRFDR50KP-5
Left from here / AOW	PWQFNRFDR50KP-2	PWQFNRFDR50KP-6
Right from here	PWQFNRFDR50KP-3	

Note - for acrylic rather than polycarbonate enclosures, substitute the P with an A eg PWQFNRFDR50KA-1



EMERGENCY LUMINAIRES

FLOOD UNIT SERIES

Stanilite® Flood Units provide a versatile non-maintained emergency light source especially useful for large open areas and where ceiling mounted units are difficult to install and maintain.

Type	2x12W	2x20W	2x35W
Non Maintained	FLNRF212	FLNRF220	FLNRF235



EMERGENCY BATTEN SERIES

Stanilite premium batten are suitable for a wide range of commercial and industrial applications. Featuring electronic ballast and superior photometric output these batten reduce installation, maintenance and running costs.

Type	1x18W	2x18W	1x36W	2x36W	1x58W	2x58W
Non Maintained	PBATNRF118N		PBATNRF136N		PBATNRF158N	
Maintained	PBATNRF118M	PBATNRF218M	PBATNRF136M	PBATNRF236M	PBATNRF158M	PBATNRF258M
Sustained		PBATNRF218S		PBATNRF236S		



EMERGENCY WEATHERPROOF BATTEN SERIES

Stanilite premium weatherproof batten are constructed from tough GRP with polycarbonate diffusers and stainless steel clips.

Type	1x18W	2x18W	1x36W	2x36W	2x58W
Non Maintained	WPNRF118N		WPNRF136N		
Maintained	WPNRF118M	WPNRF218M	WPNRF136M	WPNRF236M	WPNRF258M
Sustained				WPNRF236S	



NETWORK COMPONENTS



SYSTEM PACKAGES

Nexus® RF System Packages further add to the simplicity of this system, providing the basic components needed to set up a Nexus® RF network - Nexus® RF Wireless Area Controller, Nexus® RF Software, system commissioning and DLP responsibility.

Please note, for systems with more than 90 fittings additional hardware will be required. Wireless Area Controller Routers & Wireless Repeaters, along with Antennas, are not included in the Nexus® RF System Packages and, if required, need to be purchased separately.

Each site will need to be assessed for suitability of the package and for complex sites, additional system components may need to be quoted.

Stanilite staff would be happy to assist you in assessing the hardware requirements for your site. Please contact our National Customer Service Centre on 1 300 666 595 for further information.

System Size	Cat#
0-90 FITTINGS	NRFPACK1
91-180 FITTINGS	NRFPACK2
181-270 FITTINGS	NRFPACK3
271-360 FITTINGS	NRFPACK4
361-450 FITTINGS	NRFPACK5
451-540 FITTINGS	NRFPACK6
541+ FITTINGS	POA

If an alternate network backbone is to be used, then the required external interface cards will need to be purchased. Peripheral items such as keyboards, mouse, memory cards etc also need to be quoted and purchased separately.

Please discuss these requirements with your Thomas & Betts account manager.



NEXUS® FAMILY PRODUCTS

Nexus® RF joins the Nexus® LX data cabled system to form the Stanilite® suite of emergency lighting monitoring systems.

The Nexus® LX system not only offers the reliability of dedicated cable communication but is expandable, through General Purpose Nodes (GPN), to take on a range of other monitoring functions throughout a building such as mains and light levels. GPNs are also capable of interfacing to UPS or alarm systems and hence Nexus® LX provides a world of possibilities to assist owners with building management.





For further information, contact the Thomas & Betts National Support Centre on
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