

Abtech Nimbus LED Panel

CML 16ATEX3026X IECEX CML 16.0020X

Installation, Operation and Maintenance Instructions

Description

The Abtech Nimbus range of LED panels consists of an LED panel which is connected to the driver unit (NDU) or emergency LED driver unit (NDEU). The panel is manufactured from an extruded aluminium frame with an acrylic and PPMA diffuser. LED arrays illuminate the panel. The NDU/NDEU consists of an aluminium enclosure, which contains the mains input terminals, panel supply terminals and driver housing, which is sand filled. The emergency driver unit enclosure also contains rechargeable batteries. The output supply cable is attached to the panel and has a maximum length of 4m. The supply cable is LSOH.

Application

The luminaire is suitable for use in Zone 1 internal areas, gas hazards only, and reference should be made to the rating table below in respect of T rating and ambient temperature considerations, The luminaire is designed for use in areas not subject to levels of vibration or shock above those considered normal for fixed installations and the panel should not be exposed to moisture or liquids. Care should be taken, not to expose the gasket(s) to high concentrations of hydrocarbon vapours. The NDU/NDEU uses an external non-metallic coating (paint). To avoid the build-up of an electrostatic charge clean only with a damp cloth. Refer to apparatus certificates (supplied with luminaire and available at www.abtech.co.uk) for details of certification, coding, conditions for safe use, etc. Refer to apparatus label for warnings

Luminaire Ratings

Product Reference	Colour Temperature (K)	Ambient Temp	Power (W)	Temp Class	Dimensions (mm)
				Tamb 40°C	
LX1NIM05LBXX	4000/5700	-20°C to +45°C	6.5W	T4	150 x 150
LX1NIM051LBXX	4000/5700	-20°C to +45°C	13W	T4	200 x 350
LX1NIM11LBXX	4000/5700	-20°C to +45°C	13W	T4	300 x 300
LX1NIM125LBXX	4000/5700	-20°C to +45°C	20W	T4	275 x 600
LX1NIM12LBXX	4000/5700	-20°C to +45°C	20W	T4	300 x 600
LX1NIM14LBXX	4000/5700	-20°C to +45°C	20W	T4	600 x 600
LX1NIM16LBXX	4000/5700	-20°C to +45°C	20W	T4	600 x 1200

('XX' Options = '40' warm white (WW) 4000K or '57' pure white (PW) 5700K)

Operating Parameters

Product Reference	Lamp Power	LED Current	Input Voltage	Input Frequency
LX1NIM05	6.5W	500mA	90 to 264 Vac	47Hz to 440Hz
LX1NIM051	13W	1.0A	90 to 305 Vac	47Hz to 440Hz
LX1NIM11	13W	1.0A	90 to 305 Vac	47Hz to 63Hz
LX1NIM125	20W	1.5A	90 to 305 Vac	47Hz to 63Hz
LX1NIM12	20W	1.5A	90 to 305 Vac	47Hz to 63Hz
LX1NIM14	20W	1.5A	90 to 305 Vac	47Hz to 63Hz
LX1NIM16	20W	1.5A	90 to 305 Vac	47Hz to 63Hz

Installation

1. General

The Nimbus panel and driver is certified to the ATEX directive (Certificate Number: CML 16ATEX3026X) and the IECEx standards (Certificate Number: IECEx CML 16.0020X). The product may be supplied with individual ATEX or IECEx certification or dual ATEX and IECEx certification as applicable. The relevant certificate should be used in conjunction with the installation, operation and maintenance of the product.

Installation and electrical connections must be carried out in accordance with EN/IEC60079-14 and EN/IEC60079-15 as applicable and local or national standards and/or codes of practice as applicable. The Nimbus luminaire panel is a class 3 apparatus, the NDU is class 1 apparatus and must be suitably earthed. An external earth stud is provided on the NDU. It is the installer /user’s responsibility to ensure that the luminaire and the relevant ratings are suitable for the application, zone and environment and ensure the materials as stated will not be attacked by existing or foreseeable aggressive substances. It should be noted that this equipment may be provided with an external non-metallic coating (paint finish). In this case and to avoid the build-up of an electrostatic charge, clean only with a damp cloth.

2. Supply Voltages

For voltage refer to rating plate. The supply voltage must be within the Vac range specified in the operational parameters.

Note: it is important that the frequency of the supply matches the frequency stated on the driver rating label.

Supply voltage variation must not exceed ±6% and the luminaire should not be operated continuously beyond this limit. In any case the voltage variation must NEVER exceed ±10% as this will invalidate the certification and could lead to the product being unsafe. If in doubt, advice should be sought from Abtech technical department.

3. Mounting Luminaire

The luminaire can be surface mounted, recess mounted or free hanging from a solid structure which is not prone to excessive levels of vibration or shock. The luminaire should be fixed in position in accordance with lighting design parameters and secured using appropriate fixings. (see catalogue for details or refer to sales@abtech.eu)

The enclosure is manufactured from aluminium and in rare cases, ignition sources due to impact and friction could occur. This shall be considered during installation.

4. Wiring

Mains connections are to the NDU only and this is suitable for use with cable with insulation rated for a minimum temperature of 80°C. Terminals are suitable for looping up to 6mm² conductors. Access to the terminals is via the NDU cover which can be removed by undoing the four cover screws.

The LED panel is supplied with cable and this should be connected to the + and – terminals within the NDU. The supply is intrinsically safe and appropriate clearance should be observed between the mains supply cables and panels supply cables. The maximum length of the panel supply cable is 4 metres. This is already connected to the panel. The panel supply cable may be shortened but must never be replaced or extended.

All electrical connections and components should be inspected for security of wiring and cracks in insulation and stray conductor strands. The conductors should be fitted into the terminal block ensuring that conductors are not stretched or stressed. When terminating the conductor into the terminal block this must be carried out in an ambient temperature of between -10°C and 40°C, also it is vital that no more than 1mm of bare conductor protrudes from the terminal throat.

Maximum current rating of the terminal block is 28A continuous. Only one conductor may be fitted in each terminal way. Tighten all used and unused terminal screws. Refit the cover, ensuring that the gasket is clean and undamaged. As an option the terminals may be of the cage clamp type and these can be loosened by pressing on the tab above the conductor entry. The conductor is securely clamped by removing pressure from the tab.

5. Cable Glands

The NDU is an increased safety enclosure and the cable glands & stopping plugs must be suitably certified Ex e or must meet the requirements of EN 60079-0 & EN 60079-7 for ATEX certified apparatus and IEC 60079-0 & IEC 60079-7 for IECEx certified apparatus for non-sparking enclosures. Where dual certification is provided, cable glands and stopping devices must be similarly dual certified.

Cable glands should be fitted with an appropriate sealing washer to the outside of the enclosure. The sealing washer must maintain the minimum IP rating as noted on the apparatus label.

Standard mains cable entry is M20 clearance; other cable entry sizes are available on request. Additional cable entry holes must not be drilled on site and may only be modified by Abtech.

6. LED Fitting and Replacement

The Nimbus panel is a sealed for life unit, the only acceptable access is to the electrical connections through the junction box. The driver enclosure within the NDU contains no user serviceable parts and must not be opened as this may affect the safe operation of the equipment. In the event of a failure or malfunction, please contact Abtech technical department.

Maintenance

1. Visual Inspection

Visually inspect the luminaire for signs of damage or loose screws, Check operation of LED by powering up the unit, leave the unit powered for at least an hour and inspect for any failures.

2. Internal Inspection

Remove the Junction box cover and check state of gasket for tears or dirt. Replace as necessary. Check tightness of cable gland and tighten as necessary. Check tightness of all terminal screws (if applicable). Check for any signs of water ingress and remedy as necessary. Check condition of all wiring and electrical components for signs of arcing or overheating. Refer to Abtech technical department for advice if any components are in doubt. Refit junction box cover and tighten screws.

3. Fault Finding

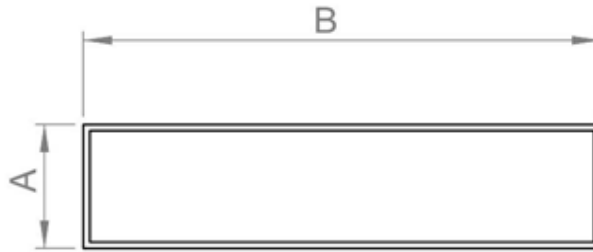
Any fault finding must be carried out with the luminaire de-energised and without a flammable atmosphere present. Generally LED drivers are very reliable and faults are usually the result of loose cabling. If, after checking the wiring, the fault is still present, please refer to Abtech technical department for assistance.

4. Gasket Replacement

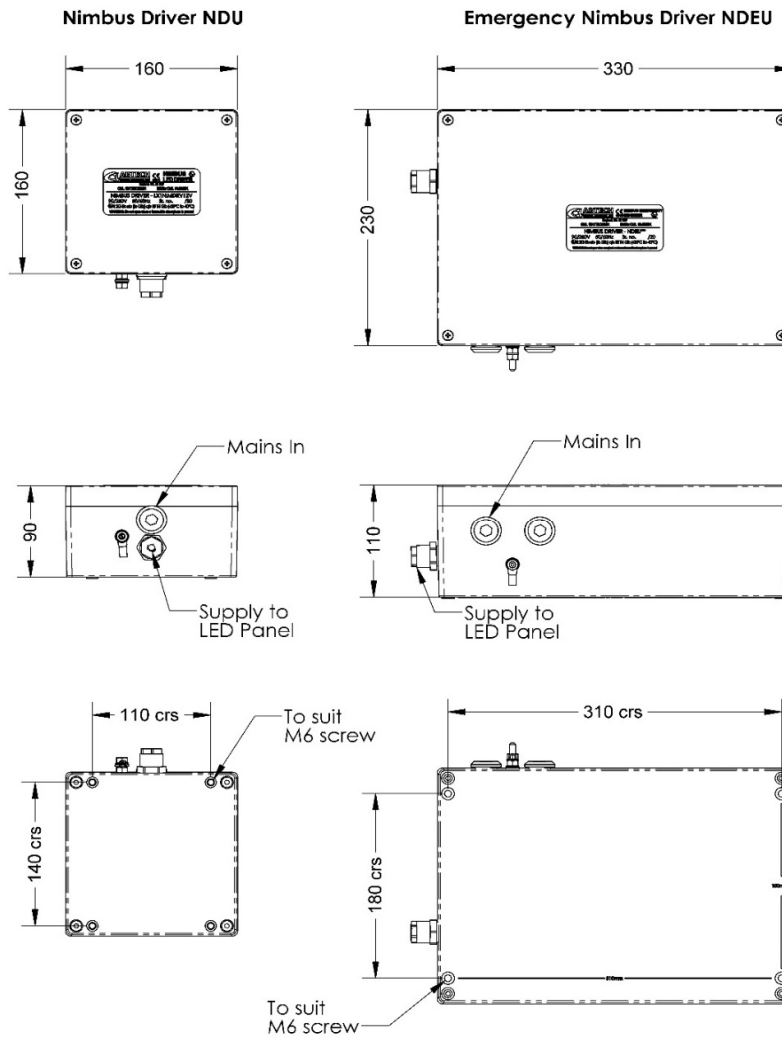
The junction box gasket is one-piece silicone sponge and can only be obtained from Abtech. The old gasket should be removed and any traces of sealant cleaned off. The area where the gasket is situated should be clean and free from grease. The cover, with new gasket fitted, should then be fitted to the enclosure and the four cover screws fitted and tightened evenly to ensure constant and even compression of the gasket.

Luminaire Dimensions

	NIMBUS 05	NIMBUS051	NIMBUS 11	NIMBUS12 5	NIMBUS 12	NIMBUS14	NIMBUS16
A	150	200	300	275	300	600	600
B	150	350	300	600	600	600	1200

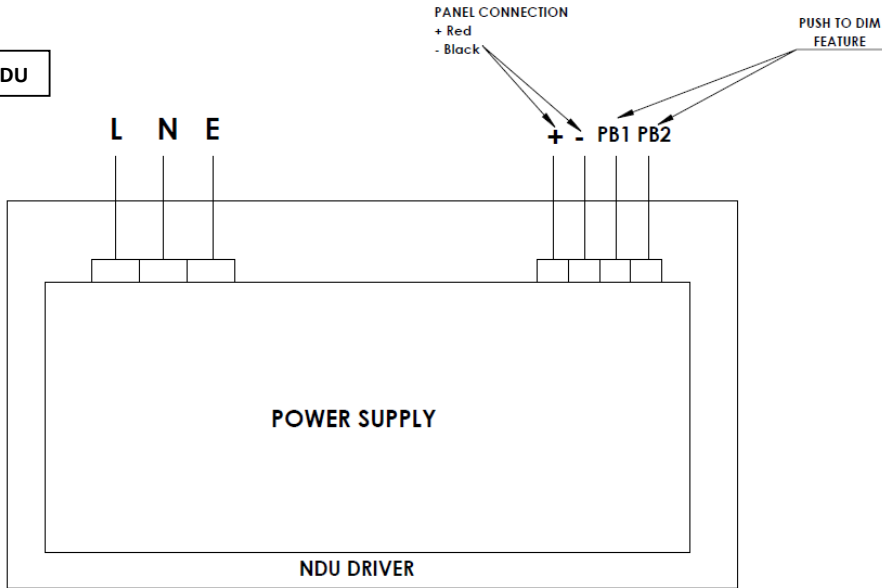


Nimbus Driver Unit (NDU) Dimensions

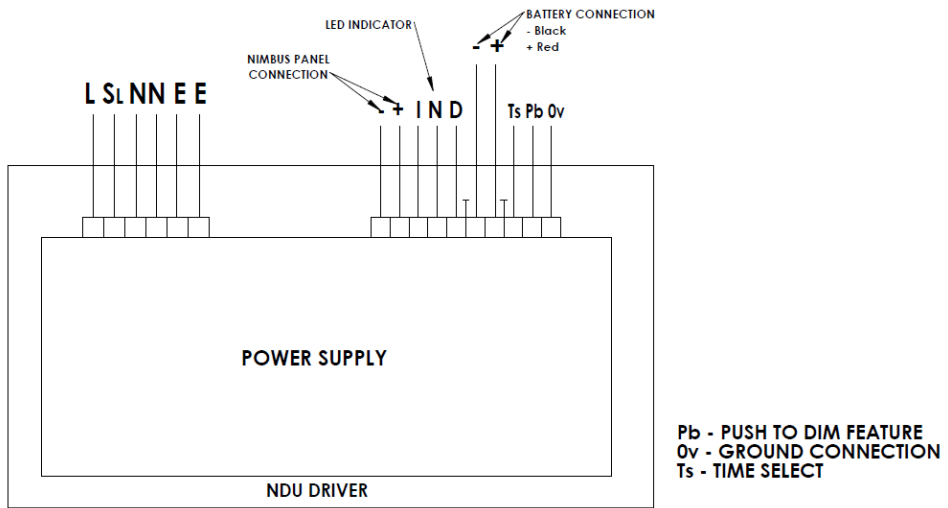


Wiring Diagrams

Nimbus Driver NDU



Emergency Nimbus Driver NDEU



Note

The NDEU is supplied with the battery lead disconnected to prevent discharge. Connect the Back-up Battery lead whilst unit is **disconnected** from mains supply (L/LS) It is recommended the NDEU is run continuously for 36 hrs after installation to ensure the battery is fully charged.