

PX378

# PxArt+ frame

MANUAL



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*Manufacturer reserves the right to make modifications in order to improve device operation.*

# 1. GENERAL DESCRIPTION

PxArt+ Frame is a professional cropping LED illuminator for the lighting of museum exhibitions or trade fair displays.

The precise cropping system allows you to control the luminous flux and adjust the illumination range to the size and position of the displayed object. Thanks to the application of the latest semiconductor COB type SSL LED light source and advanced control electronics, a high performance illuminator was made, which fulfils very high demands concerning museum exhibition and trade display lighting applications. Its most important advantages include the possibility of precise cropping of the displayed objects, total lack of ultraviolet radiation emission, traces of infrared radiation, very high colour rendering index (CRI), and very large brightness at small energy consumption.

The device features a holder allowing for its quick assembly on GLOBAL Trac® Pulse Control tracks. An individual address assigned to each illuminator allows for adjustment of brightness regardless of the settings of other illuminators.

Thanks to the press buttons located on a lamp housing, it is also possible to control the illuminators manually (e.g. in case of connecting a lamp to a frame without the control lines).

A high output LED was used in the lamp with an effective control system. Thanks to this, the lamp features small heat emission.

By using an additional PX277 device (PxArt Controller Settings), you can set all parameters of the device and read the information on the time and temperature of the lamp.

The PX378 illuminator supports the DMX-RDM protocol.

# 2. SAFETY CONDITIONS

**Caution! Before installing, connecting and using the lamp you have to absolutely read this document.**

The following symbols are used to underline important information on security conditions on the product and in this manual.



**Danger!**  
Risk of loss of life and health.



**Warning!**  
Fire hazard.



**Warning!**  
LED light emission.  
The risk of eye damage.



**Warning!**  
The risk of burns.



**Warning!**  
Read the instruction manual.



**ESD Protection!**  
Read the instruction manual.



**Caution!**

**Do not look at the LEDs at a shorter distance than 2.0m from the front surface of the tube without proper eye protection. LEDs can cause damage or eye irritation. Do not look at the light source directly through any optical instruments, which focus the light rays.**



**While working at an ambient temperature of 25°C housing unit can heat up to 90°C. Because of the danger of burns, avoid direct contact with the casing.**



**In case of improper usage of the product it may cause a risk of serious injury or death because of the threat of fire.**



Device PX378 is powered directly from standard 230 V grid what can cause electric shock when safety rules are not observed.

**Therefore it is necessary to observe the following:**

1. Installation, particularly power connection, should be performed by a person holding the appropriate qualifications, according to instruction manual.
2. Lamp can be connected only to grid, which has protecting instalation in working order (3-wire grid).
3. All the conductors should be protected against mechanical and thermal damage.
4. In the event of damaging any conductor, it should be replaced with a conductor of the same technical data and attestations.
5. Device with visible mechanical damage cannot be connected to the mains.
6. All repairs, should be made with cut off power supply.
7. The device should be strictly protected against water and other liquids.
8. All sudden shocks, particularly dropping, should be avoided.
9. The device cannot be used in places with temperature lower than 2°C or higher than 40°C.
10. The device cannot be turned on in places with humidity exceeding 90%.
11. Clean with damp cloth only - lamp should be made with cut off power supply.

The dimming of the lamp brightness occurs when the temperature is above 70°C, which prevents the device from overheating. If the device reaches a temperature of 90°C, the power of the lamp will be totally reduced. The light is then switched automatically in the event of temperature drop below the maximum temperature (90°C). The higher the temperature of the device, the greater is the brightness dimming.

### 3. VERSION DATA

There are several versions of the PX378 lamp which are different from each other in a colour rendering index, colour temperature and colour of the housing.

Below there is a description of designations of PX378 models with explanation:

PX378-UYZ

#### **U - CRI colour rendering index**

X - 95

8 - 80

9 - 90

#### **YY - Colour temperature**

30 - 3000K

50 - 5000K

#### **Z - Lamp housing colour**

1 - grey

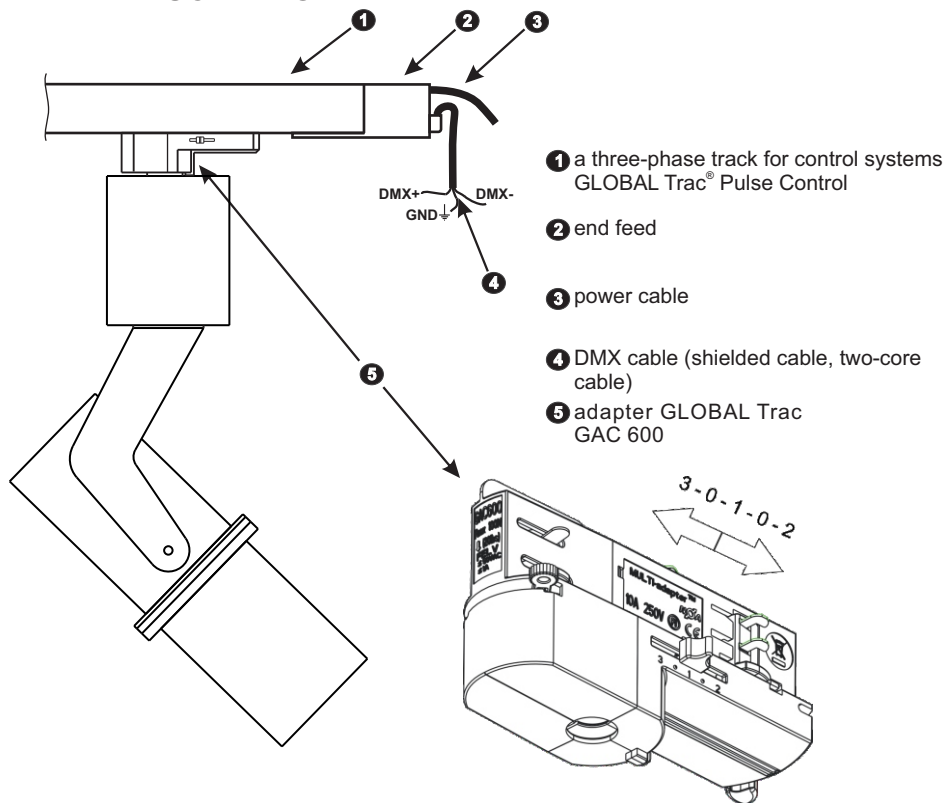
2 - black

3 - white

Example of lamp designation:

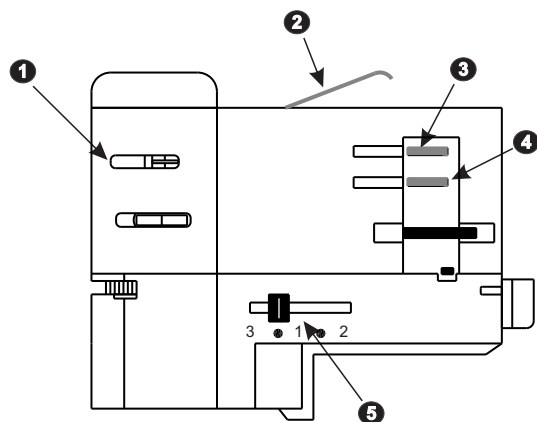


## 4. LAMP DESCRIPTION



## 5. DMX SIGNAL AND POWER CONNECTION

### 5.1. Adapter GLOBAL Trac GAC 600



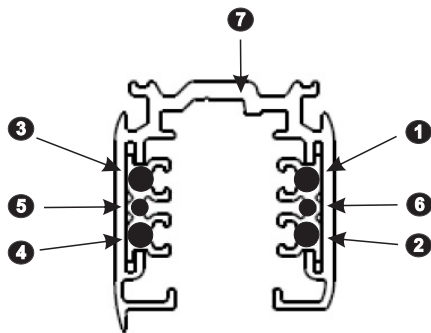
#### CONTACTS DMX

- 1** DMX - (on the opposite side DMX +)

#### POWER CONTACTS

- 2** earth
- 3** phase 1 (phase 2 on the opposite side)
- 4** neutral (phase 3 on the opposite side)
- 5** phase selector switch

## 5.2. Section through the DMX GLOBAL Trac Pulse control current rails.



### POWER

- ① phase 2
- ② phase 3
- ③ phase 1
- ④ neutral

### DMX

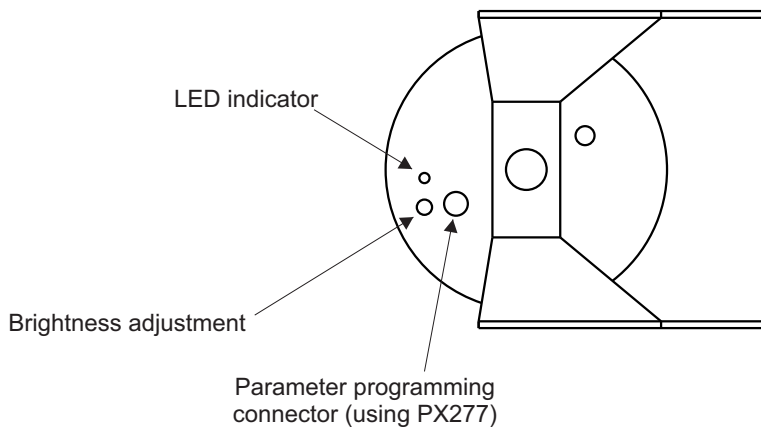
- ⑤ DMX -
- ⑥ DMX +
- ⑦ GND

## 6. MANUAL CHANGE OF LAMP SETTINGS

The lamp has been equipped with a button which allows for changing the brightness level. The button has been placed at the bottom part of the junction box, above the lamp reflector.

The layout of the button and connectors for connecting the PX277 programmer has been shown in the figure below:

Manual control button and socket  
for programming the lamp parameters



Over the illuminator, there is a LED informing about the lamp condition.

Depending on the situation, the LED signals the following messages:

- lamp starting – rapid blinking of the LED for 2 s,
- DMX signal receipt – slow blinking of the brightness adjustment press button (with frequency of 1Hz) for the first minute after the receipt of the DMX signal,
- after starting up of the lamp with the lack of the DMX signal – the LED lights (continuously) for 1 minute,
- damage of a temperature sensor module – the LED does not go off after one minute.

In order to reduce brightness, a relevant adjustment key must be held pressed for a while. If the LED starts blinking during the adjustment, it means that the marginal level has been reached (minimal or maximal), then the adjustment direction is reversed.

It is possible to reverse the adjustment direction without reaching the marginal levels, e.g. while increasing the lamp lighting brightness release the key, the LED will signal reversing of the adjustment direction with a single blink, the pressing of the adjustment key again will result in dimming (diminishing of brightness) of the lamp.

During the operation of the lamp, the LED remains off (except the situations described above).

## **7. COOPERATION WITH PX277 SETTINGS CONTROLLER**

Lamp settings can be changed by connecting it with the PX277 PxArt Settings Controller.

On setting the connection, the PX378 will start up again, as a result of which the LEDs go off for a moment and the LED informing about the DMX signal condition blinks for 2 s.

On starting up the device, the screen displays its name. The main menu allows for the viewing of many parameters of the PxArt series lamps and changing of the following options: brightness address, scene brightness, smoothing, altering of smoothing time and return to factory settings.

Moreover, it is possible to review the lighting time and lamp operation time (the lamp total operation time, also without lighting up the LEDs), information concerning the minimal, maximal and current temperature reached by the lamp.

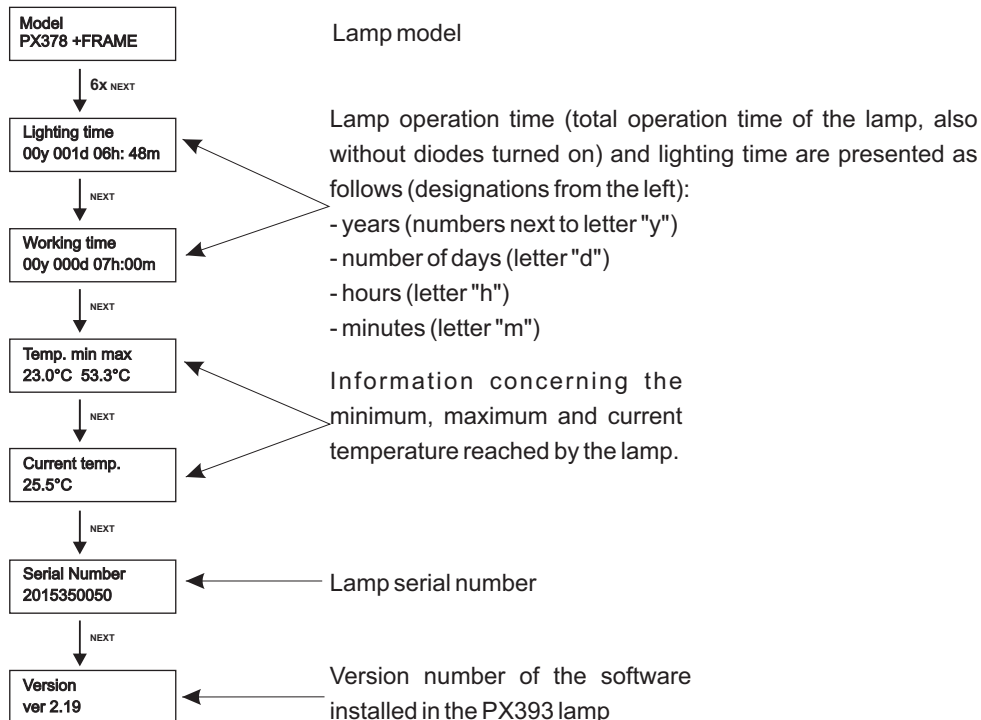
The PxArt Settings Controller allows for checking the version number of the software installed in the lamp, its serial number and model.

Navigation in the menu is effected by using the controller keys located under the screen. The "escape" key enables entering a higher level in the device controls, while the "next" and "previous" keys are used for moving on or back (or for increasing or decreasing of a value). The "enter" key, instead, allows for entering the edition of the selected menu or acceptance of the edited value.



## 7.1. Description of the information parameters

PX277 controller allows you to read important information concerning the lamp to which it has been connected.

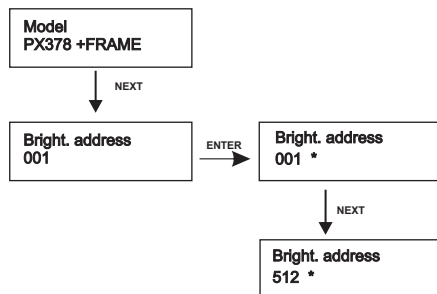


## 8. SETTING LAMP PARAMETERS

### 8.1. Lamp brightness address

PX277 allows for changing the DMX address which controls the brightness of the lamp. The lamp has the DMX channel assigned whose value can be changed depending on the needs. DMX channel can be set between 1 to 512.

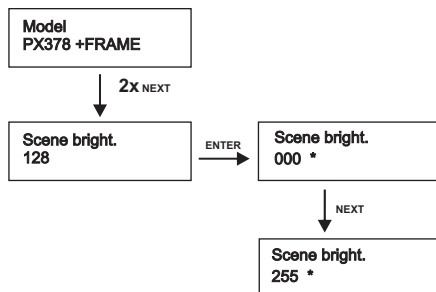
To change the DMX channel (which is responsible for the lamp function), select in the PX277 menu a **[Bright. address]** option, confirm by pressing "enter" and then using "previous" and "next" buttons set an appropriate value. After the change of the DMX channel, the operation has to be confirmed by pressing "enter".



## 8.2. Scene brightness

Lamps from PxArt series can work without using DMX control. In such case, PxArt Settings Controller enables changing the scene brightness value. This value can be set between 0 to 255.

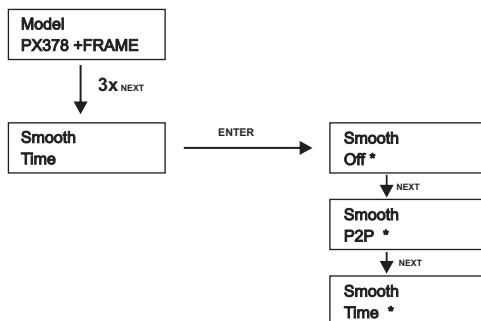
[**Scene bright.**] set to value 0 turns off the stage and turns the value 255 to 100%. Value 128 means the stage brightness is 50%. After changing the value of the stage brightness, the operation has to be confirmed by pressing "enter".



## 8.3. Smooth

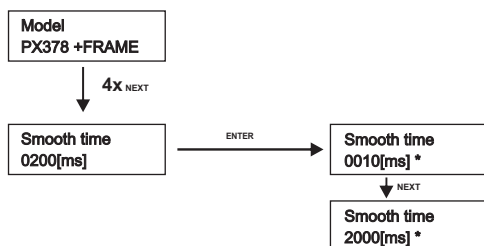
The device also has the smoothing option which enables smooth brightness modifications. When the function is turned off, the transitions between successive DMX values sent to the lamp (responsible for brightness changes) occur smoothly, without visible jolts, which prevents light "vibration" effects in the lighting systems.

The next two DMX values sent to the lamp are linearly smoothed between DMX signal packets for the selected option [**P2P**] or the time interval set in the menu [**Time**].



## 8.4. Smooth time

When the PxArt Settings Controller time smoothing function is active, it allows for changing the smoothing time value. As a result it enables an acceleration or deceleration of the brightness parameter change. Maximum available value is 2000 [ms] and minimum is 10 [ms].



[**Smooth time**] makes it possible to change the time parameter at which subsequent different DMX signal values sent to the lamp are smoothed among themselves. The user may set the smoothing time using "previous" and "next" buttons.

## 8.5. Restoring default settings

The device comes with the option to restore default settings.

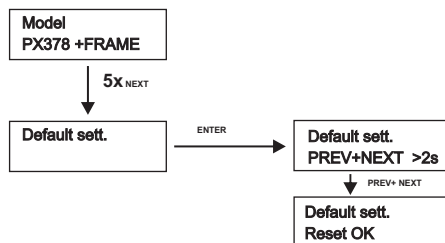
To use this option, select the **[Default sett.]** menu and press "enter".

A window informing about the need to press "previous" and "next" buttons will appear for 2 seconds simultaneously. Next, the device will display **[Reset OK]**. The acceptance of this message by using "enter" restores default settings.

There is also a possibility to exit the level of this menu without returning to default settings. In such case, the "escape" button will be selected.

PX378 default setting:

- Brightness address - 001
- Stage brightness - 128
- Smoothing - Time
- Smoothing time - [200 ms]



## 9. RDM DESCRIPTION OF AVAILABLE PARAMETERS

PX378 supports the DMX-RDM protocol. DMX protocol in its assumption enables one-way data flow while its extension, the RDM protocol, can transmit information in two ways. This makes the simultaneous receiving and sending of information possible and allows for monitoring the operation of devices compatible with the RDM protocol as well as possibly changing the configuration of their parameters.

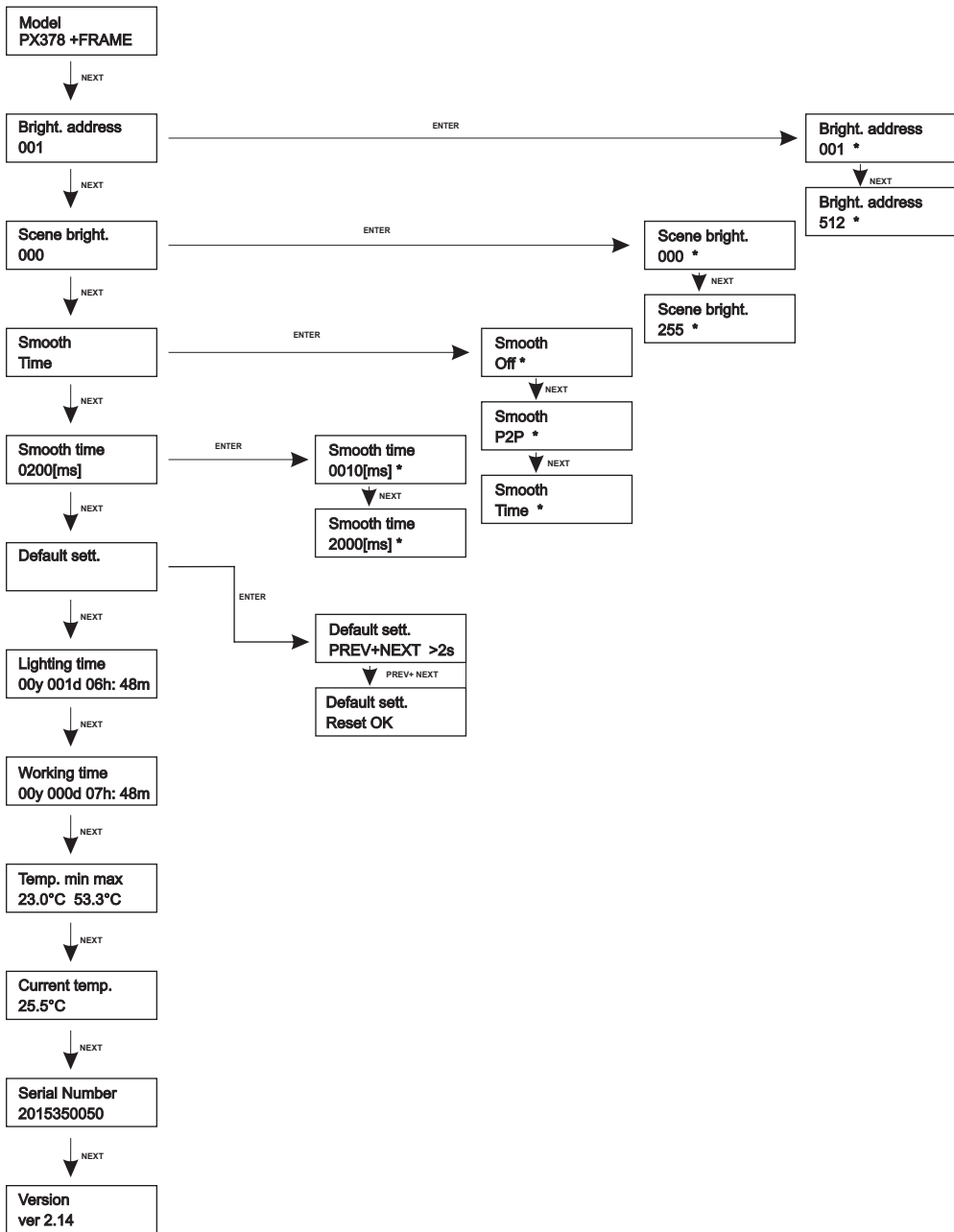
**Below there is a list of RDM parameters supported by PX378:**

Parameter name	PiD	Description
SUPPORTED_PARAMETERS	0x0050	all supported parameters
PARAMETER_DESCRIPTION	0x0051	description of additional parameters
DEVICE_INFO	0x0060	information concerning the device
SOFTWARE_VERSION_LABEL	0x00C0	firmware version of the device
DMX_START_ADDRESS *	0x00F0	DMX starting address of the device; minimum value: 1, maximum value: 512. According to the RDM standard, for device whose footprint is 0, the value of this parameter may be 65535 and then it is not possible to change the initial address settings for the entire device, but only for sub-devices.
IDENTIFY_DEVICE *	0x1000	device identification, Two states are possible: identification is off (0x00 value) and identification is on (0x01 value).

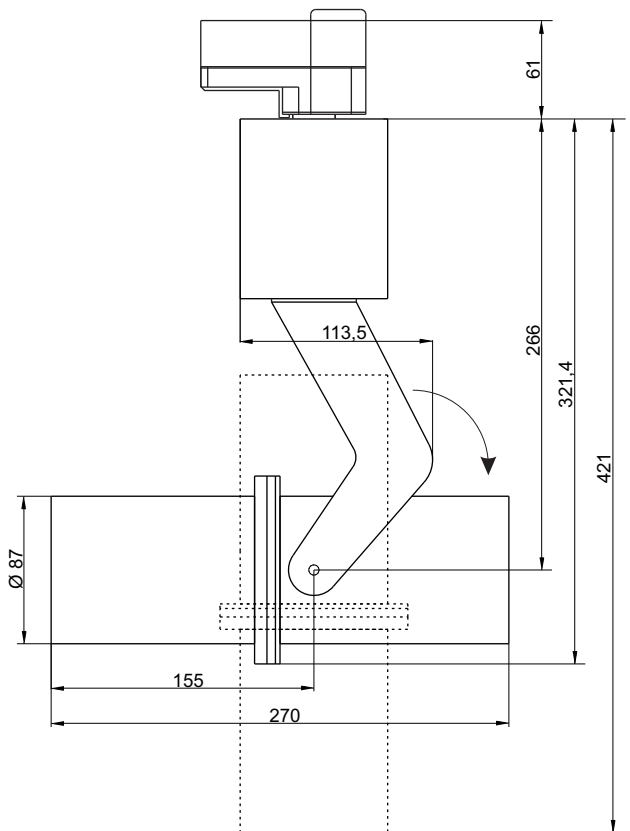
<b>Parameter name</b>	<b>PiD</b>	<b>Description</b>
DEVICE_MODEL_DESCRIPTION	<b>0x0080</b>	device description, e.g. name
MANUFACTURER_LABEL	<b>0x0081</b>	manufacturer description, e.g. name
DEVICE_LABEL *	<b>0x0082</b>	additional device description, It is possible to enter an additional device description using up to 32 ASCII characters.
FACTORY_DEFAULTS	<b>0x0090</b>	device default settings
DMX_PERSONALITY	<b>0x00E0</b>	DMX operational mode
DMX_PERSONALITY_DESCRIPTION	<b>0x00E1</b>	description of individual operational modes
SENSOR_DEFINITION	<b>0x0200</b>	information concerning the selected temperature sensor
SENSOR_VALUE	<b>0x0201</b>	information concerning sensors
DEVICE_HOURS	<b>0x0400</b>	information concerning the working time of the device counted in hours
LAMP_HOURS	<b>0x0401</b>	information concerning lamp lighting time
TEMPERATURE_LIMIT_ON/OFF	<b>0x800E</b>	temperature limitation activation for the temperature sensor connected to the driver, For 0 value, the function is not active; for 1 value, the function is active. Default value is 1.
TEMPERATURE_THRESHOLD_LOW	<b>0x800F</b>	lower temperature value for which the temperature limitation is being activated
TEMPERATURE_THRESHOLD_HIGH	<b>0x8010</b>	upper temperature value for which the temperature limitation is active, i.e. the cut-off temperature for exits from the driver
SMOOTH_DIS_0/P2P_1/TIM_2 *	<b>0x801A</b>	selection of the options concerning Smooth function, For 0 value, the smooth function is off; for 1 value, the smooth function operates in the Packet to Packet mode (P2P) and for 2 value, the smooth function operates in the time mode. Value 0 set by default – smoothing off.
SMOOTH_TIME *	<b>0x801B</b>	smoothing time for TIM (time) function selected in the above point, Unit expressed in [ms]. Minimum parameter value is 10 and maximum is 2000 [ms]. Default value is 200 [ms].
SCENE_BRIGHTNESS *	<b>0x8022</b>	brightness settings, Minimum value: 0, maximum value: 255. Default value is 128.
SERIAL_NUMBER	<b>0x8030</b>	device serial number

\* - parameter editable

# 10. DEVICE PROGRAMMING



## 11. DIMENSIONS



Dimensions in millimetres

## 12. TECHNICAL DATA

Catalog number: PX378

Power: 230 V AC

Number of LEDs: 1 (COB)

Power input: 27 W

PF (power factor): 0,94

Max. increase of the housing temperature: + 50° C

CRI color rendering index: min. 80

LED lifetime: 50 000 h

Cropping area: max. 1,35x1,35 m (at distance 3m)

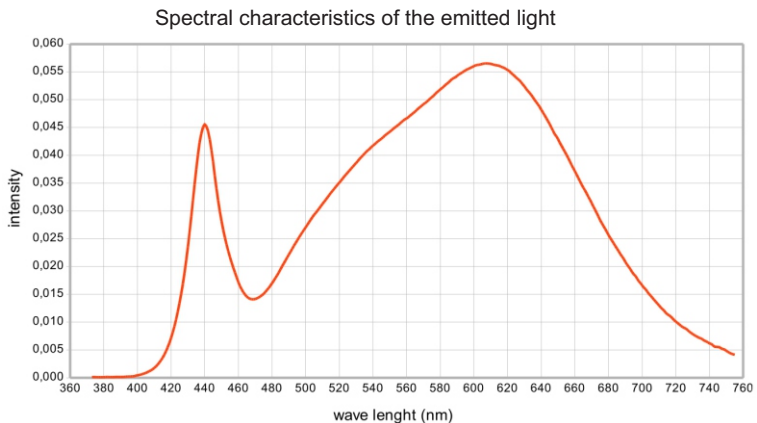
Range of brightness: 0 - 100%

Control protocol: DMX-512 / RDM

Available housing colors: grey, black and white

Weight: 2,3 kg

Dimensions: Width: 113,5 mm (270 mm for horizontal reflector head)  
Height: 421 mm  
Diameter of the reflector: 87 mm





ul. Przemysłowa 12  
30-701 Kraków

tel: 12 626 46 92  
fax: 12 626 46 94

e-mail: info@pxm.pl  
http://www.pxm.pl

**DECLARATION OF CONFORMITY**  
according to guide lines 2004/108/WE and 2006/95/WE

Name of producer: **PXM Marek Żupnik sp. k.**

Address of producer: **ul. Przemysłowa 12  
30-701 Kraków**

*declares that the product:*

Name of product: **PxArt+ Frame**

Type: **PX378**

*answers the following product specifications:*

**LVD:** **PN-EN 60598-1:2011**  
**PN-EN 62471:2010**

**EMC:** **PN-EN 61000-4-2:2011**  
**PN-EN 61000-6-1:2008**  
**PN-EN 61000-6-3:2008**

*Additional informations:*

Pay attention to the correct connection of power cables.

Maintenance can be performed only while the current rails system is off.

DMX signal has to be connected by using a shielded cable, connected to the GND pin.



**Marek Żupnik spółka komandytowa**  
**30-701 Kraków, ul. Przemysłowa 12**  
**NIP 677-002-54-53**

Kraków 10.06.2015

mgr inż. Marek Żupnik