DMX REFERENCE

PRO LUX LED PAR 2020 IP

PRO LUX



Manufacturer	PRO LUX
GDTF file	Pro_Lux_PRO_LUX_LED_PAR_2020_IP_126489.gdtf
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1 About this manual

This document describes the PRO LUX LED PAR 2020 IP by PRO LUX. It was compiled from the GDTF file Pro_Lux_PRO_LUX_LED_PAR_2020_IP_126489.gdtf from the GDTF-Share library.

File revision: “rev1”.

The DMX modes, the channel functions and the technical data are given as the GDTF file states them. Installation, operation from the device's control panel, service and safety instructions are described in the manufacturer's original user manual, which takes precedence over this document.

This document was not issued or endorsed by PRO LUX; product names and trademarks belong to their owners.

Safety notices are marked with signal words according to the severity of the hazard: DANGER – an imminent hazard that will result in death or serious injury; WARNING – a potential hazard that could result in death or serious injury; CAUTION – a potential hazard that could result in minor injury or property damage; NOTE – additional information for correct and safe use.

> **NOTE** This product is designed for stage and effect lighting. It is not suitable for household room illumination.

2 Quick reference

Parameter	Value
Power consumption	300 W
Weight	3.4 kg

DMX modes

Mode	Channels	Units in one universe	First start addresses
6CH mode	6	85	1, 7, 13, 19, ...
10CH mode 1	10	51	1, 11, 21, 31, ...

No light? Check these channels

- 10CH mode 1: CH 1 Dimmer above 0; CH 2 Shutter at 0–10 “Open”


Read the manual before use


Risk of electric shock


Do not stare into the light


Indoor use only

3 Safety instructions


Read the manual before use


Risk of electric shock


Do not stare into the light


Indoor use only

⚠ WARNING

- This device is intended for professional use. Installation, connection, setup and maintenance must be carried out only by suitably qualified persons who have read this manual.
- Use the device only for its intended purpose and as described in this manual.
- Do not open the housing and do not modify or tamper with the device. Refer all repairs to an authorized service center.
- Do not use the device if its housing, power or data cable, or a connector is damaged, if the device has been dropped, or if liquid or a foreign object has entered it. In such a case, have it checked by a service center.
- Disconnect the device from the power supply before cleaning, maintenance or any work on the connections.
- After moving the device from a cold to a warm environment, let it reach room temperature before switching it on to prevent condensation inside.
- The device is not a toy; keep it out of the reach of children.

⚠ WARNING

- Connect the device only to a properly installed mains outlet with a protective earth (ground) contact. The outlet or other means of disconnection must remain easily accessible.
- Power supply: 100–245 V, 50/60 Hz. Before connecting, make sure that the mains voltage matches this value and the value on the rating plate of the device.
- Do not connect the device to a dimmer or to a dimmed circuit.
- Use only the original power cable or a cable with identical ratings. Protect the cable from damage, do not run it over sharp edges, and never unplug it by pulling on the cable.
- When connecting several devices to one circuit, do not exceed its permitted load.
- Do not touch the device with wet hands.

⚠ WARNING

- This device is designed for indoor use only. Protect it from rain, splashing water, moisture and dust, and do not place containers with liquids on it.
- Do not operate the device in high humidity, near water, or where condensation can form on it.

⚠ CAUTION

- This device emits intense light. Do not look directly into the light source or the beam at close range; doing so may damage your eyes.
- Do not aim the beam at the eyes of people or animals at close range, and do not view the light source through optical instruments (binoculars, camera lenses).
- Do not aim the beam at flammable or heat-sensitive materials at close range.

⚠ WARNING

- This device emits ultraviolet (UV) radiation, which can harm the eyes and skin.
- Do not look directly into the light source and avoid prolonged exposure of the eyes and skin at close range. Install the device so that people are not exposed at close range.
- People with increased sensitivity to light, including those taking medication that increases this sensitivity, should avoid UV exposure.

⚠ CAUTION

- Strobe and fast flashing light effects can trigger epileptic seizures in susceptible people (photosensitive epilepsy) and can cause nausea or disorientation.
- Inform the audience and performers in advance that strobe effects will be used, for example with a notice at the entrance, and do not use them longer than necessary.

4 Installation

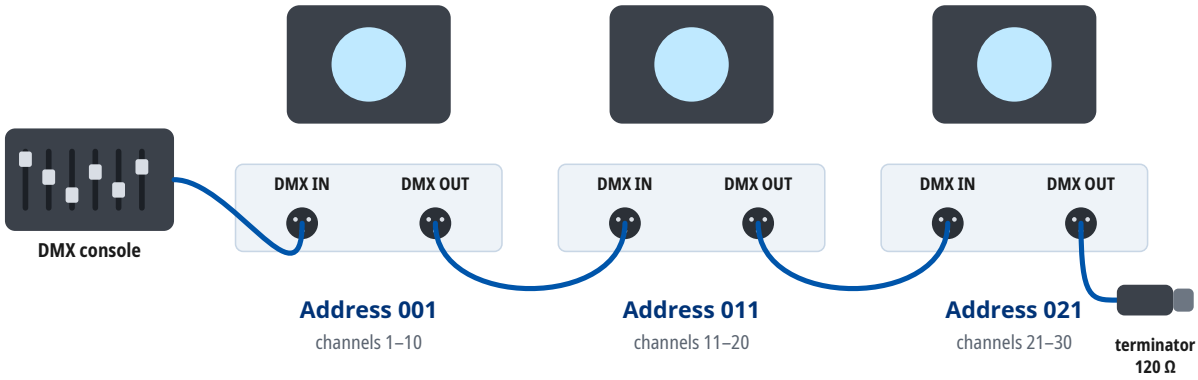
⚠ WARNING

- Rigging must be carried out only by qualified persons in accordance with applicable regulations, in particular those for work at height.
- The supporting structure and fixings must safely carry the weight of all suspended devices; verify their load capacity in advance.
- Weight of the device: 3.4 kg.
- Use suitable mounting hardware (for example truss clamps) and tighten all screw connections properly.
- Always secure the suspended device against falling with a safety cable of adequate load capacity, routed through a fixed point of the device and around the supporting structure.
- During installation and removal, keep people out of the area below the work position.
- Regularly inspect the fixings and the safety cable for damage, corrosion and loosening.

5 Connections

- Use shielded cable designed for DMX512 with an impedance of 110 Ω. Ordinary microphone cable is not suitable for DMX, especially over longer distances.
- Connect the devices in a daisy chain: connect the DMX OUT of one device to the DMX IN of the next. Do not split the line with Y-cables or wire it in a star; the line may be split only with a DMX splitter.
- Connect the shield to pin 1 only. Do not connect the shield (ground) to the metal shell of the connector; this can cause short circuits or erratic behavior.
- XLR pin assignment: pin 1 – shield (ground), pin 2 – Data- (Data Complement), pin 3 – Data+ (Data True). On 5-pin connectors, pins 4 and 5 are not connected; a 5-pin connector can be connected to a 3-pin one with a cable adapter.
- Terminate the end of the line (for impedance matching): plug an XLR connector with a 120 Ω, ¼ W resistor between pins 2 and 3 into the DMX OUT of the last device. This reduces the risk of erratic behavior.
- Connect no more than 32 devices to one DMX line. For more devices or longer runs, use a DMX splitter or booster.

DMX line



Mode 10CH mode 1: every unit occupies 10 channels from its address. At most 32 units on one line; for more units or longer runs use a DMX splitter. A 120 Ω terminator closes the last DMX OUT.

6 Operation

Setting the DMX address

- The device occupies as many consecutive channels in the DMX universe as the selected DMX mode uses, starting at the set start address.
- Number of channels occupied in the DMX mode “10CH mode 1”: 10.
- Choose start addresses so that the channels of individual devices do not overlap and the last occupied channel does not exceed 512. Devices with the same start address and mode respond identically.
- For several devices in a row in the DMX mode “10CH mode 1”, you can use, for example, the start addresses 1, 11, 21, 31.
- The DMX mode set on the device must match the fixture profile (personality) used in the controller.

7 Functions at a glance

Functions in each DMX mode

	6CH mode 6 channels	10CH mode 1 10 channels
Dimmer		1
Shutter / strobe		2
Color mixing	1–6	3–8 *
Color wheel		9
Effects / macros		9, 10

* The function works only when another channel switches it on; see the DMX table.

Color wheel

1 Color 1: Open
DMX 0–5

2 Red
DMX 6–10

3 Green
DMX 11–15

4 Blue
DMX 16–20

5 Cyan
DMX 21–25

6 Magenta
DMX 26–30

7 Yellow
DMX 31–35

8 Light red
DMX 36–40

9 Light green
DMX 41–45

10 Light blue
DMX 46–50

11 Orange
DMX 51–55

12 Mint
DMX 56–60

13 Sky blue
DMX 61–65

14 Light cyan
DMX 66–70

15 Light magenta
DMX 71–75

16 Light yellow
DMX 76–80

17 White
DMX 81–85

18 9000K
DMX 86–90

19 6500K
DMX 91–95

20 5600K
DMX 96–100

21 5000K
DMX 101–105

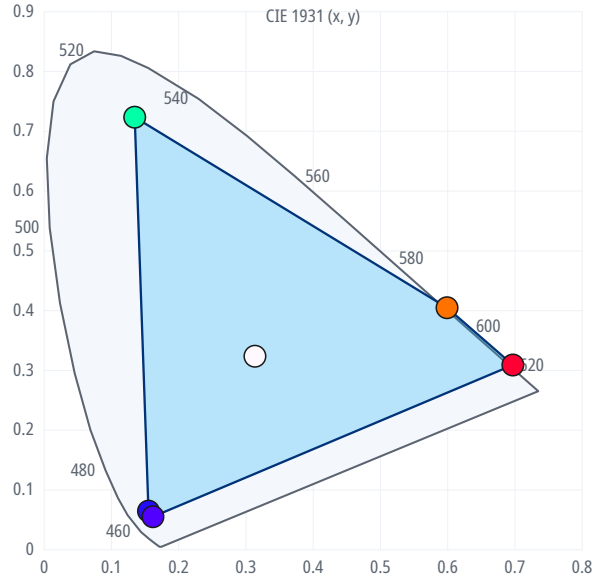
22 4500K
DMX 106–110

23 3200K
DMX 111–115

24 2500K
DMX 116–120

25 2200K
DMX 121–126

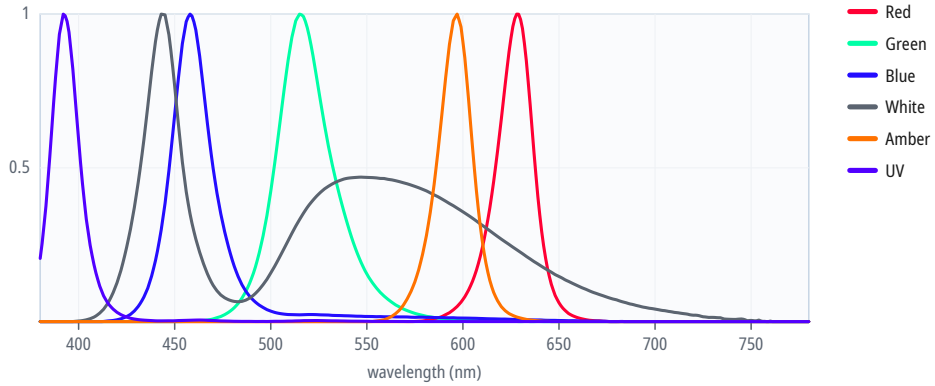
LED colors and the colors they mix



LED	x	y	nm
Red	0.697	0.309	628
Green	0.135	0.724	515
Blue	0.155	0.065	458
White	0.313	0.324	
Amber	0.599	0.405	597
UV	0.162	0.055	392

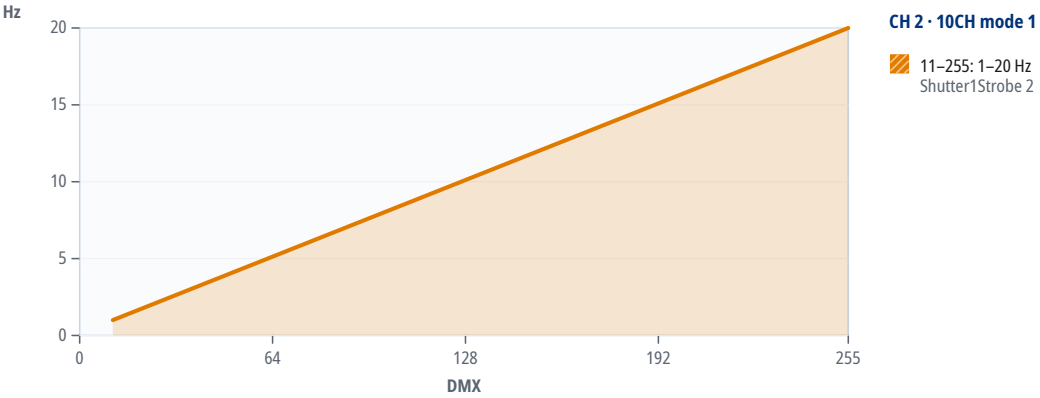
The shaded area holds the colors the LEDs can mix; the dots are the LED colors the GDTF file states.

Spectra of the light sources



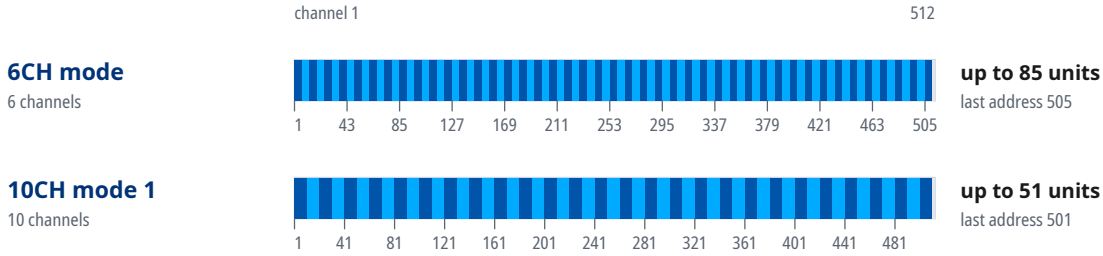
Relative spectrum of each light source as the GDTF file states it; each curve is scaled to its own maximum.

Strobe rate



8 DMX channels

Units in one DMX universe



Start addresses of 20 units in the mode “10CH mode 1”

Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	51	11	101	16	151
2	11	7	61	12	111	17	161
3	21	8	71	13	121	18	171
4	31	9	81	14	131	19	181
5	41	10	91	15	141	20	191

Mode 6CH mode

The GDTF file gives these values for a console's Highlight function: CH 1 Red 255, CH 2 Green 255, CH 3 Blue 255, CH 4 White 0, CH 5 Amber 0, CH 6 UV 0.

CH	Function	DMX	Description
1	Red	0	Min
		1–254	Min ... Max
		255	Max
2	Green	0	Min
		1–254	Min ... Max
		255	Max
3	Blue	0	Min
		1–254	Min ... Max
		255	Max
4	White	0	Min
		1–254	Min ... Max
		255	Max
5	Amber	0	Min
		1–254	Min ... Max
		255	Max
6	UV	0	Min
		1–254	Min ... Max
		255	Max

Mode 10CH mode 1

If the device receives DMX in this mode but gives no light, check these channels: CH 1 Dimmer above 0; CH 2 Shutter at 0–10 “Open”. The GDTF file gives these values for a console's Highlight function: CH 1 Dimmer 255, CH 2 Shutter 0, CH 3 Red 255, CH 4 Green 255, CH 5 Blue 255, CH 6 White 0, CH 7 Amber 0, CH 8 UV 0, CH 9 Colors 0.

CH	Function	DMX	Description
1	Dimmer	0	Closed
		1–254	Closed ... Open
		255	Open
2	Shutter	0–10	Open
		11	Min strobe - 1 Hz
		12–23	Min strobe - 1 Hz ... 2 Hz
		24	2 Hz
		25–62	2 Hz ... 5 Hz
		63	5 Hz
		64–126	5 Hz ... 10 Hz
		127	10 Hz
		128–190	10 Hz ... 15 Hz
		191	15 Hz
		192–254	15 Hz ... Max strobe - 20 Hz
		255	Max strobe - 20 Hz
3	Red		When CH 9 is 0–5:
		0	Min
		1–254	Min ... Max
		255	Max
4	Green		When CH 9 is 0–5:
		0	Min
		1–254	Min ... Max
		255	Max
5	Blue		When CH 9 is 0–5:
		0	Min
		1–254	Min ... Max
		255	Max
6	White		When CH 9 is 0–5:
		0	Min
		1–254	Min ... Max
		255	Max
7	Amber		When CH 9 is 0–5:
		0	Min
		1–254	Min ... Max
		255	Max
8	UV		When CH 9 is 0–5:
		0	Min

CH	Function	DMX	Description
8	UV (continued)	1–254	Min ... Max
		255	Max
9	Colors	0–5	Color 1: Open
		6–10	Red
		11–15	Green
		16–20	Blue
		21–25	Cyan
		26–30	Magenta
		31–35	Yellow
		36–40	Light red
		41–45	Light green
		46–50	Light blue
		51–55	Orange
		56–60	Mint
		61–65	Sky blue
		66–70	Light cyan
		71–75	Light magenta
		76–80	Light yellow
		81–85	White
		86–90	9000K
		91–95	6500K
		96–100	5600K
		101–105	5000K
		106–110	4500K
		111–115	3200K
		116–120	2500K
		121–125	2200K
		126–130	Macro 1
		131–135	Macro 2
		136–140	Macro 3
		141–145	Macro 4
		146–150	Macro 5
		151–155	Macro 6
		156–160	Macro 7
		161–165	Macro 8
		166–170	Macro 9
		171–175	Macro 10
		176–180	Macro 11
		181–185	Macro 12
		186–190	Macro 13
		191–195	Macro 14
		196–200	Macro 15

CH	Function	DMX	Description
9	Colors (continued)	201–205	Macro 16
		206–210	Macro 17
		211–215	Macro 18
		216–220	Macro 19
		221–225	Macro 20
		226–230	Macro 21
		231–235	Macro 22
		236–240	Sound control 1
		241–245	Sound control 2
		246–250	Sound control 3
		251–255	Sound control 4
10	Color Macro Speed		When CH 9 is 6–125:
		0	Open
		1	Fast pulse
		2–254	Fast pulse ... Slow pulse
		255	Slow pulse
			When CH 9 is 126–235:
		0	Fast change
		1–254	Fast change ... Slow change
		255	Slow change
			When CH 9 is 236–255:
		0–255	

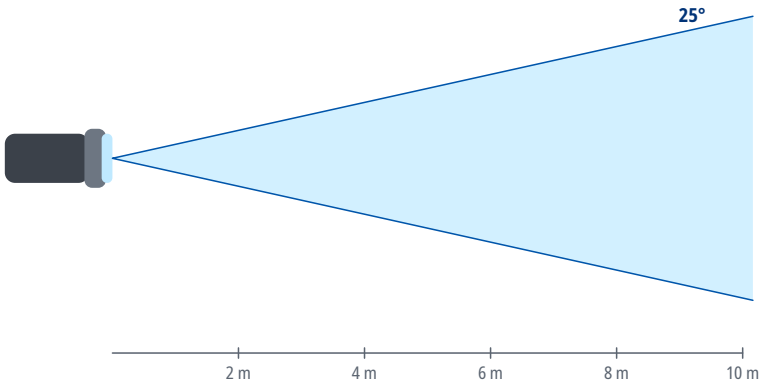
9 Technical specifications

Parameter	Value
Light source	LED
DMX connection	3-pin XLR IN/OUT
Power supply	100–245 V, 50/60 Hz
Power consumption	300 W
Power connectors	NAC3FCA IN, NAC3FCB OUT
Weight	3.4 kg
Operating temperature	0 to 40 °C

Speeds and ranges

Parameter	Value
Strobe frequency	1–20 Hz

Spot diameter



Distance	Ø 25°
2 m	0.89 m
4 m	1.8 m
6 m	2.7 m
8 m	3.5 m
10 m	4.4 m
15 m	6.7 m

Spot diameter square to the beam axis, calculated from the beam angle.

10 Maintenance and cleaning

- Before cleaning and maintenance, switch the device off, disconnect it from the power supply and let it cool down.
- Clean the housing with a soft, dry or slightly damp cloth. Do not use solvents, abrasive cleaners or pressure washers, and make sure no liquid gets into the device.
- Clean optical parts (lenses, front glass), if the device has any, with a soft lint-free cloth and a cleaner intended for optics or glass.
- Regularly inspect the housing, cables, connectors and fixings. Have damaged parts replaced by a service center.
- How often to clean depends on the environment; dust, smoke and fog make the device dirty much faster.

11 Troubleshooting

Problem	Remedy
The device does not switch on	Check the supply voltage, the cables and the fuse, if the device has one.
The device does not respond to DMX	Check the start address, the selected DMX mode and whether it matches the profile in the controller, the cable connection to DMX IN, and the controller output (universe).
The device behaves erratically or flickers	Check the terminator at the end of the line, the condition and wiring of the cables (shield on pin 1 only), the number of devices on the line (32 at most), and that the line is not split without a splitter.
Only some devices on the line respond	Check the cable and connectors between the last working and the first non-working device, and make sure all devices on the line are switched on.
Devices respond to the wrong channels or affect each other	Check that the addresses do not overlap and that the DMX mode on the devices matches the patch in the controller.
The device or the connected load does not light up although it receives DMX	Check the values of the dimmer, shutter and strobe channels against the DMX channel table. For the DMX modes for which the sources state it, the chapter DMX channels gives under the mode's heading which channels must be open.

12 Disposal

The crossed-out wheeled bin symbol on the product, in the manual or on the packaging means that the product must not be disposed of with unsorted household waste at the end of its life.

Take the end-of-life equipment to a collection point, for example a municipal collection site or a retailer. Proper disposal enables materials to be recycled and helps prevent possible negative effects on the environment and human health.

Follow the regulations applicable in your country; in the Czech Republic, take-back is governed by Act No. 542/2020 Coll., on End-of-Life Products.

Recycle the packaging materials according to their type.