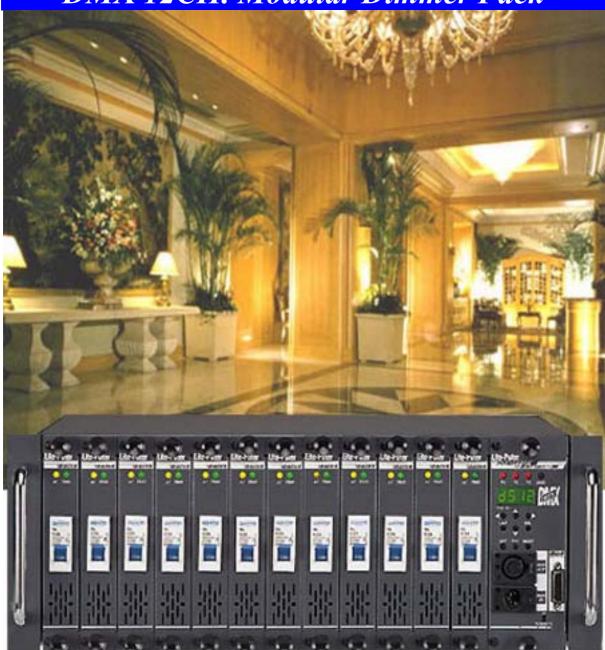
DX-1220







DMX 12CH. Modular Dimmer Pack



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The regulation of safe usage:

Setting for dimmer or switch on / off:

Individual channel must be set dimming or switching function before the load switch (circuit breaker) turns on.

The non-dimming lamp may be damaged in dimming function. Please refer section 5-2.

The regulation of load.

To ensure the using time of DX-1220, we suggest you to refer to below statements about the loading volume.

DX-1220 is normally settled in a rack, so the rack must be airy. If not, the inner will be overheat and then DX-1220 will shut down or can't operate correctly.

- Maximum output of individual channel is 25A For the moments testing. (about 10 minutes.)
- Output of individual channel ≤20A:For many hours . (It's used for a theater or a stage.)
- Output of individual channel ≤12A:
 Continue working for the whole years. (It's used for hotels or restaurants.)

Usage Environment

- 1. Indoor temperature: uder 35°c
- 2. The inner temperature of rack should not be over 45°c
- 3. Humidity: 40% --- 80%

Dimming lamp cotrolled by DX-1220:

Incandescent lamp, Tungsten-halogen lamp, low-voltage halogen lamp with tranformer.

Non-dimming lamp cotrolled by DX-1220:

Fluorescent lamp, High-pressure mercury lamp, Metal halide lamp, High-pressure/ low-pressure sodium lamp.

Remark:

Lite-Puter offer DX-F02 dimming module for flourecent lamp for dimming.

Chapter 1. Introduction

DX-1220, a digital DMX 12 channels modular power pack. This new sophisticated power pack is ideal and reliable for stage lighting, disco lighting, as well as architectural lighting.

The Lite-Puter's DX-1220 is just not another ordinary power pack, but has the versatility to meet your needs plus more. The smoothest lighting effects in its class as well as it's quick maintenance makes the DX-1220 an ideal power pack.

You will be pleased with not only the ability to change a module without turning off all power, but also the ability to remove any amount of modules without removing the whole unit. The DX-1220 has a variety of functions and testing keys to help the user get maximum usage.



1-1 Features

- It's suitable for theaters, stages, and architectural lighting system.
- It can be accepted either DMX-512 signal or Analog 0-10V DC signal.
- Auto Frequency tracking: 45 --- 63Hz can be adjusted automatically.
- Digital dimming: Each channel can be set in dimming or in switch.
- Square law and Linear dimming curve can be chosen.
- Dimming test for each channel or all channles.
- 100-120 VAC / 200-240 VAC can be changed automatically.
- Maxiumum waltage limit setting.
- LED displays DMX address and voltage, dimming level and temperature.
- Each or all channels can be set warm-up 0---6.0% to protecting lamps.
- 6 scenes memorized.
 (It's used for architectural lighting system with CP-2A.)

1-2 Structure

■ Modular design:

It is easy to replace, repair and change each independent module and update software in DP-5 CPU interface.

- 25A magnetic circuit breaker on each P-27.
- **■** Four temperature-controlled fans.

When the internal temperature is over 37° C, the fans start to work 1 minute and stop 1 minute in turn;

over to 41°C, the fans turn continuously;

over 75°C, all output will be stopped until the temperature goes down 70°C.

■ SSR :40A/600V (75°C) Itrms=40A Itsm=350A / 60HZ , 300A / 50HZ (25°C) According with UL 81734

1-3 Speciafication

- AC INPUT:100V-120V / 200V-240V, 45-63HZ
 3 phases 4 wires or single phase 3 wires.
- LOAD: 20A MAX output per channel
- DMX signal (5 pin XLR) : DMX512 / 1990
- DMX signal input channel: 512 channels
- DMX signal input connector: XLR 5-pin
- Analog signal input valtage: 0-10V DC
- Analog signal input channel (D TYPE 15pin): 12 channels
- Analog signal connector : D TYPE connector 15 PIN
- Dimension: 19" 4U : 482(L) x 176(H) x 260(D)mm
- Weight: 20.5 KG

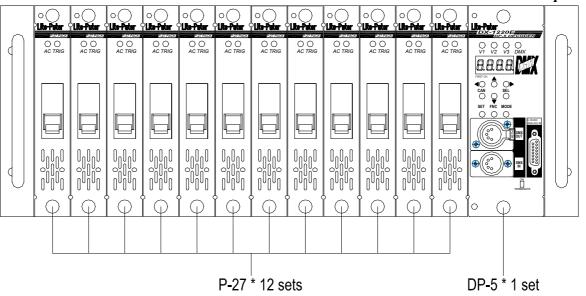


Chapter 2. Installation and function introduction

2-1 Installation

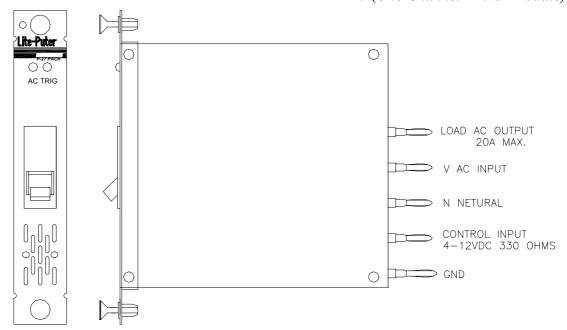
DX-1220 is composed of 12 sets "P-27" (one channel module) and 1 set of "DP-5" (DMX interface). The modular design is for easy to replace, repair and change update software fast.





2-2 The main function of P-27

P-27 (One Channel Driver Module)



5 Lite-Puter

P-27

- 1. Unlock / lock knob: pull-unlock, push-lock.
- 2. AC output indicator
- 3. Trig indicator.
- 4. 25A magnetic circuit breaker
- 5. Ventilator

Specifications:

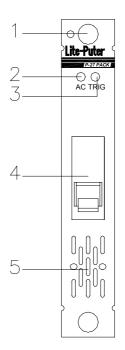
■ AC input : 100 --- 240VAC

■ AC output : 20A MAX

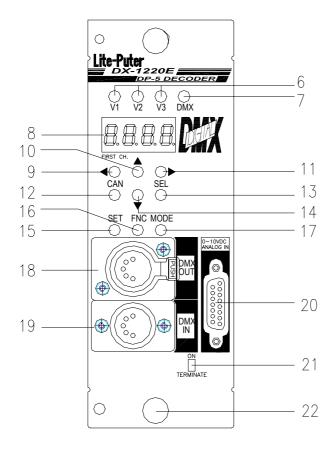
■ Control input : 4 --- 12VDC

■ Dimension: 30 * 176 * 192 mm (W * H * D)

■ Weight: 0.92 Kg



2-3 Introduction of DP-5



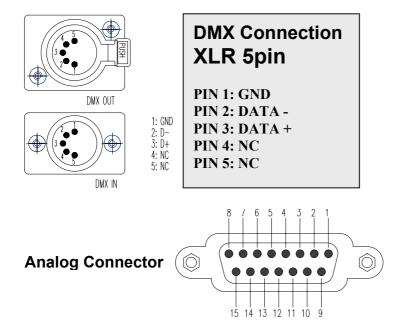
- (6) Phase input indicators
- (7) DMX signal input indicator
- (8) LED display
- (9) button
- (10) **◆** button
- (11) **▶** button
- (12) CANCEL button
- (13) SEL / select button
- (14) ▼ button
- (15) SET/ setting button
- (16) FUN / function button
- (17) MODE button
- (18) 5 PIN DMX "OUT" connector
- (19) 5 PIN DMX "IN" connector
- (20) 0-10VDC connector
- (21) Terminate switch
- (22) Unlock / lock knob: pull-unlock push-lock

2-4 Connection of DMX & ANALOG

The DP-5 is photo isolated from DMX signal input; data transfer is done by photo coupler.

CAUTION:

For using 5 pin XLR plug, do not connect PIN 1 to the housing of the plug.

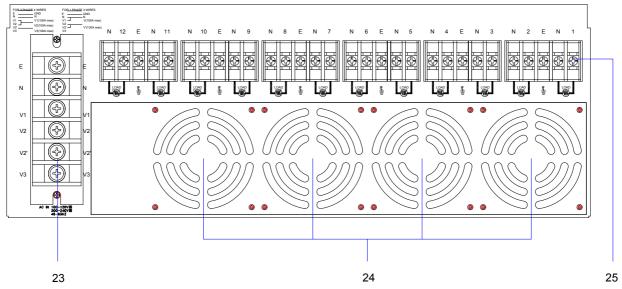


Analog Connection D-type 15pin PIN 1: CH-1 PIN 2: CH-2 PIN 3: CH-3 -

PIN 12: CH-12 PIN 13: NC PIN 14: DC OUTPUT +12V / 100mA

PIN 15: GND

2-5 REAL PANEL



(23) AC Main power input terminal 3 phases 4wires.

(Max. 150A for each connecting point)

- (24) Temperature controlled fans.
- (25) Load output terminal (Max. 30A for each connecting point)

7



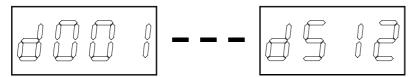
Chapter 3. MODE

Press "MODE" key ,DX-1220 will offer 3 operation modes: "DMX" , "ANALOG" and "OFF" mode.

3-1 DMX mode

In the DMX mode, DX-1220 will accept DMX-512 dimming signal input also analog 0 --- 10VDC signal.

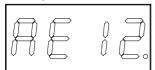
Press **"MODE"** key to choose **DMX mode**, the LED will display the selected address of DMX as follows,and then press **"SEL"** key to confirm.



3-2 ANALOG mode

In the ANALOG mode, DX-1220 will only accept ANALOG signal input.

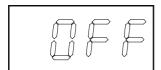
Press "MODE" key to choose ANALOG mode, the LED will display as follows, and then press "SEL" to confirm.



3-3 OFF mode

In the OFF mode, DX-1220 will not accept any signal.

Press "MODE" key to choose OFF mode, the LED will be display as follows, and then press "SEL" to confirm.



When system is turned on, memory resets to last selected mode prior to turning off. For example, if "OFF" mode was selected, then "OFF" mode continues when system is turned on.



3-4 How to set the start address of channels

Operation:

Press "MODE" key to choice **DMX mode**, and then press the assist key to confirm the correct start address of DMX channels.

Assist key:

Press []: Increase channel
eg: Led display from d 0 0 1 to d 0 0 2.

Press [•]: Decrease channel
eg: Led display from d 0 0 2 to d 0 0 1.

Press [^]: Increase 12 channels.

eg: Led display from d 0 0 1 to d 0 1 3.

Press [T]: Restore back to d 0 0 1.

Press [SEL] : Select / Confirmation key.

PS: (1) In the DMX mode, total 512 channels can be set start address by users. (Each DX-1220 has 12 channels output.)

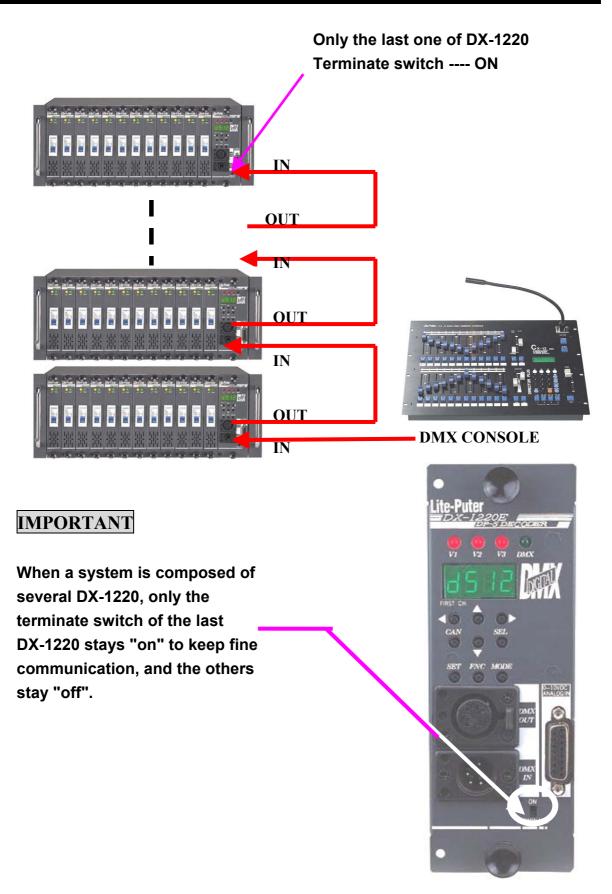
Eg.: If start address is set **d 0 0 1** by users, and DX-1220 has DMX **1st channel ----- 12th channel** .

Eg.: If start address is set d 0 1 3 by users, and DX-1220 has DMX 13th channel ----- 24th channel .

(2) DX-1220 can be set same address over 2 sets of DX-1220.



3-5 How to connect with over 2 sets of DX-1220

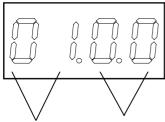


Chapter 4. FUN (FUNCTION)

Press "FUN" key in turn and the LED will display 5 functions as follows:

- (1) Displays dimming level of each channel.
- (2) Set dimming level testing for each channel or all channels.
- (3) Fade in and fade out automatical testing for each channel or all channels.
- (4) Display the AC voltage.
- (5) Display internal temperature.

4-1 Display dimming level of each channel



Auto scan to the dimming level of each channel.

Channel Dimming Level is number 00 -- FL(100%)

Auto scan or by manual is optional.

Indicator Key: By manual

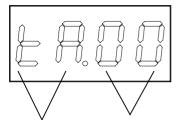
Press []: Increase 1 channel.

Eg.: Led display from 0 1.0.0 to 0 2.0.0

Press [1]: Decrease 1 channel.

Eg.: Led display from 0 2.0.0 to 0 1.0.0

4-2 Dimming level testing for each channel or all channels.



Please turn off DMX signal input (come from the Console) before executing this function. This function can change dimming level of each channel or all channles to test

Test all channels

Dimming level output

Indicator key

Press []: test one channel --Increase 1 channel

eg: Led displays from 01.00 to 02.00.

Press [•]: test one channel -- decrease 1 channel

eg: Led displays from 02.00 to 01.00.

Press [^]: Increase dimming level.

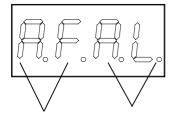
eg: Led displays from 08.00 to 08.FL.

eg: Led displays from 08.FL to 08.00.

Press [CAN]: Function over and restore to last confirmed mode.

- 1. The dimming level of channles can be saved SC=1 --- SC=6, and recalled by CP-2 control panel. Please refer to section 5-3.
- 2. When a channel is set as non-dimming function, DX-1220 will be started and turn full on when the dimming level is over 51%.

4-3 Fade in and Fade out automatical testing for each channel or all channles



Automatic Fade in and Fade out

All channles

Please turn off DMX signal input before executing this function.



Indicator key :

Press []: auto fade one channel ---- Increase channel.

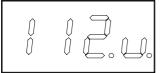
Press []: auto fade one channel ---- decrease channel.

Press [SEL]: To confirm.

Press [CAN]: Function over and restore to last confirmed mode.

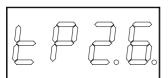
When a channel is set as non-dimming function, it will light when the percent of this channel light over 51%.

4-4 Display the Voltage (Only display the Voltage of V3)



Displays the current AC voltage and will change to 200 - 240VAC automatically if the AC input is 230VAC.

4-5 Display internal temperature



Internal temperature displayed to prevent from overheat and to control the operation of fans.

- (1) To avoid inhaling dust, the fans controlled by temperature. When the internal temperature is over 37° C, the fans start to work 1 minute and stop 1 minute in turn.
- (3) When the internal temperature is over 75°C, all output will be stopped until the temperature goes down 70°C. In this case, please check if the load are verload and the dimmer rack is stuffy.

Please refer to the regulations of safe usage in page 2.

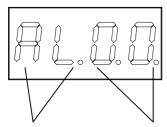


Chapter 5. SET

Press "SET" key in turn and the LED will display 6 functions as follows:

- (1) Set dimmer warm-up 0%---6.0%. (each channel or all channels.)
- (2) Set dimming or switching (non dim) for each channel or all channels.
- (3) 6 memory scenes. (must be connected with CP-2A)
- (4) Set fader time: 0.1 SEC.----30 MIN.
- (5) Set Square Law or Linear dimming curve.
- (6) Maximum waltage limit setting.

5-1 Set dimmer- warm up 0 %--- 6.0 %



All channles

Dimmer-Warm up value 0 ~ 6.0%

Indicator key :

Press []: Increase channels.

Press [1]: Decrease channels.

Press [^]: Increase dimmer- warm up value.

Press [CAN]: Function over and restore to last confirmed mode.

- 1. Warm up fuction will not available, If any channel is setted to switching. (Non dim)
- 2. Please note: the original pre-heating value is set to 100%.

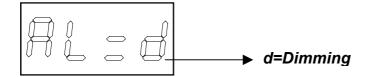
5-2 Set dimming or switching for each channel or all channels.

Dimming / Non-dimming setting:

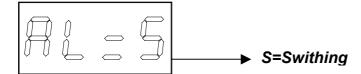
Before operating the dimmer, please check the features of your loads if they can dim or not, for those lamps which can not dim such as flourescent lamp, high-pressure mercury lamp, high pressure / low pressure sodium lamp or some fixtures with motors; please set the channel as non-dim. Non-dim loads may be destroyed if they are set as dimmable.

When a channel is set as non-dimming function, the light will be 100% bright, When the input is over 50% and it will be switched off when the input is under 25%. This delay function is to prevent the twinkling situation.

When a channel is set as non-dimming function, this channel doesn't have the pre-heat and output waltage llimit setting function.



All channles are set with dimming.



All channles are set with switching.



All channles can be set dimming or switching.

Indicator key set each channel:

Press []: Increase channel.

Press [•] : Decrease channel.

Press [^]: Switching (non dim).

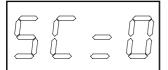
Press [T]: Dimming..

Press [SEL]: Select / Confirmation key.



Please note: the original setting of all channels is dimming function.

5-3 6 memory scenes -- be use for architectural lighting with CP-2A



DX-1220 can be set 6 memory scenes to control architectural lighting by connecting with CP-2A. (Architectural lighting control panel of Lite-Puter)

Indicator key :

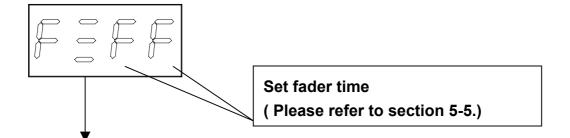
First input the dimming signal to DX-1220 by linking to an external dimming console (DMX / Analog) or a self-test function, then choose SC=0 or SC=1 --- SC=6

Press [SEL]: Select / Confirmation key.

- 1. SC=0 will execute automatically when DX-1220 power is switched on.
- 2. SC=1 --- SC=6 have to be executed by an external CP-2A.
- 3. The fade-in / fade-out time can be set by section 5-4.

5-4 Set fader time

(be Use for architectural lighting)



≡: All channels

1: 1st channel

2: 2th channel

3: 3th channel

4: 4th channel

5: 5th channel

6: 6th channel

7: 7th channel

8: 8th channel

9: 9th channel

A: 10th channel

B: 11th channel

C: 12th channel

Indicator key :

Press []: Increase channels.

Press [1]: Decrease channels.

Press [^] : Extend time.

Press [▼] : Sorten time..

Press [SEL] : Select / Confirmation key.



5-5 The corresponding list of setting fader time(from 00 --- to FL)

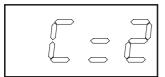
set	50Hz	60Hz	set	50Hz	60Hz	set	50Hz	60Hz	set	50Hz	60Hz	set	50Hz	60Hz	set	50Hz	60Hz	set	50Hz	60Hz	set	50Hz	60Hz
00	NoFade	NoFade	20	01'22	01'08	40	02'43	02'16	60	04'05	03'24	80	05'37	04'41	Α0	12'25	10'21	CO	19'13			26'01	21'41
01	00'03				01'10		02'46		61	04'07	03'26	81		04'51		12'37	10'31	C1	19'25			26'13	21'51
02	00'05			01'27	01'12		02'48	02'20	62	04'10	03'28	82	06'02	05'02		12'50	10'42	C2	19'38	16'22		26'26	22'02
03	00'08			01'29	01'14		02'51	02'22	63	04'12	03'30	83	06'15	05'12		13'03	10'52	C3	19'51	16'32	E3	26'39	22'12
04	00'10		24	01'32	01'17	44	02'53	02'25	64	04'15	03'33	84	06'28	05'23		13'16	11'03	C4	20'04	16'43	E4	26'52	22'23
05	00'13		25	01'34	01'19	45	02'56	02'27	65	04'18	03'35	85	06'40	05'34		13'28	11'14	C5	20'16	16'54	E5	27'04	22'34
06	00'15	00'13	26	01'37	01'21	46	02'59	02'29	66	04'20	03'37	86	06'53	05'44		13'41	11'24	C6	20'29	17'04	E6	27'17	22'44
07	00'18			01'39	01'23	47	03'01	02'31	67	04'23	03'39	87	07'06	05'55		13'54	11'35	C7	20'42		E7	27'30	22'55
08	00'20			01'42	01'25	48	03'04	02'33	68	04'25	03'41	88	07'19	06'06		14'07	11'46	C8	20'55	17'26	E8	27'43	23'06
09	00'23				01'27		03'06	02'35	69	04'28	03'43	89		06'16		14'19	11'56	C9	21'07			27'55	23'16
0A	00'26			01'47	01'29		03'09	02'37		04'30	03'45	8A		06'27		14'32	12'07		21'20			28'08	23'27
0B	00'28	00'23		01'50	01'31		03'11	02'39		04'33	03'47	8B		06'37		14'45	12'17		21'33	17'57		28'21	23'37
0C	00'31			01'52	01'34		03'14	02'42	6C	04'35	03'50	8C	08'10	06'48		14'58	12'28		21'46	18'08	EC	28'34	23'48
0D	00'33	00'28		01'55	01'36		03'16	02'44	6D	04'38	03'52	8D	08'22	06'59		15'10	12'39		21'58	18'19		28'46	23'59
0E	00'36			01'57	01'38		03'19	02'46	6E	04'41	03'54	8E	08'35	07'09		15'23	12'49	CE	22'11	18'29		28'59	24'09
0F	00'38		2F	02'00	01'40		03'21	02'48	6F	04'43	03'56	8F	08'48	07'20		15'36	13'00	CF	22'24	18'40	EF	29'12	24'20
10	00'41	00'34	30	02'02	01'42		03'24	02'50	70	04'46	03'58	90		07'31		15'49	13'11	D0	22'37		F0	29'25	24'31
11	00'43	00'36	31	02'05	01'44	51	03'27	02'52	71	04'48	04'00	91	09'13	07'41		16'01	13'21	D1	22'49	19'01	F1	29'37	24'41
12	00'46	00'38	32	02'08	01'46	52	03'29	02'54	72	04'51	04'02	92	09'26	07'52		16'14	13'32	D2	23'02	19'12	F2	29'50	24'52
13	00'48	00'40	33	02'10	01'48	53	03'32	02'56	73	04'53	04'04	93	09'39	08'02	B3	16'27	13'42	D3	23'15	19'22	F3	30'03	25'02
14	00'51	00'43		02'13	01'51	54	03'34	02'59		04'56	04'07	94	09'52	08'13		16'40	13'53	D3	23'28	19'33	F4	30'16	25'13
15	00'54	00'45	35		01'53	55	03'37	03'01	75	04'58	04'09	95	10'04	08'24		16'52	14'04	D5	23'40	19'44	F5	30'28	25'24
	00'56	00'47			01'55		03'39	03'03		05'01	04'11	96		08'34		17'05	14'14	D6	23'53	19'54	F6	30'41	25'34
					01'57									08'45									25'45
					01'59		03'44	03'07		05'06		98		08'56		17'31		D8	24'19			31'07	25'56
					02'01		03'47			05'09		99		09'06		17'43						31'19	26'06
	01'06	00'55		02'28	02'03		03'50	03'11		05'11	04'19			09'17		17'56	14'57		24'44			31'32	26'17
			3A 3B																			31'45	
	01'09		3B	02'30	02'05		03'52			05'14				09'27		18'09	15'07		24'57	20'47			26'27
				02'33	02'08		03'55	03'16		05'16				09'38		18'22			25'10	20'58		31'58	26'38
	01'14		3D	02'36	02'10		03'57	03'18		05'19	04'26			09'49		18'34	15'29	DD	25'22	21'09		32'10	26'49
			3E	02'38	02'12	5E	04'00	03'20	7E 	05'21	04'28	9E		09'59		18'47	15'39	DE	25'35	21'19	FE 	32'23	26'59
F	01'19	01'06	3F	02'41	02'14	5F	04'02	03'22	7F	05'24	04'30	9F	12'12	10'10	RF	19'00	15'50	DF	25'48	21'30	FF	32'36	27'10

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5-6 Set "square law " or " linear" dimming curve

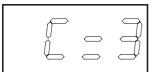
Square law dimming curve:C2

It can react the linear relationship between dimming scale and output waltage, so it would be easy to evaluate the precision of the output waltage.



Linear dimming curve:C3

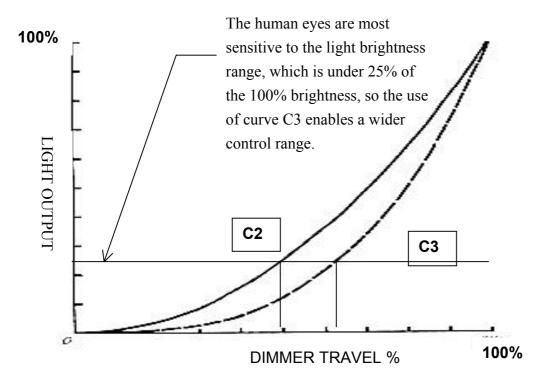
This is suited for the stage lighting. The output voltage value and the controlling value are in linear ratio, and it enables a wider control range in low brightness, so the professional lighting designers prefer to this.



Indicator key:

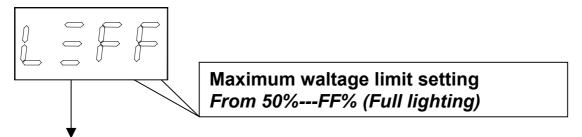
Press [↑]: Change dimming curve
Press [▼]: Change dimming curve
Press [SEL]: Select / Confirmation key

NOTE: Original setting is C3.





5-7 Maximum Output Waltage Limit Setting:



≡: All channels

1: 1st channel

2: 2th channel

3: 3th channel

4: 4th channel

5: 5th channel

6: 6th channel

7: 7th channel

8: 8th channel

9: 9th channel

A: 10th channel

B: 11th channel

C: 12th channel

Indicator key :

Press []: Increase channels.

Press [•] : Decrease channels.

Press [^]: Increase percentage of waltage

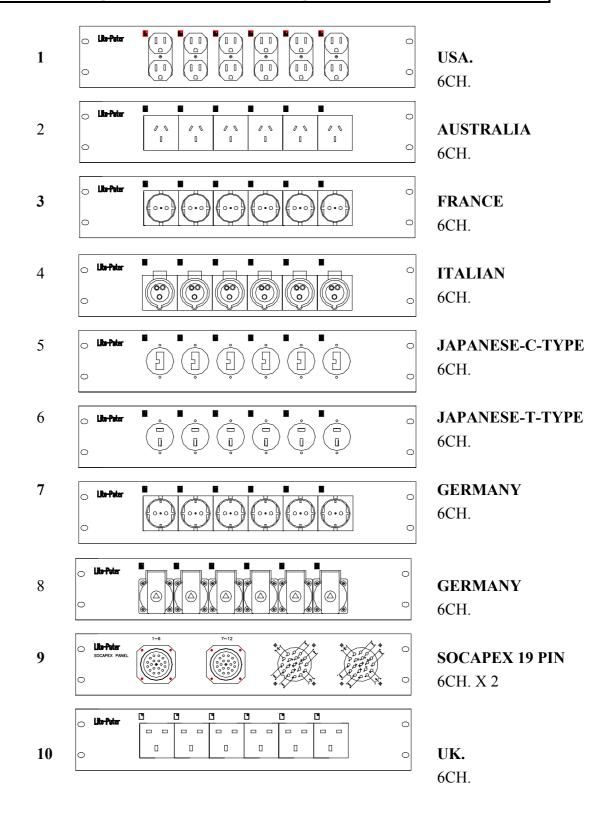
Press [T]: Decrease percentage of waltage.

Press [SEL]: Select / Confirmation key.

- 1. When a channel is set as non-dimming function, this channel doesn't have the pre-heat and output waltage llimit setting function.
- 2. The original setting of all channels is **FF**; means 100% output.



Chapter 6. Output Socket Panel (Option)



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