# OBSTAFLASH HI LED LIGHTING SYSTEM

*INSTALLATION AND OPERATION GUIDE*

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**January 2021**

| DESCRIPTION | COLOR | POWER SUPPLY | P/N |
|---|---|---|---|
| OFP-CAB-8E-RW-240-HIA | White | 120-230 V – 50/60Hz | 113782RW-8E |
| OFP-120-RW-2L-HIA-L4 | White | | 113781L4 |
| OFC-CTR | | 120-230 V – 50/60Hz | 113625L |
| ICAO PHOTOCELL 500/50 LUX | | 48 Vdc | 113135 |

This list is not exhaustive and some options can be added for synchronization and remote alarm control (GPS for wireless synchronization, optical cable for synchronization and/or GPRS interface for remote monitoring) and combination of medium and high intensity system.

# BE CAREFUL

Led projectors in this lighting system Produce brilliant flashes of light which can result in temporary or permanent eye damage. **DO NOT LOOK DIRECTLY AT THE PROJECTOR WHILE IT IS IN OPERATION.**

## WARRANTY

OBSTA warrants the equipment described in the instruction manual and sold to purchaser to be free from defects in material and workmanship at the time of shipment. OBSTA's liability under this warranty being limited to repairing or replacing, at OBSTA's option, items which are returned to it prepaid within twenty four (24) months from shipment to the original Purchaser, or twelve months from commissioning, and found, to OBSTA's satisfaction, to have been defective. In no event shall OBSTA be liable for consequential damages. NO PRODUCT IS WARRANTED AS BEING FIT FOR A PARTICULAR PURPOSE AND THERE IS NO WARRANTY OF MERCHANTABILITY. This warranty applies only if: (I) the items are used solely under the operating conditions and in the manner recommended in OBSTA's instruction manual, specifications, or other literature; (II) the items have not been misused or abused in any manner or repairs attempted thereon; (III) written notice of the failure within the warranty period is forwarded to OBSTA and the directions received for properly identifying items returned under warranty are followed; and (IV) such return notice authorizes OBSTA to examine and disassemble returned products to the extent OBSTA deems necessary to ascertain the cause of failure. The warranties stated herein are exclusive. THERE ARE NO OTHER WARRANTIES, EITHER EXPRESSED OR IMPLIED, BEYOND THOSE SET FORTH HEREIN, and OBSTA does not assume, nor does OBSTA authorize anyone else to assume for it, any other obligation or liability in connection with the sale or use of said products. OBSTA's liability on any claim of any kind, including negligence, for loss or damages arising out of or connected with the manufacture, sale, delivery, repair or use of any equipment or services provided by OBSTA shall in no case exceed the price allocable to the item or service or part thereof which gives rise to the claim.
The integrity and reliability of OBSTA aviation obstruction lighting systems is dependent on the use of OBSTA parts and components. To ensure the optimum performance and reliability of your OBSTA system, it is strongly advised that only components and modules manufactured by OBSTA be used.

## NOTICE

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**WARNING!**

Modifications to the Power Supply are required for certain applications. Documentation to describe these changes may be found at the end of the manual.

## 1.0 - GENERAL INFORMATION

### 1.1 Scope

This manual provides information about the installation, operation, and maintenance of the OBSTAFLASH HI Led High Intensity Obstruction Lighting Systems manufactured by OBSTA. The lighting systems described in this manual are ICAO High intensity type A, for use as high intensity aviation obstruction warning systems.

### 1.2 General Description

The OBSTAFLASH HI Lighting System is led high intensity systems manufactured to comply with ICAO annex 14 chapter 6. Each system consists of 1 beacon covering 120° in azimuth, an associated power supply with integrated controls, an ambient light sensor (photocells) and the interconnecting cable. System components are shown in Figures 1-1 to 1-8 pages 5 to 12.

The OBSTAFLASH HI beacon consists of 8 led projectors made in hard glass and aluminum, and a stainless bracket. Each projector includes 2 white led circuits working in active redundancy: in case one circuit is out of work, the second one keeps on working in the same azimuth, a remote alarm is activated and related luminous indicator goes red.

The stainless power supply contains:

- 
- 9 modular power cards
- 2 command cards to monitor the 8+1 power cards. The command card do have :
    - 8 luminous indicator for the 8 power cards used during day/twilight
    - 1 luminous indicator for the power card for the red circuit used during the night
    - 1 luminous indicator for synchronization signal,
    - 1 luminous indicator for synchronization failure in case no signal is received
    - 1 luminous indicator for general alarm
- all related power circuit (surge protection, switch, DC power, test buttons)
- a main switch and an AC power indicator.

So total is 12 active luminous indicators

The S1 test button allows 3 positions:

- “Up”: remote position, the light is in normal operation
- “Middle”: the light are forced in “day” or “twilight” or “night” mode according to S2
- “Down” remote position, the light is in normal operation

The S2 test button in figure 1-1 page 5 allows 3 positions:

- “Day” position, the light is forced in day mode
- “Twilight” position, the light is forced in twilight mode
- “Night” position, the light is forced in night mode.

**OFP-CAB-8E-RW-240-HIA**
**P/N:113782RW-8E**

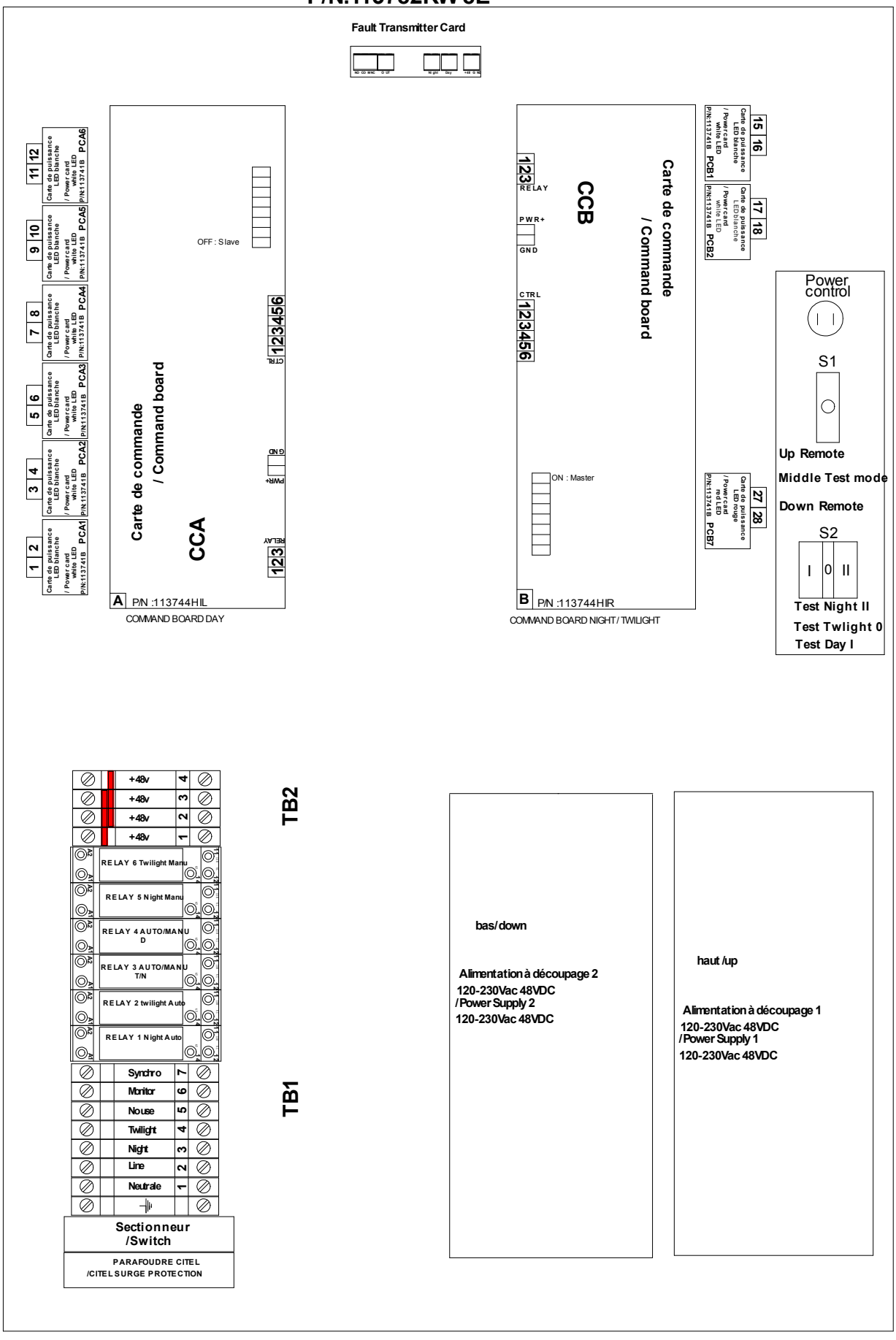



**Figure 1-1. Power supply component locations P/N:113782RW-8E**

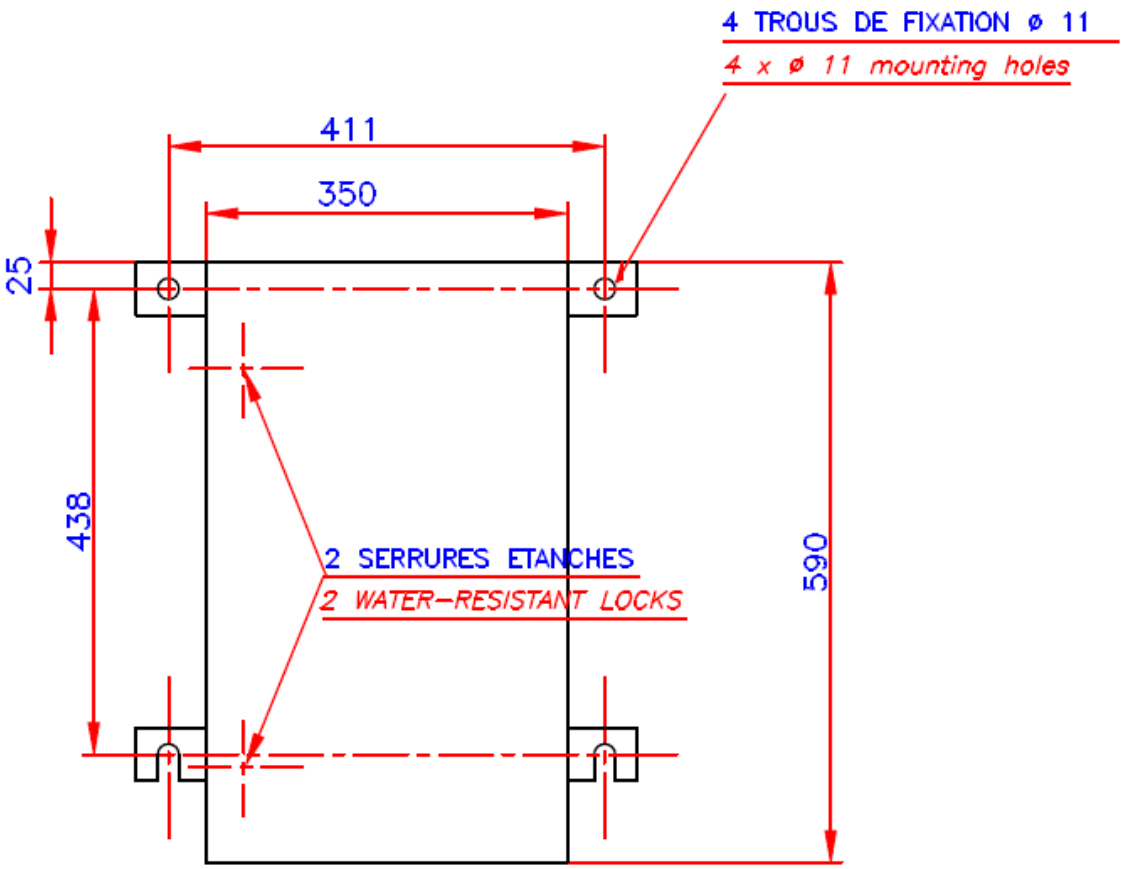



**Figure 1-2 Outline and mouting dimensions Power supply P/N:113782RW-8E**

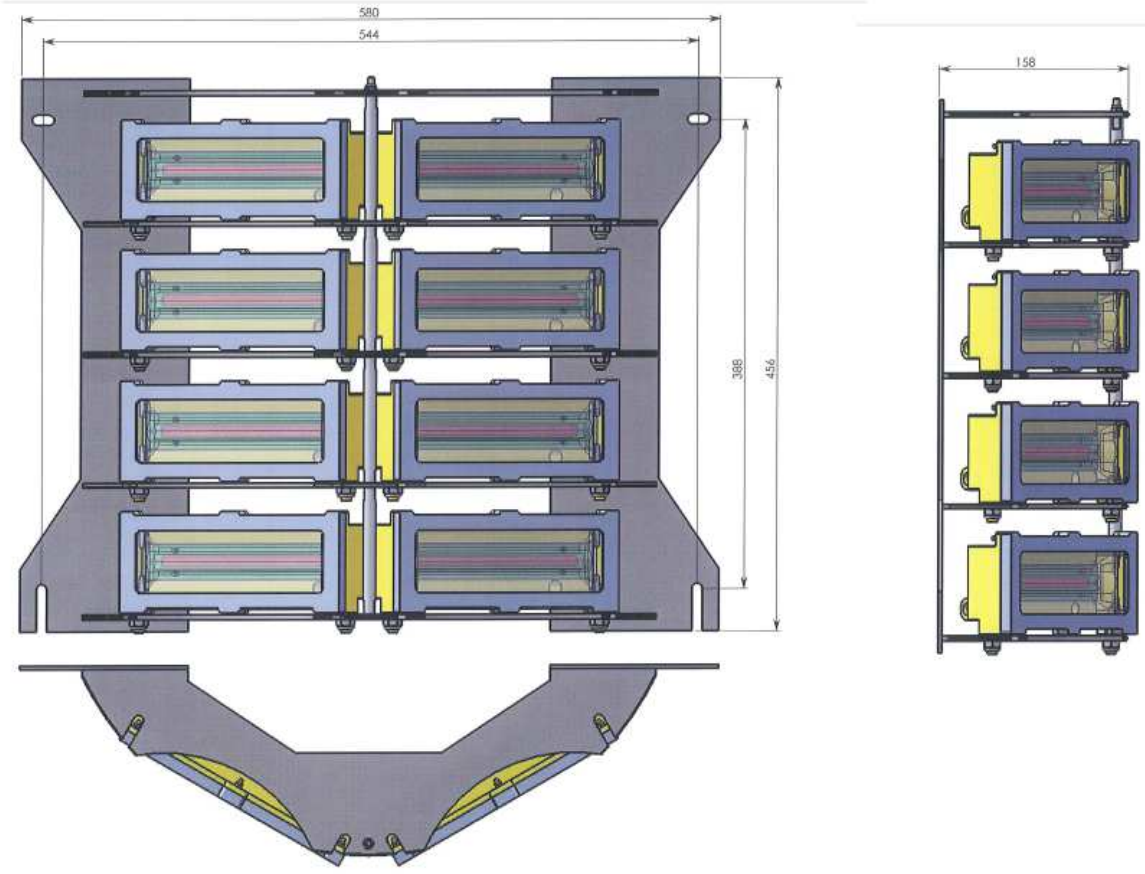



**Figure 1-3 Outline and mouting dimensions HI flashhead P/N:113781L4**

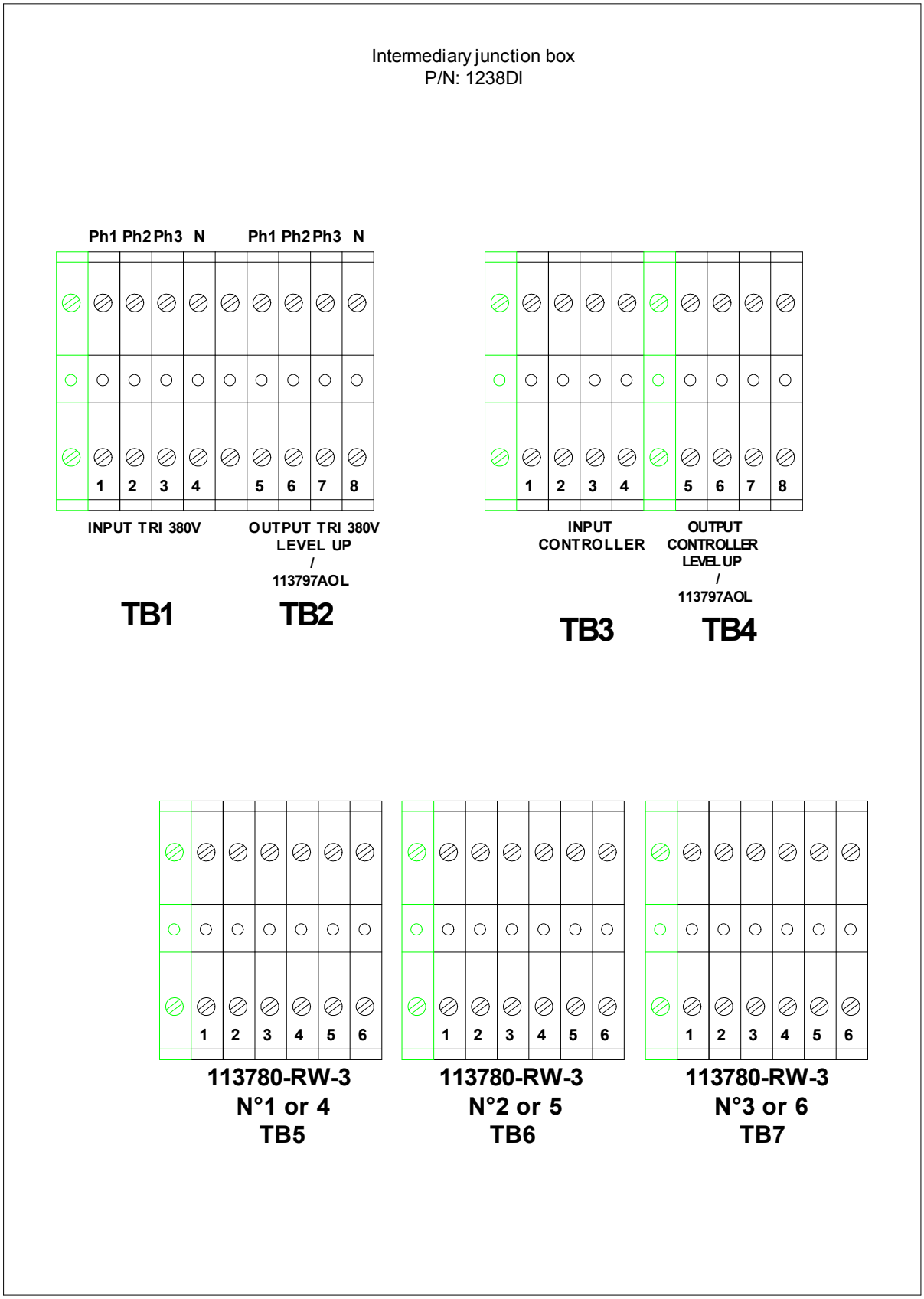
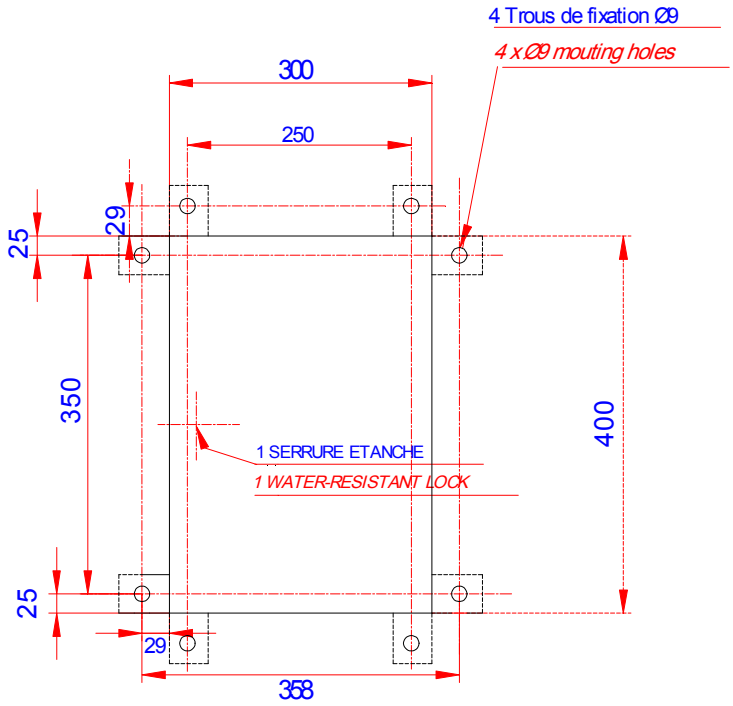
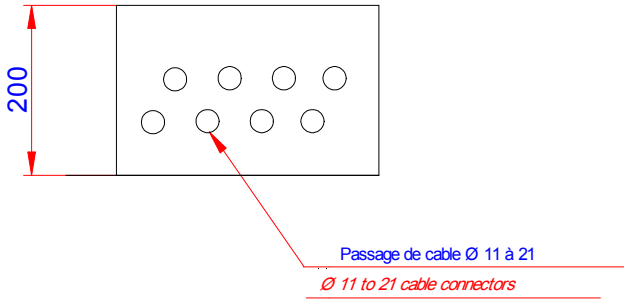



**Figure 1-4. Junction box component locations P/N :1238DI**

*All dimensions are in mm*




FRONT VIEW




BOTTOM VIEW

Matériel : Inox 316L ep. min. 2mm

*Material : Stainless steel thickness min. 2mm*

**Figure 1-5 Outline and mouting dimensions junction box P/N:1238DI**

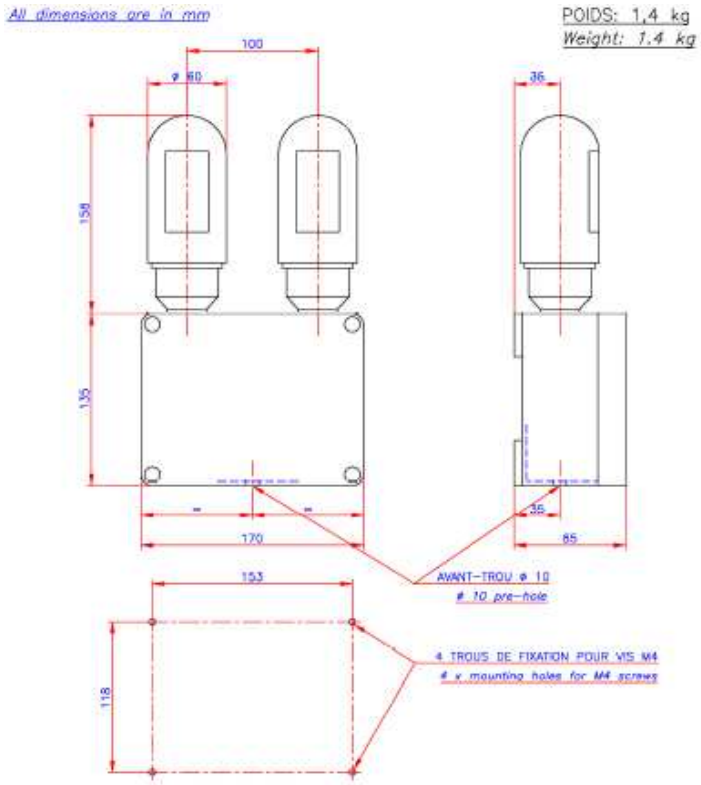



**Figure 1-6 Outline and mouting dimensions Photocell Day/Twilight/Night P/N:113135**

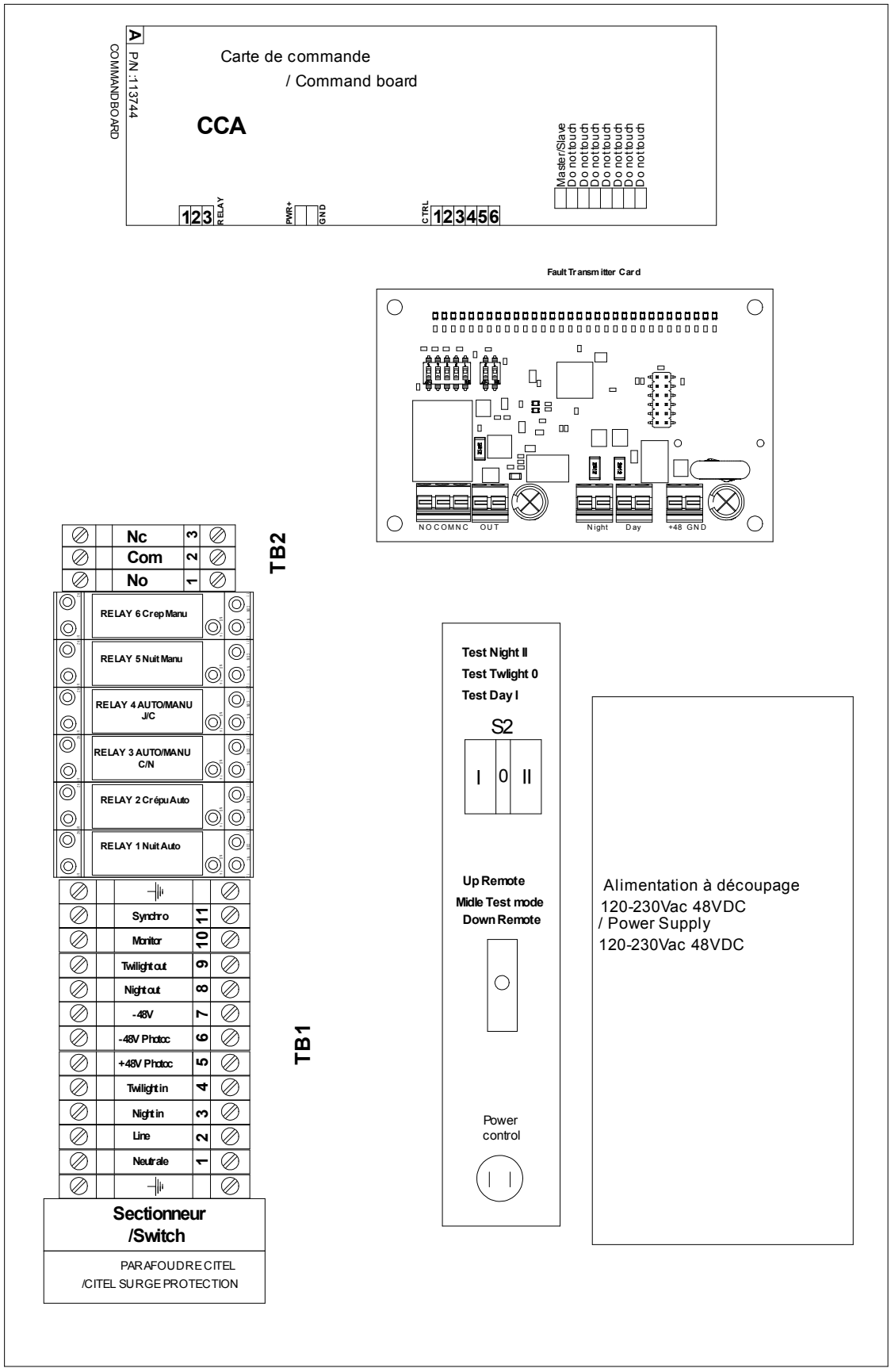



**Figure 1-7. Controller component locations P/N:113625L**

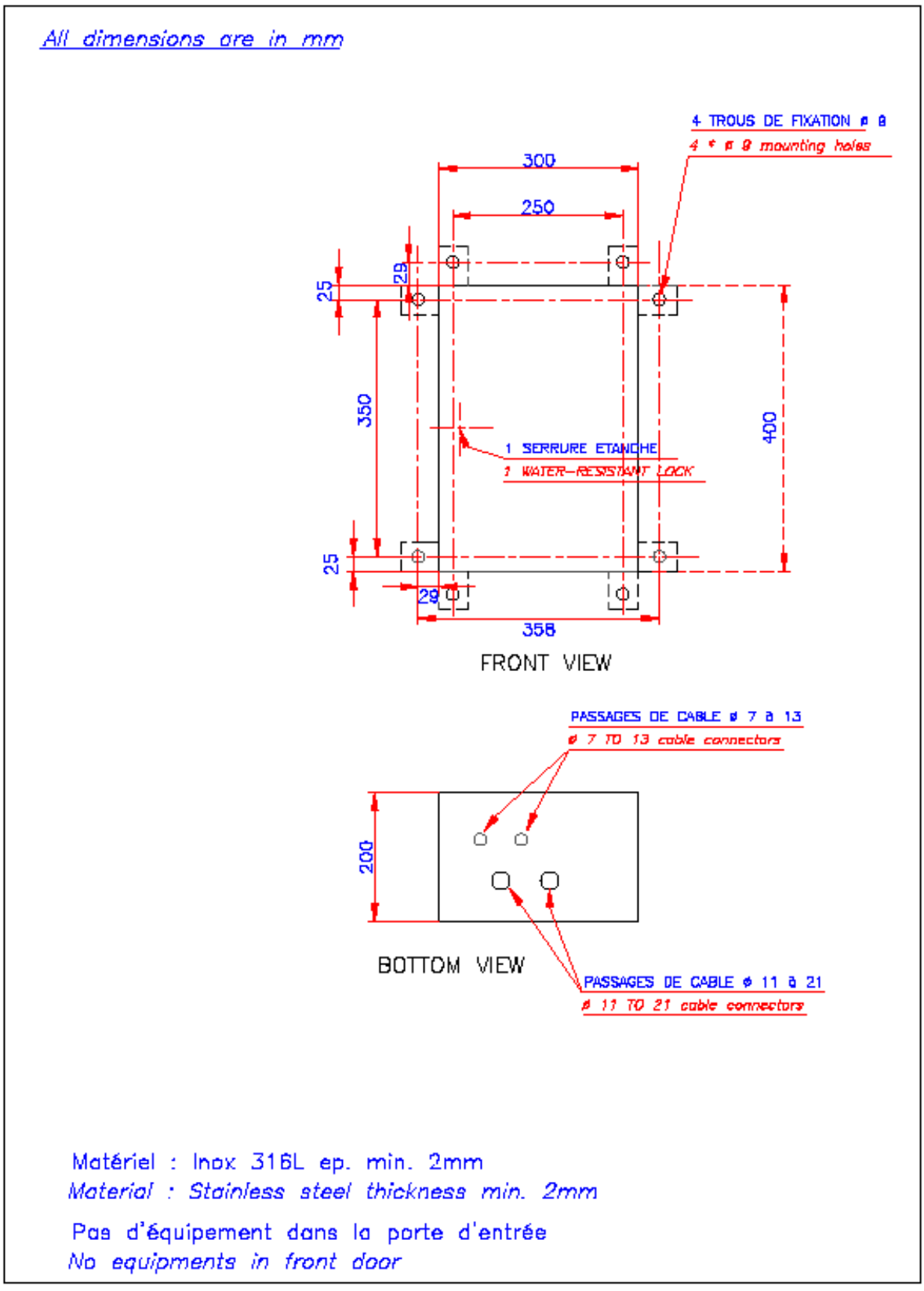



**Figure 1-8 Outline and mouting dimensions Controller P/N:113625L**

## 1.3 SPECIFICATIONS

### 1.3.1 LIGHT OUTPUT

Intensity

Day……..200 000 ±25% effective candelas, single flash
Twilight.....20 000 ±25% effective candelas, single flash
Night.....2 000 ±25% effective candelas, single flash

Beam Pattern.....120º horizontally; 3º min. vertically
Flash Rate: ..... 40 fpm
Master/slave configuration: ..... up to 32 lights can be synchronized
With controller: ..... up to 32 lights can be connected

### 1.3.2 ELECTRICAL INPUT

Power Supply.....110V to 220VAC 50/60Hz
Max wattage……. 1kW

### 1.3.3 MECHANICAL PROPERTIES

Obstaflash
Weight.....15 kg
Dimensions .....w = 158 mm x h = 456 mm x l = 580 mm
Surface Area .....870cm²
Wind Load .....35 kg at 240 Km/h

Power Supply Obstaflash
Weight.....25 kg
Dimensions .....w = 350 mm x h = 590 mm x l = 250 mm

Controller
Weight.....12 kg
Dimensions .....w = 300 mm x h = 400 mm x l = 200 mm

### 1.3.4 OPERATING ENVIRONMENT

Operating Temperature.....-40ºC to +55ºC
Humidity ..... 95% relative humidity

### 1.3.5 SYSTEM OPERATING STATUS INDICATORS

- 1 red indicator for power supply
- On the command card: 12 luminous indicators see figure 1-1
- Fault indication: Relay closure, contact rating of 3A at 220VAC

## SECTION 2 : PRINCIPLES OF OPERATION

### 2.1 Power supply P/N 113742

The main power input is converted in 48VDC through the AC power supply that feeds the 2 command cards and power cards.

### 2.2 Power cards P/N 113741B

The system includes 9 power cards that regulate the current sent to the 16 white led circuits and 1 red led circuit as per figure 2-2:

- 8 power cards for white led circuits: each card regulates the current of 2 white led circuits of the same projector during daytime and twilight;
- 1 power card that regulates the current of the 1 red led circuit during night time; the red led circuit is in serial with 2 projectors.

Those power cards are connected to the command card through connector. The status of the command cards and their respective led circuits are indicated by the luminous indicators D6 to D12 on the command card (figure 2-1 below). Those indicators are normally off and red blinking in case of default.

### 2.3 Command cards P/N 113744L and 113744R

The 2 command cards are powered in 48V

- First command card P/N113744L is used for day only and monitor the power cards of the 6 lower projectors. This command card is switch off during twilight and night mode
- Second command card P/N113744R is used in day, twilight and night mode and monitor the power cards of the 2 upper projectors

Day command card 113744L send an alarm in case more than 3 white circuits are out of order
Twilight/night command card 113744R send an alarm in case 2 circuits are out of order.

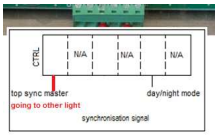
Both those command cards allow to detect the alarm of the complete system with 9 luminous indicators described in figure 2-1,

The second command card P/N113744R allows to define through the dip-switches below
- the color during twilight/night,
- master or slave mode of the system (dipswitch n°1). Without controller or GPS, one command card 113744R must be set up in master mode and all command cards from other flashheads be in slave mode. In case of GPS or external controller is used, all command cards must be set up in slave mode.

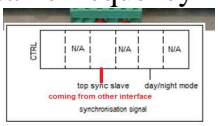
# Note: The configuration of the 2 command cards is done in the factory and shall not be modified by the end-user.

**Dip switches on the command card 113744R**

- Color during night time: dipswitch n°6 « on » -> red color (default setting), « off » -> white color
- when set-up in master mode (dipswitch n°1 on « on »), the command card P/N113744R creates a top sync pulse indicated by D14 sent to second command card 113744L and other flash-heads from terminal 1




• when set-up in slave mode (dipswitch n°1 on « off»), the command card waits for a top sync pulse on terminal 3, D14 also blink at the same frequency




• If no pulse is received from terminal 3, D14 is off and light flashes on its own at 15 fl per minute as per D13

**Warning: In case changing master/slave dipswitch n°1 position, do not forget to change the position on the terminal connection 1 to/from 3 of the pulse wire accordingly on the command card**

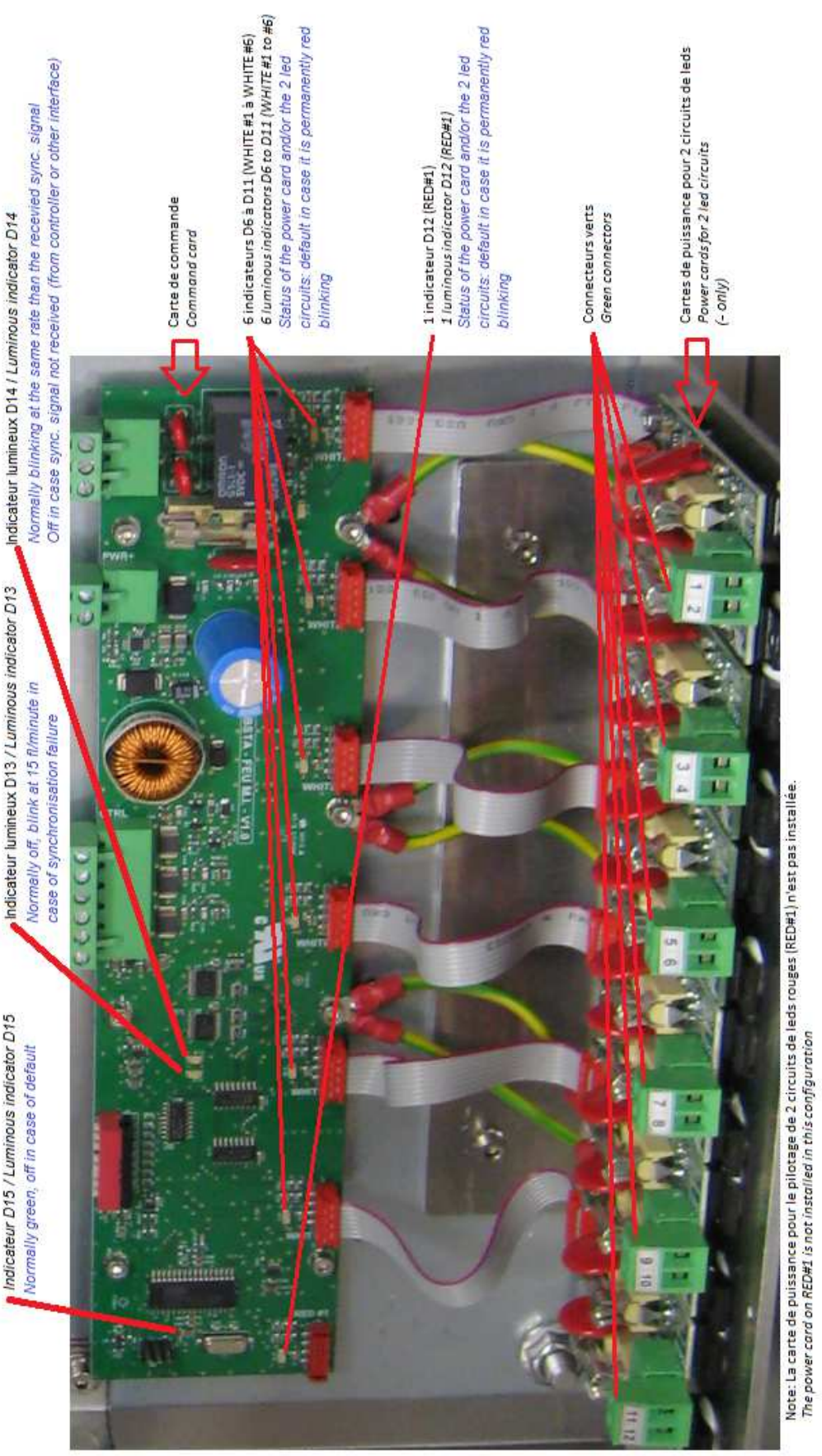



Figure 2-1. Luminous indicators on the command card

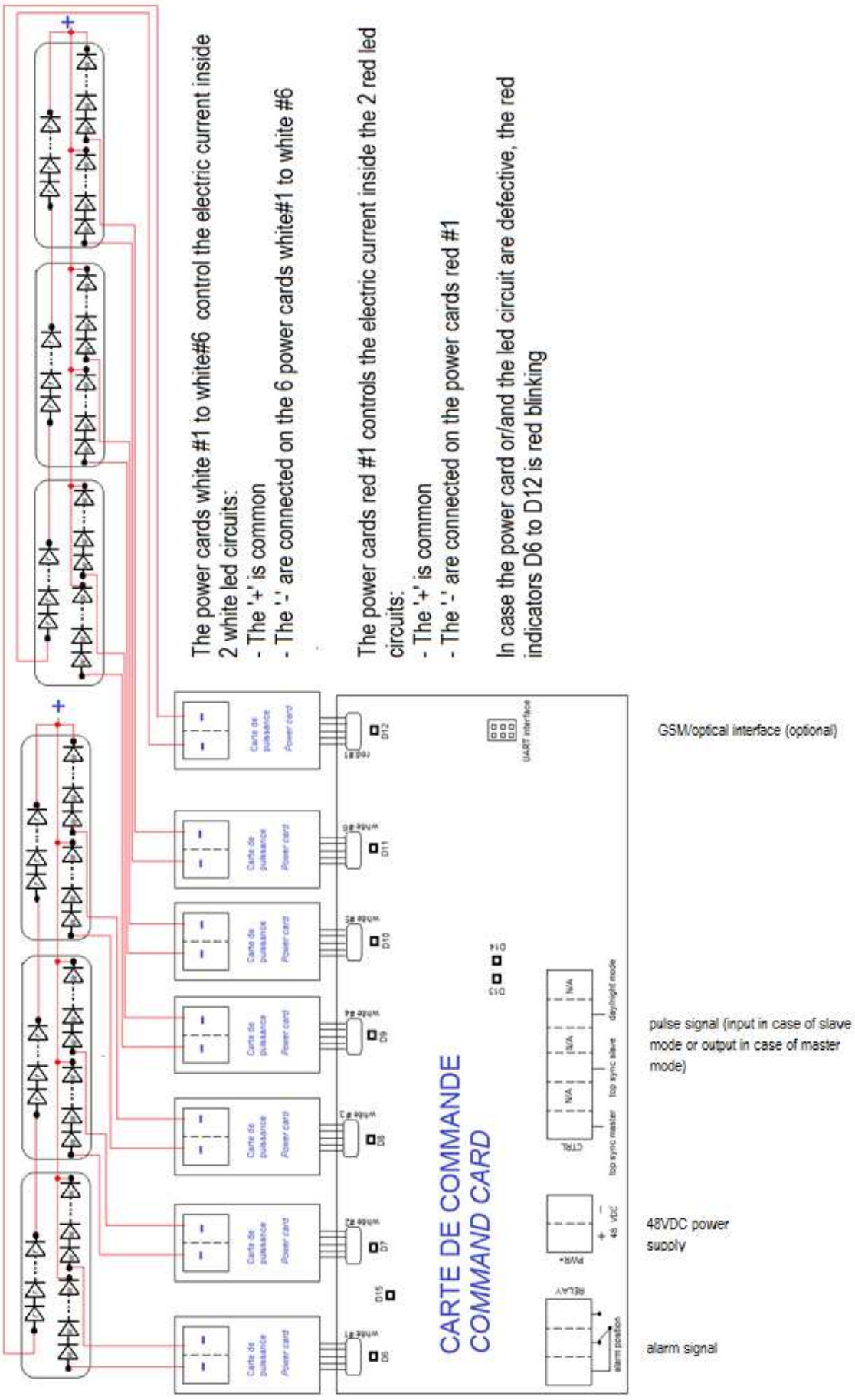



Figure 2-2. Wiring of led circuits on the command card

## SECTION 3.0 – INSTALLATION (wiring diagram 3-1 to 3-5 page 19 to 24)

### 3.1 Unpacking

Carefully unpack each item and remove any internal packing material from the power supply and the obstaflash. Examine each item for obvious physical damage. Report any claims to the carrier immediately. Pertinent data such as installation drawings, schematics, interconnection drawings, and operation manuals are included in the power supply carton.

### 3.2 Mounting and Preparation

#### 3.2.1 OBSTAFLASH HI beacon

Normally almost 3 obstaflash beacons are mounted at 120° around the obstacle at each level on the structure on a vertical plan.
The interconnection between the flashhead to their respective power cabinet is done with the 8 cables of projectors according to Figure 3-1.

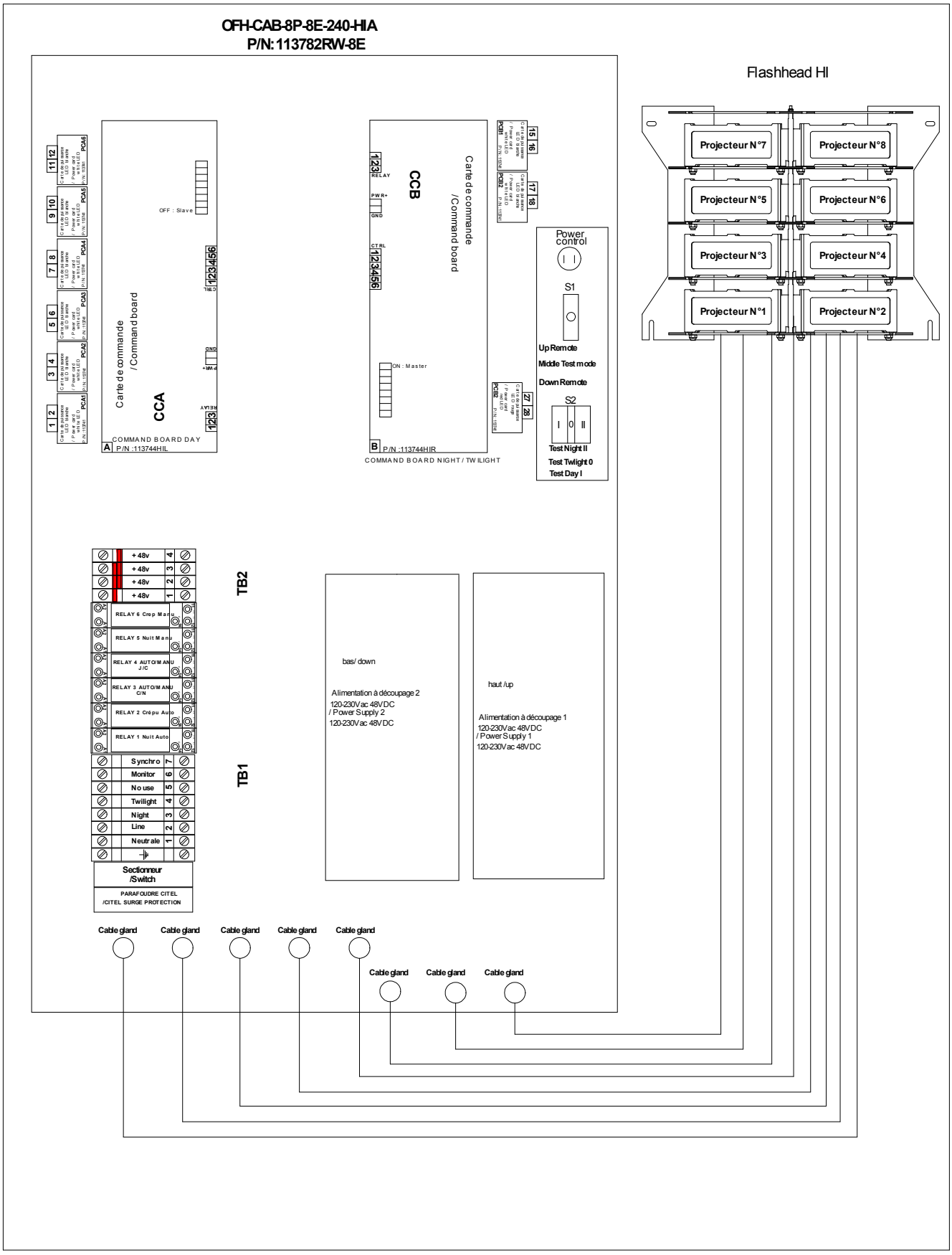



**Figure 3-1 Wiring between power supply and its flashhead**

### 3.2.2 OBSTAFLASH Power Supply

The power supply is connected to its respective obstaflash via the 4 meters cable provided with each led projector. If you required longer length of cable, consult your OBSTA representative.

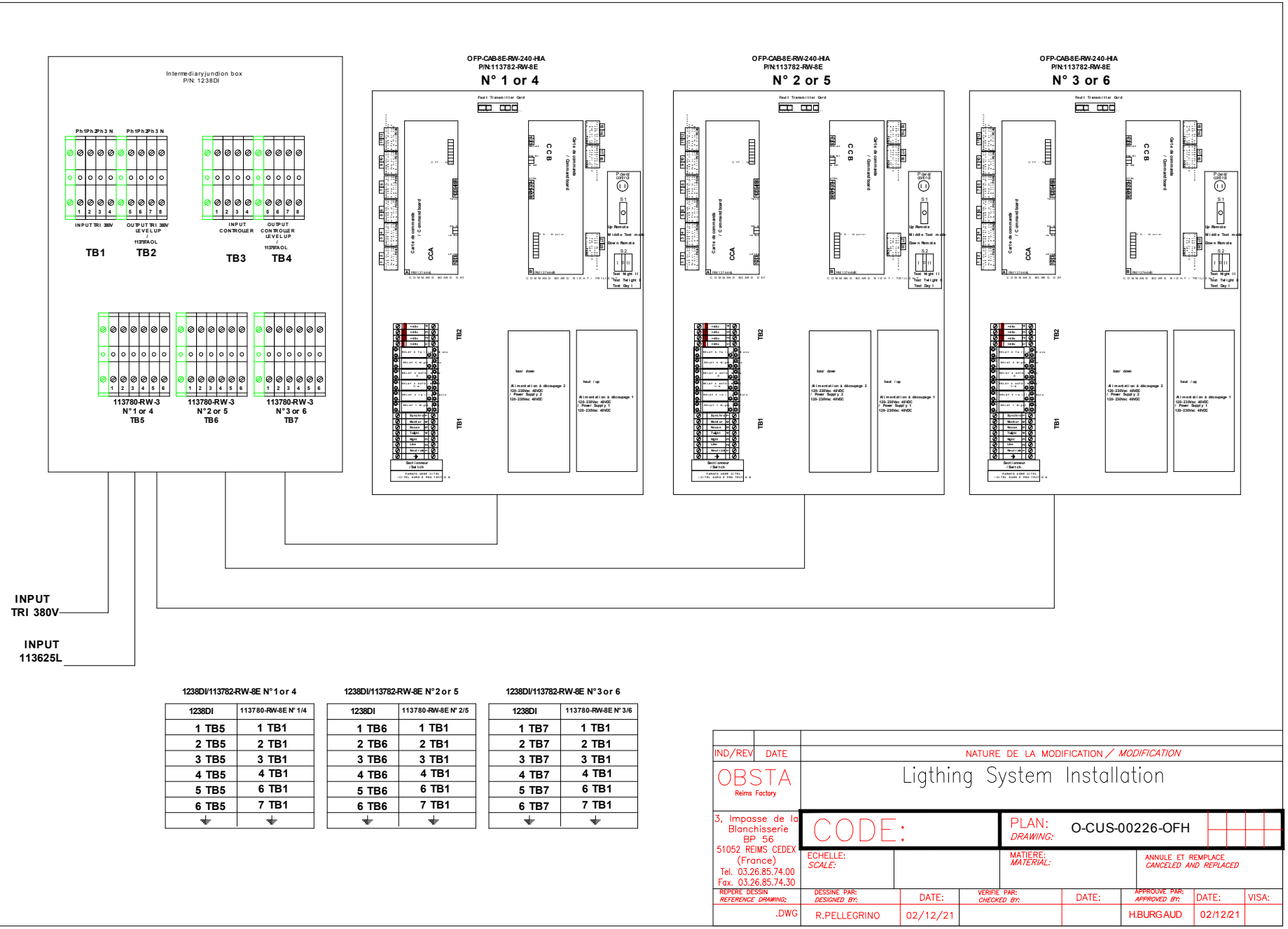
### 3.2.3 Ambient Light Sensor P/N113135

The ambient light sensor should be mounted upright, away from artificial light (eg., floodlights), and in a location that will enable its sensor window to have an unobstructed view of the polar sky (eg., pointed north in the northern hemisphere). The ambient light sensor should be connected on the master light (if there is no controller) or on the controller (if there is a controller).
The ambient light sensor is powered through 48VDC and contains 2 photocells each returning a 0V or 48Vdc output to indicate day/twilight or twilight/night to the system
First “Photocell twilight” returns a 0V during day and 48Vdc during twilight/night
Second “Photocell night” returns a 0V during day/twilight and 48Vdc at night

### 3.2.4 Wireless synchronization by GPS P/N113746 (option)

If included with the system, the GPS is a DIN rail module fixed inside the power supply of each light. It comes with an external antenna to be mounted in an unobstructed location of the sky.
The GPS module does have 2 luminous indicators that give the information received from the satellite (usually 5 to 10 minutes after initialization):

- 1 green indicator blinking at 40 flashes per minute
- 1 red indicator switched off during day/twilight time and switched on during night time that optionally can be used instead ambient light censor




**1238DI/113782-RW-8E N°1 or 4**

| 1238DI | 113780-RW-8E N° 1/4 |
|---|---|
| 1 TB5 | 1 TB1 |
| 2 TB5 | 2 TB1 |
| 3 TB5 | 3 TB1 |
| 4 TB5 | 4 TB1 |
| 5 TB5 | 6 TB1 |
| 6 TB5 | 7 TB1 |
| ⏚ | ⏚ |

**1238DI/113782-RW-8E N°2 or 5**

| 1238DI | 113780-RW-8E N° 2/5 |
|---|---|
| 1 TB6 | 1 TB1 |
| 2 TB6 | 2 TB1 |
| 3 TB6 | 3 TB1 |
| 4 TB6 | 4 TB1 |
| 5 TB6 | 6 TB1 |
| 6 TB6 | 7 TB1 |
| ⏚ | ⏚ |

**1238DI/113782-RW-8E N°3 or 6**

| 1238DI | 113780-RW-8E N° 3/6 |
|---|---|
| 1 TB7 | 1 TB1 |
| 2 TB7 | 2 TB1 |
| 3 TB7 | 3 TB1 |
| 4 TB7 | 4 TB1 |
| 5 TB7 | 6 TB1 |
| 6 TB7 | 7 TB1 |
| ⏚ | ⏚ |

| IND/REV | DATE | NATURE DE LA MODIFICATION / *MODIFICATION* |
|---|---|---|
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MATIERE: *MATERIAL:*

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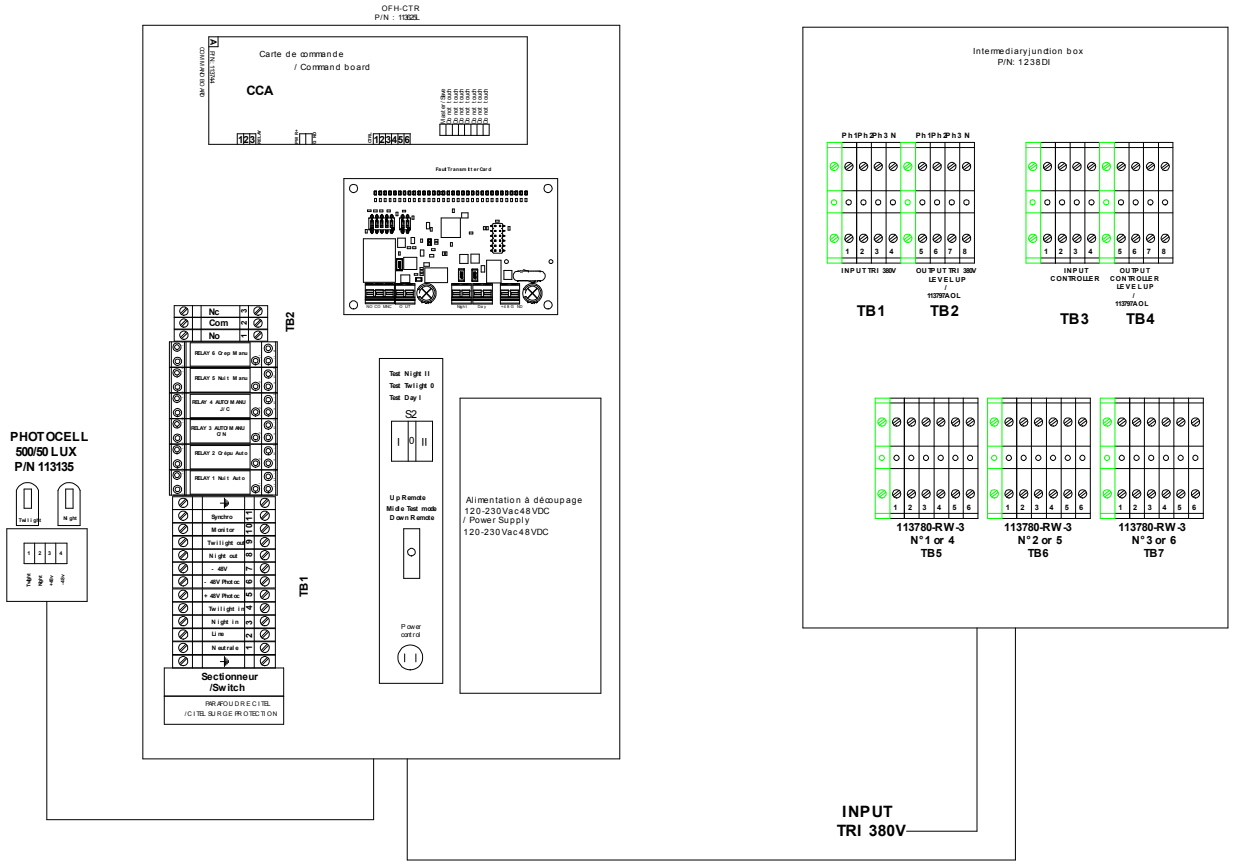
| .DWG | R.PELLEGRINO | 02/12/21 | | | H.BURGAUD | 02/12/21 | |




**113135/113625L**

| 113135 | 113625L |
|---|---|
| - 48V | 6 TB1 |
| + 48V | 5 TB1 |
| Night | 3 TB1 |
| Twilight | 4 TB1 |

**113625L/1238DI**

| 113625L | 1238DI |
|---|---|
| 8 TB1 | 1 TB3 |
| 9 TB1 | 2 TB3 |
| 10 TB1 | 3 TB3 |
| 11 TB1 | 4 TB3 |
| ⏚ | ⏚ |

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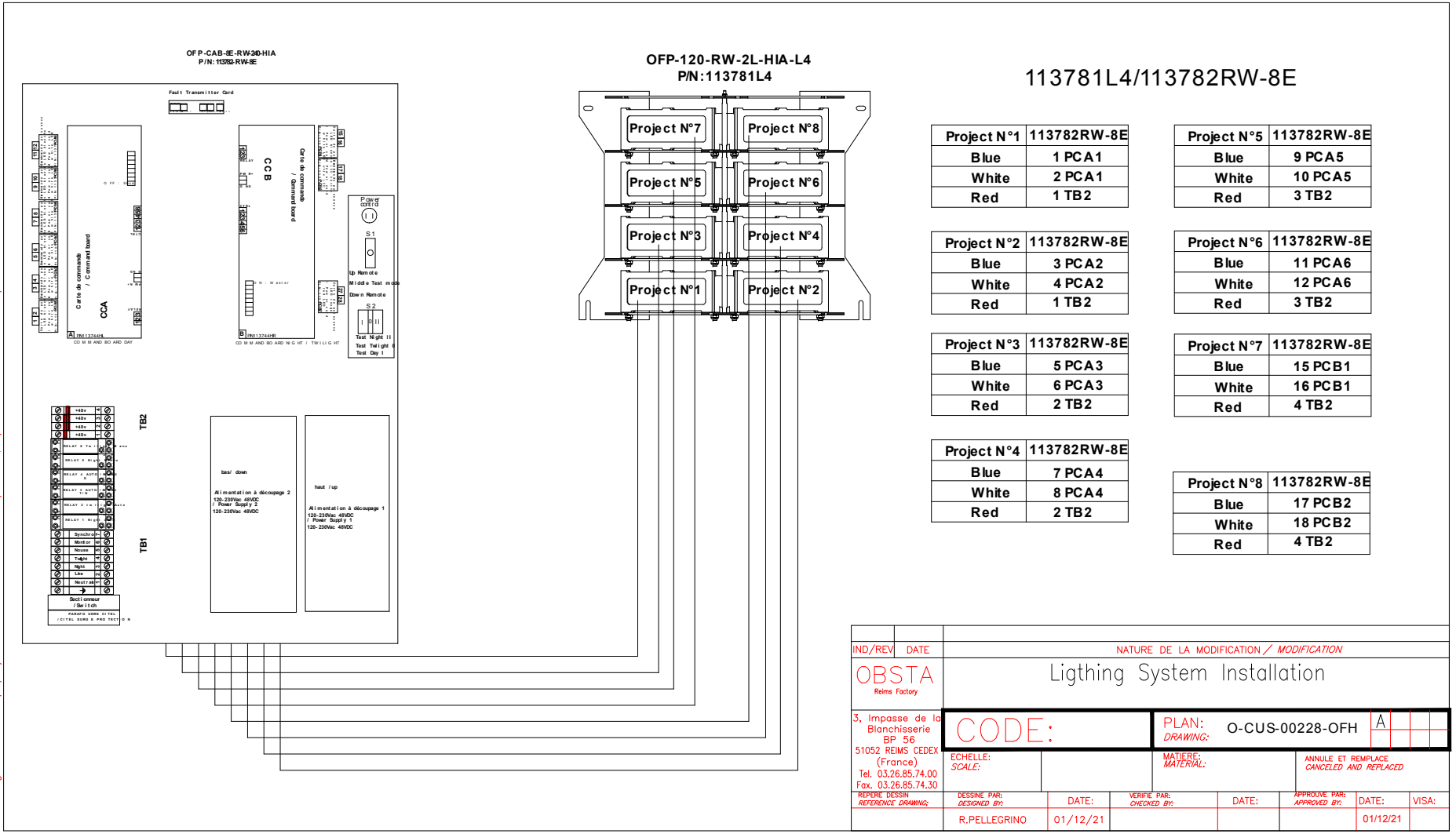
| .DWG | R.PELLEGRINO | 01/12/21 | | | H.BURGAUD | 01/12/21 | | |

**Figure 3-3 : Wiring diagram 113625L + 1238DI + 113135**




## 113781L4/113782RW-8E

| Project N°1 | 113782RW-8E |
|---|---|
| Blue | 1 PCA1 |
| White | 2 PCA1 |
| Red | 1 TB2 |

| Project N°2 | 113782RW-8E |
|---|---|
| Blue | 3 PCA2 |
| White | 4 PCA2 |
| Red | 1 TB2 |

| Project N°3 | 113782RW-8E |
|---|---|
| Blue | 5 PCA3 |
| White | 6 PCA3 |
| Red | 2 TB2 |

| Project N°4 | 113782RW-8E |
|---|---|
| Blue | 7 PCA4 |
| White | 8 PCA4 |
| Red | 2 TB2 |

| Project N°5 | 113782RW-8E |
|---|---|
| Blue | 9 PCA5 |
| White | 10 PCA5 |
| Red | 3 TB2 |

| Project N°6 | 113782RW-8E |
|---|---|
| Blue | 11 PCA6 |
| White | 12 PCA6 |
| Red | 3 TB2 |

| Project N°7 | 113782RW-8E |
|---|---|
| Blue | 15 PCB1 |
| White | 16 PCB1 |
| Red | 4 TB2 |

| Project N°8 | 113782RW-8E |
|---|---|
| Blue | 17 PCB2 |
| White | 18 PCB2 |
| Red | 4 TB2 |

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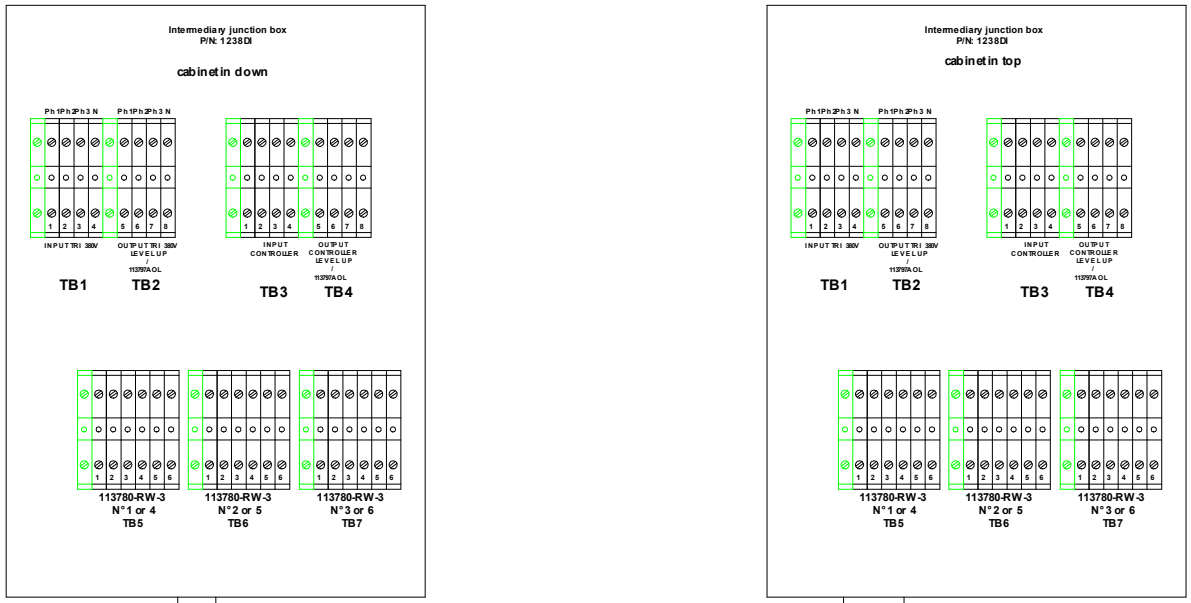
| | R.PELLEGRINO | 01/12/21 | | | | 01/12/21 | |

**Figure 3-4 : Wiring diagram 113781L4 + 113782RW-8E**

# Figure 3-5 : Wiring diagram 1238di DOWN + 1238DI UP




**Cable N°1**

**cabinet down / cabinet top**

| cabinet down | cabinet top |
|---|---|
| 5 TB2 | 1 TB1 |
| 6 TB2 | 2 TB1 |
| 7 TB2 | 3 TB1 |
| 8 TB2 | 4 TB1 |
| ⏚ | ⏚ |

**Cable N°2**

**cabinet down / cabinet top**

| cabinet down | cabinet top |
|---|---|
| 5 TB4 | 1 TB3 |
| 6 TB4 | 2 TB3 |
| 7 TB4 | 3 TB3 |
| 8 TB4 | 4 TB3 |
| ⏚ | ⏚ |

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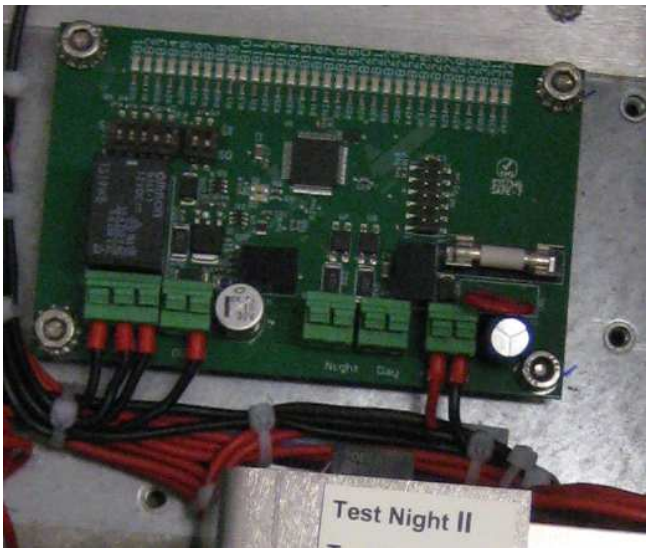
| .DWG | R.PELLEGRINO | 22/03/22 | | | H.BURGAUD | 22/03/22 | |

### 3.2.5 Controller (option)

**In the controller**, there is one Receiver Block (plugged into a Fault Receiver Board) for every eight lights. This card is used to view faulty lamps.




### 3.2.6 Power supply flashhead (option)

In each power supply of the flash fire heads, there is an emitter board which must be assigned a unique light number (up to 32) corresponding to the light number in the controller. The fault transmitter is located in each electrical cabinet figure 1-2 page 6 and photo 3-4 below:.

On the fault transmitter card, the light number should be assigned in the dipswitch S2 according to the table 3-4:

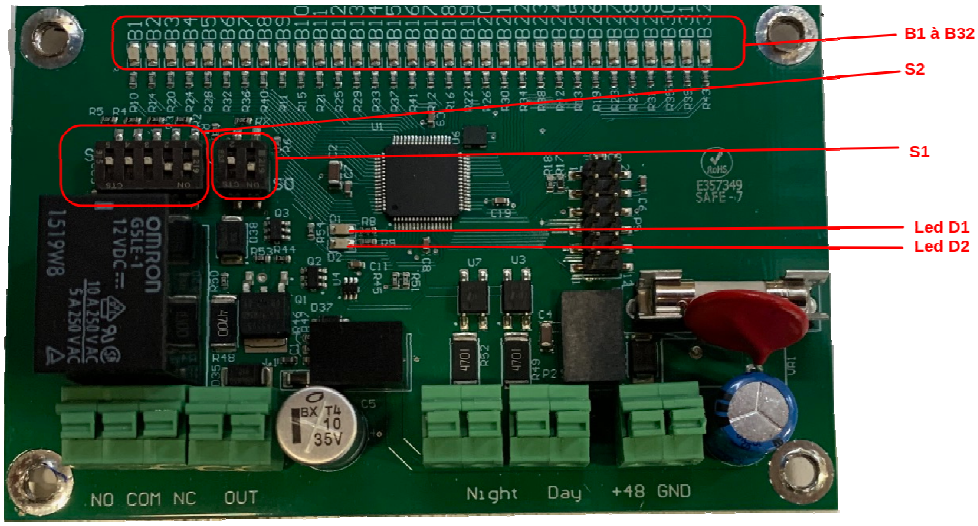



Photo 3-4

| N° lighting | Micro interrupteur S2 | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| 1 | - | - | - | - | - |
| 2 | On | - | - | - | - |
| 3 | - | On | - | - | - |
| 4 | On | On | - | - | - |
| 5 | - | - | On | - | - |
| 6 | On | - | On | - | - |
| 7 | - | On | On | - | - |
| 8 | On | On | On | - | - |
| 9 | - | - | - | On | - |
| 10 | On | - | - | On | - |
| 11 | - | On | - | On | - |
| 12 | On | On | - | On | - |
| 13 | - | - | On | On | - |
| 14 | On | - | On | On | - |
| 15 | - | On | On | On | - |
| 16 | On | On | On | On | - |

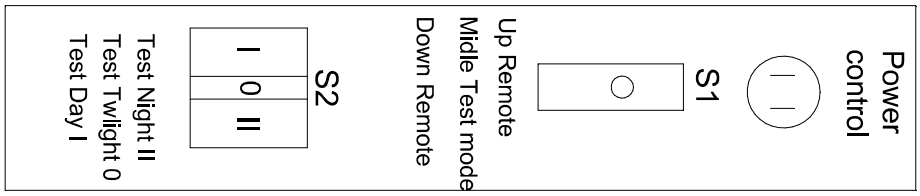
| N° lightin g | Micro interrupteur S2 | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| 17 | - | - | - | - | On |
| 18 | On | - | - | - | On |
| 19 | - | On | - | - | On |
| 20 | On | On | - | - | On |
| 21 | - | - | On | - | On |
| 22 | On | - | On | - | On |
| 23 | - | On | On | - | On |
| 24 | On | On | On | - | On |
| 25 | - | - | - | On | On |
| 26 | On | - | - | On | On |
| 27 | - | On | - | On | On |
| 28 | On | On | - | On | On |
| 29 | - | - | On | On | On |
| 30 | On | - | On | On | On |
| 31 | - | On | On | On | On |
| 32 | On | On | On | On | On |

3-5 : Coding

### 3.3 Final Check with controller

Before applying power to the equipment, check all wire connection according to figure 3-1 and 3-2 and ensure that any user-installed wiring does not interfere.

3.3.1 Test button (S1 in the middle position)




The S1 test button allows 3 positions:

- "Up": remote position, the light is in normal operation
- "Middle": the light are forced in "day" or "twilight" or "night" mode according to S2
- "Down" remote position, the light is in normal operation

The S2 test button allows 3 positions:

- "Day" position, the light is forced in day mode
- "Twilight" position, the light is forced in twilight mode
- "Night" position, the light is forced in night mode.

Inside power cabinet, a voltage indicator is present

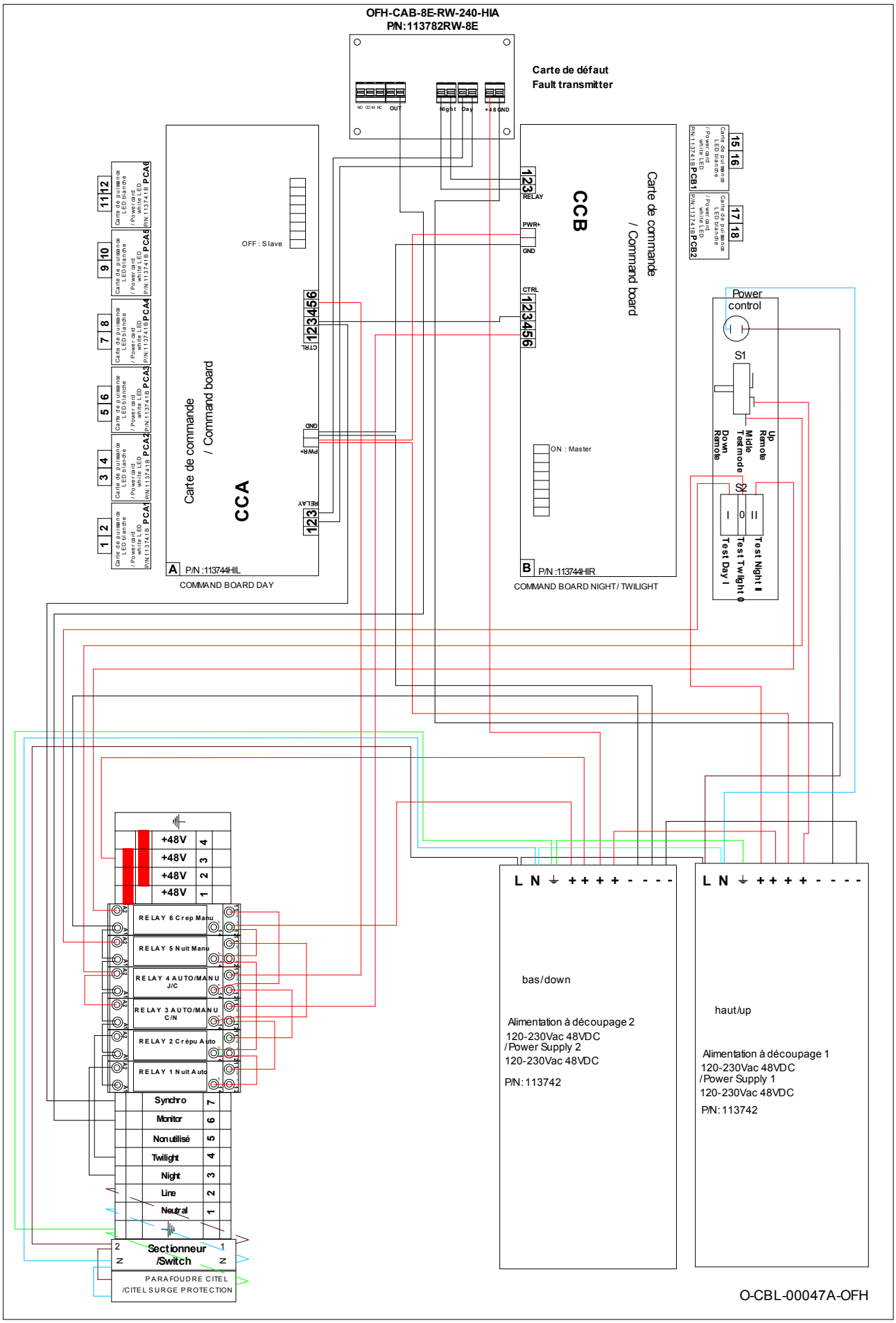



**Figure 3-6. Wiring diagram of the Power supply 13782RW-8E**

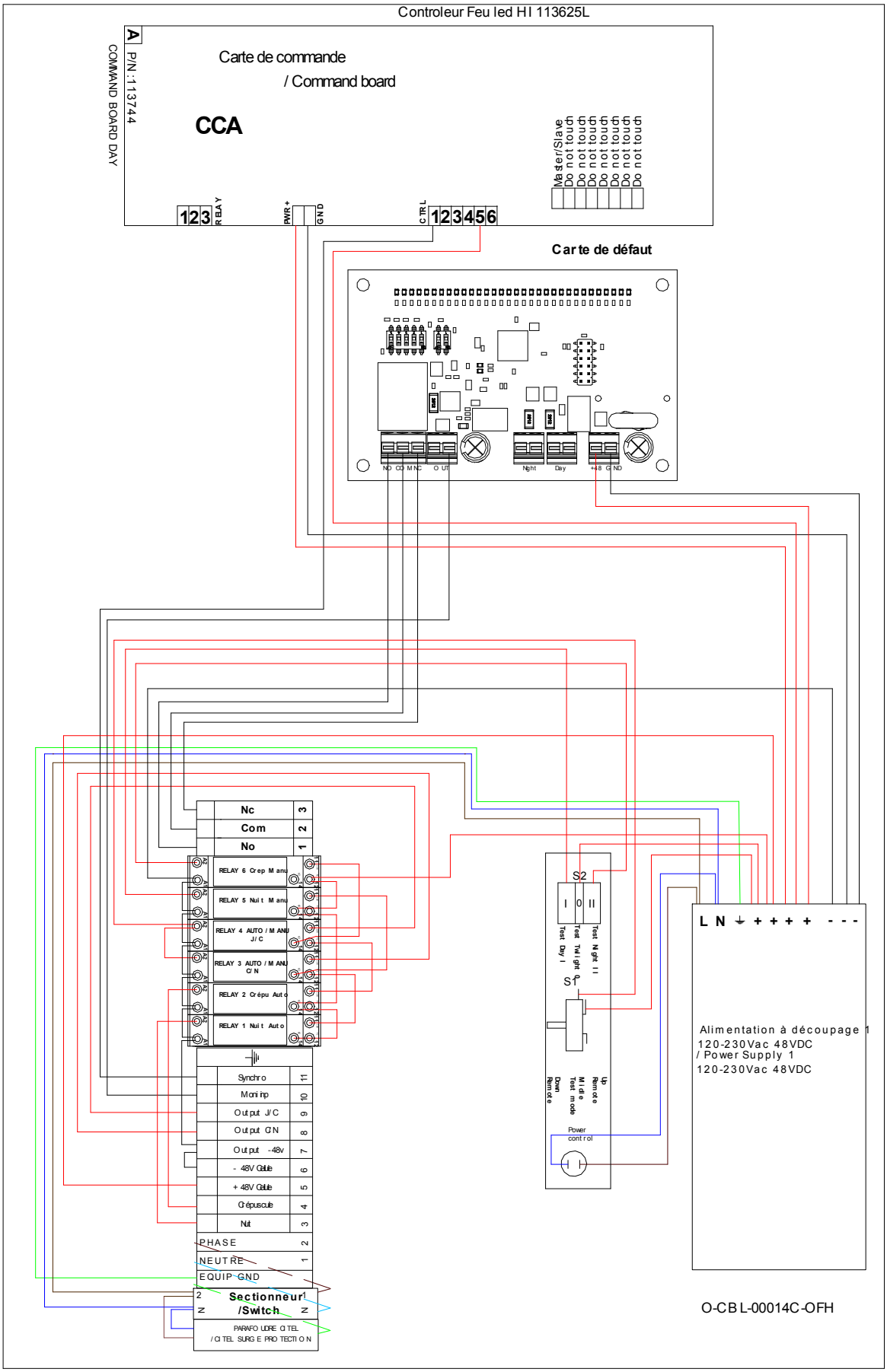



**Figure 3-7. Wiring diagram of the Power supply 13625L**

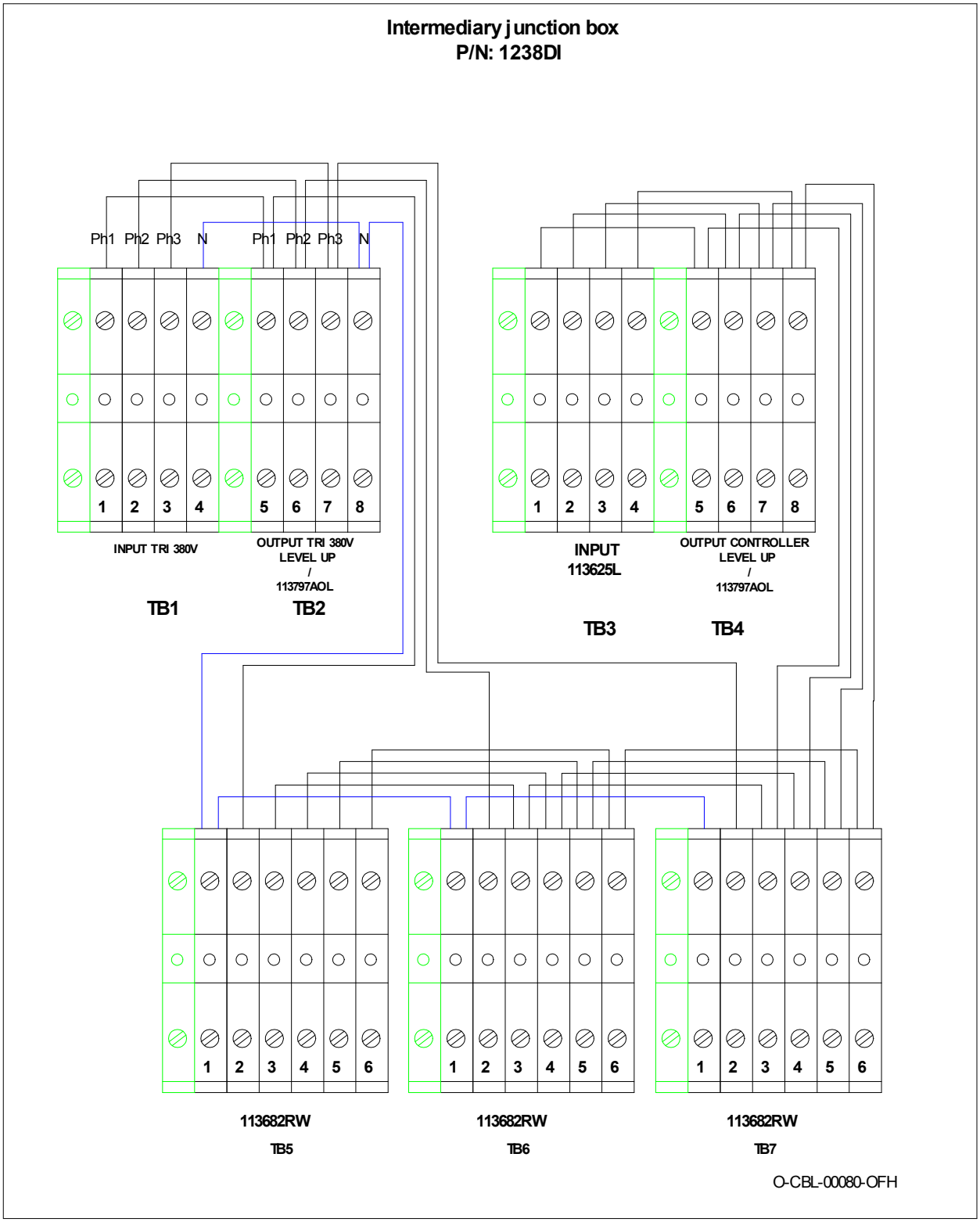



**Figure 3-8. Wiring diagram of the Power supply 1238DI**

## SECTION 4.0 - MAINTENANCE

### 4.1 Obstaflash beacon

No special or preventive maintenance is required for the obstaflashs, but only that which can be performed on an as-needed basis.

### 4.2 **Obstaflash power supply**

No special maintenance is to be done on the power cabinet except when it is necessary, however it is recommended to tight screws once a year

### 4.3 **Photocell**

The only maintenance required for this unit is the periodic cleaning of the Photocells. Frequency of cleaning will depend on the environment to which they are exposed

## SECTION 5 – SPARE PARTS

### Beacon-obstaflash

PROJECTOR-RW-4L……...……..113761L4

### Power supply

COMMAND CARD 48VDC JOUR…..……..……..……...…....113744L
COMMAND CARD 48VDC CRESP NUIT...……...…….....113744R
POWER CARD B 48VDC…..…….……113741B
EQUERRE ET BOUTON VOYANT HI……....113743B
FAULT TRANSMITTER CARD ……..…….....113749B
DS215-230/G……...…….……..……451721
POWER SUPPLY 230VA 600W…… ...…….....…113742

### Controler

COMMAND CARD ……..……..…….……..…….....113744
EQUERRE ET BOUTON VOYANT HI……....113743B
FAULT TRANSMITTER CARD ……..…….....113749B
DS215-230/G……...…….……..……451721
POWER SUPPLY 230VA 600W……...…….....…113742

### Photocell

CELLULE 500LUX 48V (twilight)…..……..……..…….…113136
Photo Cell 48VDC..(night)…….……100755
DS215-230/G……...…….……..……451721
POWER SUPPLY 230VA 600W……...…..…….....…113742

## Annex

The controller powered through 110-240Vac is located at the bottom of the tower. It is connected to the photocell and the 5G1,5 control cable going to the junction boxes of the high intensity lights

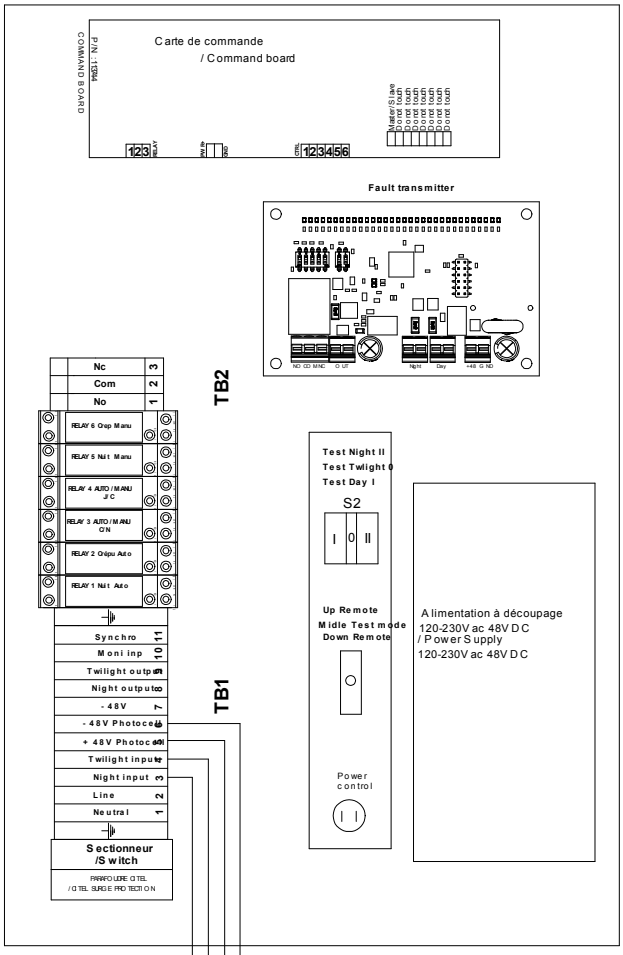
1. It contain a test button to force day/twilight/night mode and remote mode (controlled by photocell through relays)

It allows also to

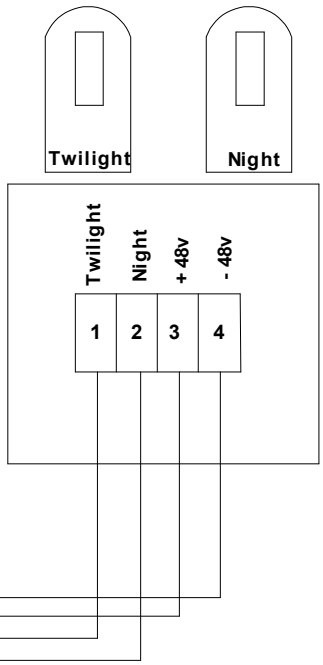
2. synchronize the high intensity flash-head

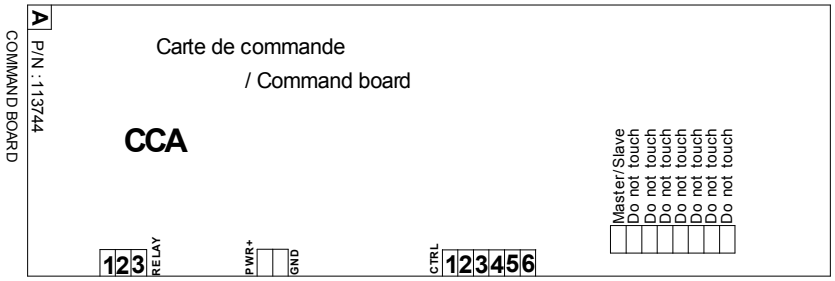
3. display the alarm of the lights in case a default occurs and activate a “Normally Open” or “Normally Close” alarm

OFH-CTR
P/N : 113625L

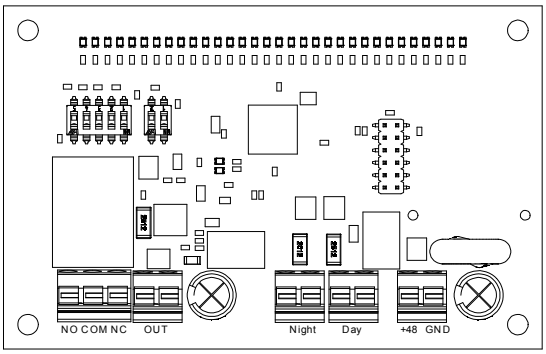



**PHOTOCELL**
**500/50 LUX**
**P/N 113135**






**Fault transmitter**




**TB2**

| | |
|---|---|
| Nc | 3 |
| Com | 2 |
| No | 1 |

RELAY 6 CrepManu
RELAY 5 Nuit Manu
RELAY 4 AUTO/MANU J/C
RELAY 3 AUTO/MANU C/N
RELAY 2 CrépuAuto
RELAY 1 Nuit Auto

**TB1**

| | |
|---|---|
| Synchro | 11 |
| Moni inp | 10 |
| Twilight output | 9 |
| Night output | 8 |
| - 48V | 7 |
| - 48V Photocell | 6 |
| + 48V Photocell | 5 |
| Twilight input | 4 |
| Night input | 3 |
| Line | 2 |
| Neutral | 1 |

**Sectionneur /Switch**

PARAFOUDRE CITEL
/CITEL SURGE PROTECTION

**Test Night II**
**Test Twlight 0**
**Test Day I**

S2

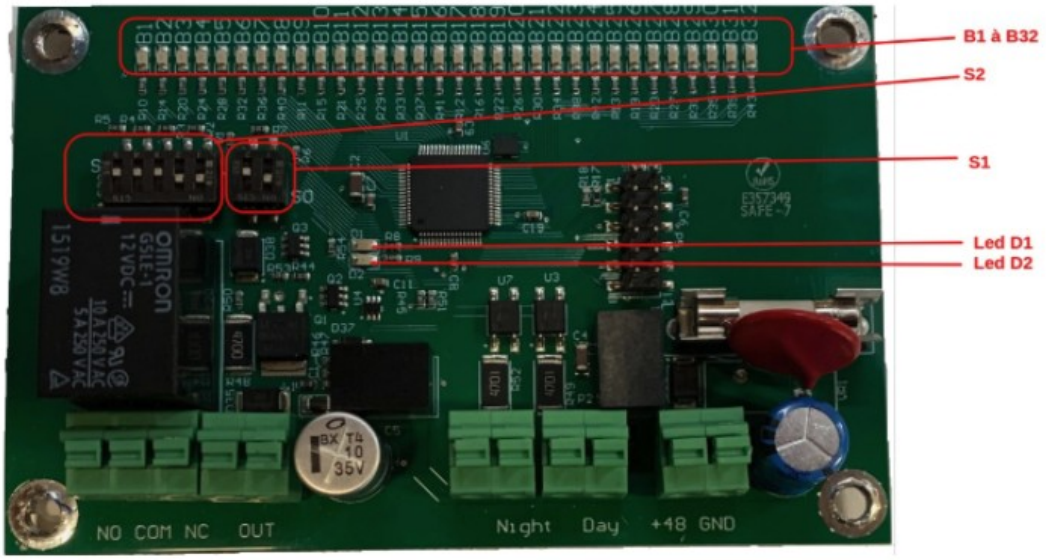
I 0 II

**Up Remote**
**Midle Test mode**
**Down Remote**

Power control

Alimentation à découpage
120-230Vac 48VDC
/ Power Supply
120-230Vac 48VDC

**Transmitter/receiver card part number 113749B <u>inside each high intensity power supply and the controller P/N 113625L at the bottom</u>**




## 1. Configuration of the card :

The same card is inside each lamp and inside the controller. So it can be configured as:

- **transmitter (pin 2 of dip-switch S1 at ON) when installed inside each lamp**

or

**- receiver (pin 2 of dip-switch S1 at OFF) when installed inside the controller.**

After changing the configuration of S1 or S2, the card has to be reset (or switch off and on)

| | S1 | | | | S2 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| ON | Nominal | Emetteur | | ON | Bit 1 à 1 | Bit 2 à 1 | Bit 3 à 1 | Bit 4 à 1 | Bit 5 à 1 |
| OFF | Reset | Récepteur | | OFF | Bit 1 à 0 | Bit 2 à 0 | Bit 3 à 0 | Bit 4 à 0 | Bit 5 à 0 |
| | 1 | 2 | | | 1 | 2 | 3 | 4 | 5 |

*Tableau 1: Dipswitch*

## 2. Indicators D1 and D2 when the card is in transmitter or receiver mode:

2.1 **In transmitter mode**
- The led D1 is on in case a default is signaled in the entry.
- The led D2 is on when the card is transmitting.
- In reset mode, the 2 leds are simultaneously on.

2.2 **In receiver mode**
- The led D1 is on when the number of default lights is above the limit (the relay is then de-activated – alarm is signaled).
- The led D2 is on when the card is receiving.
- In reset mode, the 2 leds are simultaneously on.

**3. Assignment of a unique number <u>in each transmitter card inside each lamp</u>**

In each transmitter card, the user must assign a unique number for each lamp as defined by the switch S2 according to the table below.

This number will correspond to the leds B1 to B32 “on” in case of default received in the receiver card located inside the controller at the bottom of the pylon

**S1 : 1 ON and 2 ON**

| lamp number | switches S2 | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| 1 | - | - | - | - | - |
| 2 | On | - | - | - | - |
| 3 | - | On | - | - | - |
| 4 | On | On | - | - | - |
| 5 | - | - | On | - | - |
| 6 | On | - | On | - | - |
| 7 | - | On | On | - | - |
| 8 | On | On | On | - | - |
| 9 | - | - | - | On | - |
| 10 | On | - | - | On | - |
| 11 | - | On | - | On | - |
| 12 | On | On | - | On | - |
| 13 | - | - | On | On | - |
| 14 | On | - | On | On | - |
| 15 | - | On | On | On | - |
| 16 | On | On | On | On | - |

| lamp number | switches S2 | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| 17 | - | - | - | - | On |
| 18 | On | - | - | - | On |
| 19 | - | On | - | - | On |
| 20 | On | On | - | - | On |
| 21 | - | - | On | - | On |
| 22 | On | - | On | - | On |
| 23 | - | On | On | - | On |
| 24 | On | On | On | - | On |
| 25 | - | - | - | On | On |
| 26 | On | - | - | On | On |
| 27 | - | On | - | On | On |
| 28 | On | On | - | On | On |
| 29 | - | - | On | On | On |
| 30 | On | - | On | On | On |
| 31 | - | On | On | On | On |
| 32 | On | On | On | On | On |

The receiver card count every 5 minutes the number of defaults.

The defaults are signaled through the led indicators B1 to B32 in the receiver card which identify which transmitter card(s) is/are sending a default :

- by a quick blinking in case of the default is detected in less than 5 seconds
- by a slow blinking in case a default has been detected at least one time during the last 5 minutes.
- **by a fixed signal** if the default is permanent, that is to say at least one time in the 4 last periods of 5 minutes.

In absence of default during the last 5 minutes, the led(s) go to off.

The receiver card changes the alarm relay of the controller when at least « N » default lamps are detected, with N indicated by the dip switch S2 (number N is binary coded).

Remarks : After changing S2 (number N), the card must be reset (or switch off and on)

**4. Setting « N » default lamp <u>on the receiver card inside the controller before activating the alarm relay</u>**

N is the threshold of default lamps from when the card changes the alarm relay NO NC COM in the controller. **When the threshold of default lamp(s) is reached, the “normally open and normally close” alarm relay will be activated after alarm signal is confirmed (after luminous signal become red fixed) which could take 20 minutes**

**S1 : 1 ON and 2 OFF**

| Nb of default lamps | switches S2 | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| 1 | On | - | - | - | - |
| 2 | - | On | - | - | - |
| 3 | On | On | - | - | - |
| 4 | - | - | On | - | - |
| 5 | On | - | On | - | - |
| 6 | - | On | On | - | - |
| 7 | On | On | On | - | - |
| 8 | - | - | - | On | - |
| 9 | On | - | - | On | - |

After changing the configuration of S2, the card has to be reset (or switch off and on)

# Possible troublesomes on high intensity  part number 113780

To be used in the manual:

- figure 3-4 page 23 for the localization of each items inside the power supply of each flash-head
- figure 3-6 page 28 for the internal wiring of the power supply of each flash-head
- figure 3-7 page 29 for the internal wiring of the controller
- figure 2-1 page 16 for the visual indicators on the command card

| Possible troublesomes | Action | Solution |
|---|---|---|
| Red power control indicator **(as shown in figure 3-6 page 28)** for voltage presence is off | **As per figure 3-6 page 28:** Check input voltage 230VAC between the terminals 1 and 2 on the main terminal connection TB1, and the switch position and the status of the surge protection. | Replace the defective part (surge protection DS215-230/G part number 451721 or switch position) if necessary |
| D15 is off on the command card **(as per figure 2-1 page 16)**<br><br>230VAC is present but the light does not work. | **As per figure 3-6 page 28:** Check the presence of the 48Vdc voltage on the 2 outputs of power supplies part number 113742 and the status of their fuse | Replace the power supply part number 113742 or the fuse if necessary |
| The light works permanently on day mode, twilight mode or night mode | Check if S1 is on « remote». Or check the wires coming from the controller on the terminals 3 and 4 of TB1 to the relay and up to the 2 command board part number 113944(HI)L and 113944(HI)R.<br><br>Put S1 in "test mode":<br><br>When S2 in night mode, the relay 3 must be lighted<br>When S2 is in day mode, the relay 4 must be lighted<br>When S2 is in twilight mode, all relays should be off | Tighten the terminals on TB1, on the relay. Replace a 48Vdc  relay if necessary |
| Some indicators D6 to D12 are red blinking on the command card **(as per figure 2-1 page 16)**<br><br>One led projector (or more) does not work | Tighten the wires of each led projector inside the stainless cabinet<br><br>Otherwise tighten the green terminals of the 8 power cards (total 16 wires "-") and terminals 1 to4 on TB2 (total 4 wires "+")<br><br>Otherwise check the power card and their projector according to the **procedure below*** | Replace power card part number 113741B or projector part number 113761-4 if necessary |
| D13 is blinking and D14 is off on the command card **(as per figure 2-1 page 16)**<br><br>The flashes of the light is not synchronized with the other lights and it flashes at 15 pulse per minute | The top sync is not received from the controller.<br><br>Check the wires connection from the controller on  terminals 11 of TB1 **as per figure 3-7 page 29** to the 2 command cards in the  power supply of flash-head on TB1 7 as **per figure 3-6 page 28** | Replace the command card part number 113744L and/or 113744R in the power supply of the flash-head if necessary |
| The flashes of all lights are not synchronized | The top sync of the controller is not send or not received by the lights.<br><br>Check the wires connection from the controller on  terminal 11 of TB1 **as per figure 3-7 page 29**, to the power supply of each flash-head | Replace the command card part number 113744 in the controller if necessary |
| The light does not send any alarm to the controller in case of default | Check the wires connection from the controller on the terminal 10 on TB1 a**s per figure 3-7 page 29** up to the power supply of the light terminal 6 on TB1 a**s per figure 3-6 page 28**<br><br>Check that the light number that has been assigned is unique on the fault transmitter card | Replace the fault transmitter card part number 113749B if necessary |
| All lights work in day/twilight/night mode permanently | Check the controller is on « remote» position. Otherwise check the position of the photocell (in the North in the North Hemisphere), the wiring of the photocell and test the photocell by masking it with your hand | Replace photocell part number 113135 or the controller if necessary |

## Otherwise call the manufacturer

***: One projector not working**

For example if luminous indicator D7 (or WHITE#2) is red blinking, disconnect the green terminal from its power card and plug it to the power card for example D8 (or WHITE#3) close to it.
- If the luminous indicator D8 does blink also, it means the projector is defective
- If the luminous indicator D8 does not blink, it means the projector is ok but the power card linked to WHITE#2 is defective