



**'SMALL" LIGHT FOR LED'S
INSTALLATION AND MAINTENANCE MANUAL**



ENGLISH

IMPORTANT: The instruction manual you are holding includes essential information on the safety measures to be implemented for installation and start-up. Therefore, the installer as well as the user must read the instructions before beginning installation and start-up.

Keep this manual for future reference.

To achieve optimum performance of the “SMALL” light for LED’s, follow the instructions provided below:

1. VERIFY THE CONTENTS OF THE PACKING:

The following accessories are included inside the box:

“SMALL” light (PLSC100W – PLSW100W)

Unit Floodlamp

Decorative key

O’ring

“SMALL” light (PLSC200W – PLSW200W)

Unit floodlamp

Decorative key

Butt joint

Nut

2. GENERAL CHARACTERISTICS:

This floodlamp has been designed to be used fully submerged underwater in fresh water SPAS. It is a Class III electric apparatus with very low safety voltage (12 V with alternating current).

The floodlamp complies with IPX8 degree of protection (resistance to penetration of dust, solid bodies and humidity) at a nominal immersion depth of 2 m.

This floodlamp complies with international safety standards for lights, especially the EN 60598-2-18 standard: LIGHTS PART 2: SPECIFIC REQUIREMENTS SECTION 18 LIGHTS FOR SWIMMING POOLS AND SIMILAR APPLICATIONS.

The manufacturer is not responsible in any circumstances for assembly, installation or start-up of any electric components which have been inserted or handled at locations other than its own premises.

3. INSTALLATION:

- In order to clearly light a pool it is recommended to install a floodlamp every 5 m² of water surface. In swimming pools which are especially deep, a floodlamp is required for every 10 m³ of water volume.
- In order to prevent glare, the floodlamps should be installed so that they face away from the residence or usual view of the swimming pool.
- In the event that lighting is used in training or competition pools, the floodlamps should be installed on the sides to prevent glare on the swimmers.
- To avoid the need to empty the pool to change the lamp, we recommend that the floodlamp be installed in areas which are accessible from the upper edge of the pool.

Prior to installation verify that the gland seal has been fully tightened.

4. ASSEMBLY:

“SMALL” light (PLSC100W – PLSW100W)

This light is manufactured for installation in guiding tube.

1. Install the wall conduit in the concrete wall, at a distance of 400-700 mm. Below the water level (Fig. 2).
2. The wall conduit must be extended with a cable conduit the length of which remains above the maximum level of the swimming pool or spa. (Fig. 3).
3. Feed the light cable through the conduit. (Fig. 4).
4. Then fit the light itself, pushing it into place. (Fig. 5).

“SMALL” light “SMALL” light (PLSC200W – PLSW200W)

This light is manufactured for installation in SPAS and metal or polyester bath-tubs. It does not require a niche or guiding tube for its installation.

1. the light should be installed at approximately 400 mm below the water-level of the SPAS and in a place where it can not easily be covered by the body of a person. Install it preferably in the wall of the steps at the entrance of the SPAS (Fig.2).
2. With the use of a drill make a round hole a diameter of 60 mm in a the wall of SPAS (Fig. 6).
3. Place the rubber gasket and the light inside the SPAS.
4. Place the nut of 2” on the back-part of the body of the SAPS. Fixing the nut to the body of the light (Fig. 7).

Attention:

- In order to ensure full watertightness clean the seat of glass butt joint or replace this if any permanent deformation or notches are visible.
- Firmly tighten the gland seal nut.
- Always install the body in order an easy manipulation from the outside, or in one way that you can extract it out without many difficulties.
- Before any handling ensure that there is NO voltage supplied to the floodlamp.

Take the precaution of leaving 1.5 m of cable wound on the body of the floodlamp in order to be able to remove the floodlamp to the edge of the pool in the event that handling is required (Fig. 8).

A T T E N T I O N

The Projector PLSW100W and PLSW200S does not need any control since it|she emits only white light.
The Projector PLSW100W and PLSW200S if it needs control for the change of color and of sequences.

5. ELECTRICAL CONNECTION: Box control and Power Supply - PLCB200

Current must be supplied by the Box control and Power Supply code PLCB200. Never connect the spotlights directly to 12V. The LED projector could be damaged if the feeder is not used.

A transformer is not required as the feeder supplies a voltage of 12V to the spotlight. The Power Supply is connected directly to the 230Vac mains through the supplied cable.

Each can supply power to a maximum of four SMALL LED spotlights.

To make the connections, open the feeder box by loosening the four screws on the upper cover.

To guarantee sealing, the cables should be inserted in the Power Supply using the packing glands provided.

The spotlights are supplied with a 4-wire 1.5mm² Cu H07RNF cable. This cable is connected to the connection strips as indicated in figure 8.

Each wire should be connected to its corresponding terminal as follows:

R – Brown / B – Blue
 G – Black / COM – Green / Yellow

The spotlight could be seriously damaged if the wires are connected in a different way than indicated.

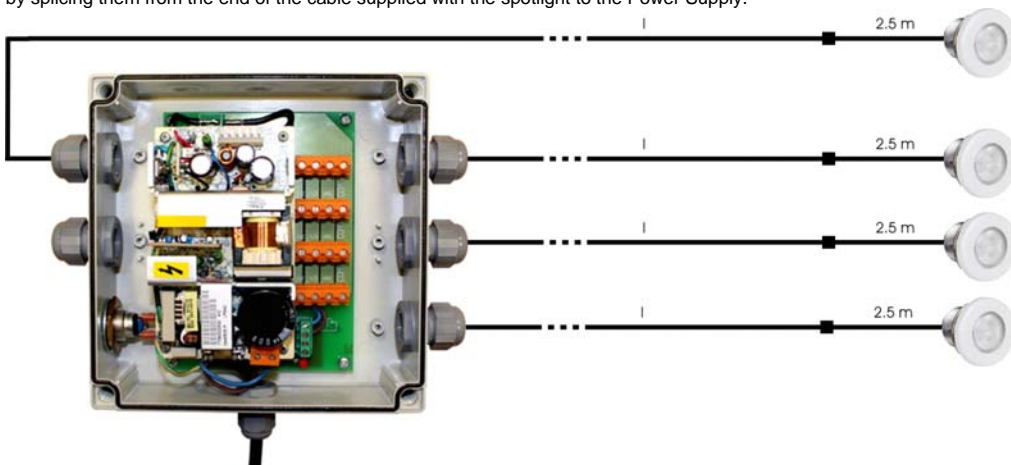
Each spotlight must be connected to a different group of connection strips. If more than one spotlight is connected to the same group of strips, the feeder could breakdown.

5.1. Types of connection between the Box control - Power Supply and the spotlights

- Individual connection

The spotlight is supplied with 2.5 metres of cable. If the spotlight is near the feeder it can be connected directly to its connection strip.

If the distance between the spotlights and the Power Supply is more than 2.5 metres, the cables will have to be extended by splicing them from the end of the cable supplied with the spotlight to the Power Supply.



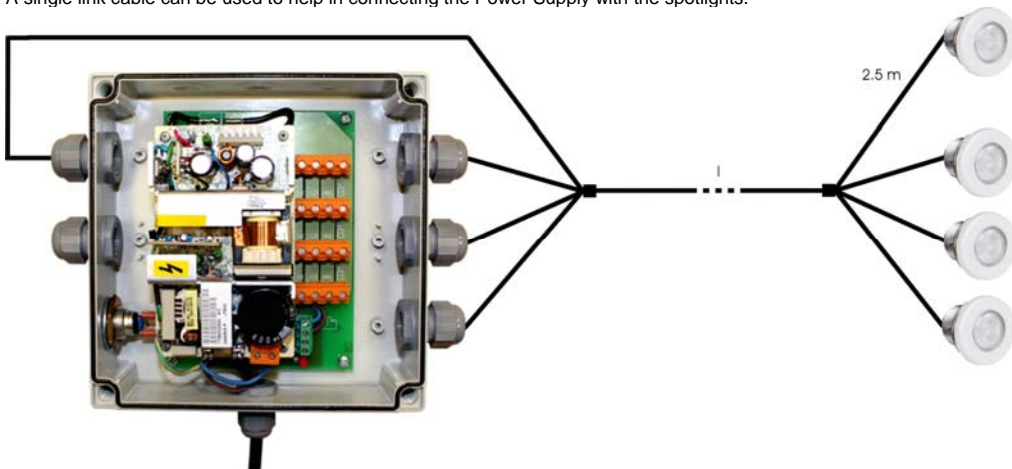
To avoid voltage drops in the electrical cables, cables with appropriate sections should be used according to their length.

Length (m)	Cable section
0-20	1.5 mm ² Cu
20-30	2.5 mm ² Cu
30-50	4 mm ² Cu

The spotlight cable should never be changed. The supplied cable guarantees a sealing degree of IPX8. The use of a different cable could cause a loss in sealing leading to the breakdown of the spotlight.

· Joint connection

A single link cable can be used to help in connecting the Power Supply with the spotlights.



For this connection method, cables with appropriate sections should be used according to their length.

Length (m)	Cable section
0-20	2.5 mm ² Cu
20-30	4 mm ² Cu
30-50	6 mm ² Cu

6. CONTROL SYSTEMS OF THE LED PROJECTORS:

Installations with SMALL LED spotlights only, can be controlled from the Power Supply itself. In installations where there are also Colorplus spotlights, the Power Supply can synchronize these spotlights with the SMALL LED spotlights.

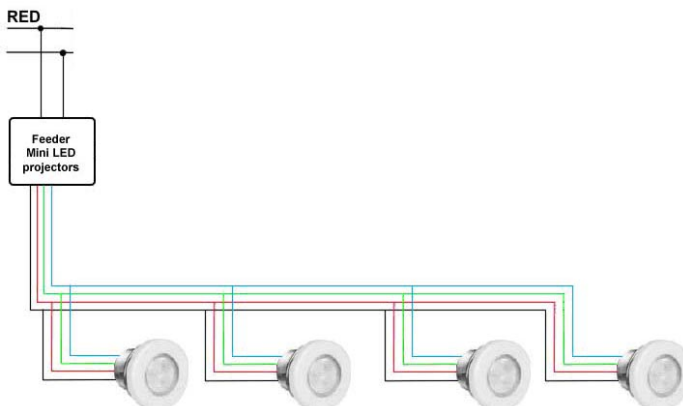
6.1. Control through the feeder

The feeder is provided with a pushbutton, which is the simplest way of controlling the spotlights. Each press changes the colour or sequence.

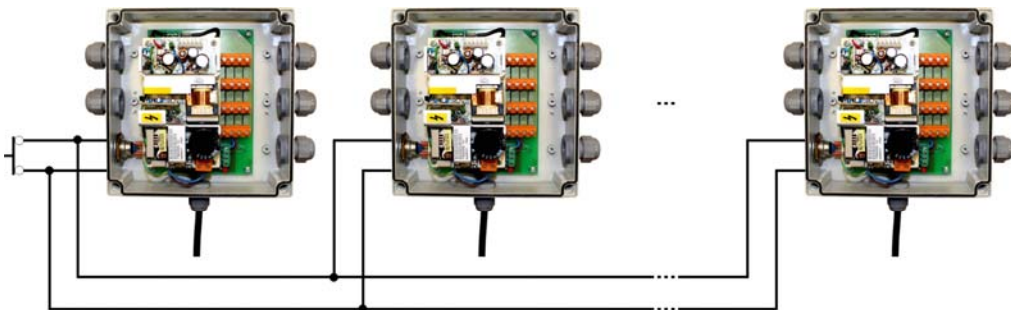
The pushbutton is normally closed (NC). It is connected in the terminals indicated "pushbutton input" shown in figure 8.

With this control system you have 12 function modes: 6 fixed colours and 6 sequences with different colours.

6.1.1. Diagram of the electrical connection



In installations with more than four mini LED spotlights, which must be controlled jointly, a single pushbutton should be installed connected in parallel to the connection terminals.



6.2. Control

The SMALL LED spotlight can be used together with spotlights of the QUICK series.

6.2.1. Pushbutton control

The same functions as the Box Control.

6.2.2. Control by means of Box Control

The **Remote Control – Box Control – Transformer – Led Projector** unit enables you to create different lighting scenarios inside the pool with two function modes:

Fixed colour: Selection of a fixed colour from 6 possibilities.

Automatic colour sequence: Selection from among 6 programmes of colour sequences. Each programme is defined by the duration of each colour and of the transition from one colour to another.

6.3 OPERATION MODES

The unit enables different light scenarios to be created inside the swimming pool with two operation possibilities:

Set colour: Selection of one set colour out of six possibilities.

COLOUR N°	% RED	% BLUE	% GREEN	COLOUR
1	100	100	100	White
2	100	0	0	Red
3	0	100	0	Blue
4	0	0	100	Green
5	100	100	0	Purple
6	0	100	100	Cyan

Automatic sequence of colours: Selection of 6 colour sequence programmes. Each programme is defined by the lighting time of each colour and the transition time from one colour to another according to the following table:

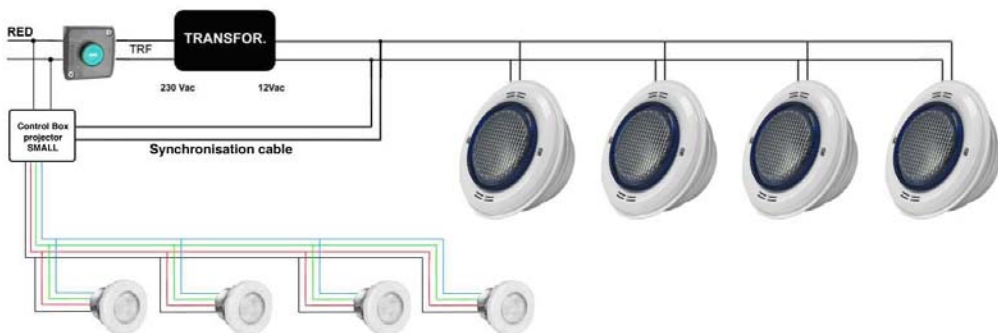
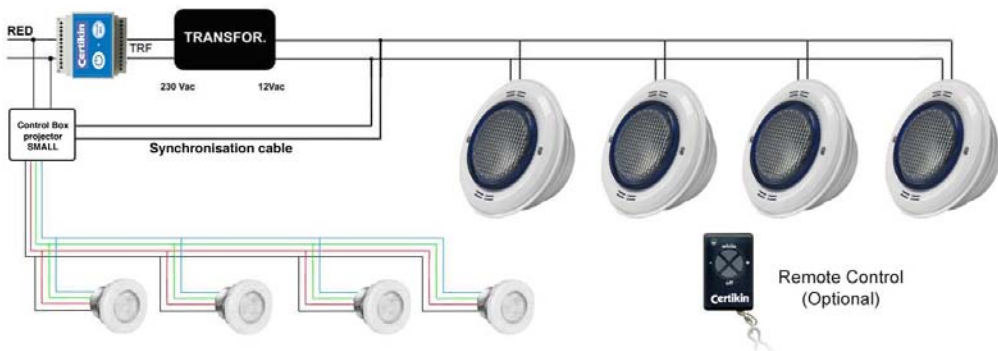
SEQUENCE	ORDER OF COLOURS						COLOUR TIMING (SEC.)	BLENDING TIMING (SEC.)
1	Red	Blue	Green	Purple	Cyan	Yellow	2	2
2	Red	Green	Cyan	Blue	Purple	Yellow	4	4
3	Purple	Cyan	Yellow	-	-	-	4	4
4	Red	Blue	Green	-	-	-	8	8
5	Purple	Cyan	Yellow	-	-	-	18	18
6	Yellow	Purple	Cyan	-	-	-	0,5	0,5

The colour or sequence is changed by pressing the pushbutton. The colour and sequence cycle is rotary. For example, if you are in colour 5, by pressing once, you will reach colour 6. If you press once again, you will go to sequence 1. If you are in sequence 6, press once and you will get to colour 1, which is White.

6.4 Electrical connection diagram

In both Pushbutton or Box Control configurations, two cables should be connected in the two 12VCA terminals of the feeder in parallel with any spotlight (12 V Mains), as if it were another QUICK spotlight.

The feeder will therefore interpret the signal received and will perform the same functions as the QUICK spotlights.



**** Attention: The pushbutton has operation priority and should be disconnected if used jointly with the QUICK series of spotlights. If it is not disconnected, the spotlights will not work correctly.**

7. MAINTENANCE:

This projector does not require any type of maintenance. If the projector is not working properly, please contact our customer attention department.

The inside of the projector should not be handled under any circumstances, as this would lead to losing the guarantee.

Attention: Before any handling ensure that there is NO voltage supplied to the floodlamp.

8. SAFETY WARNINGS:

- People in charge of assembly should be suitably qualified for this type of work.
- Avoid making contact with the electric voltage.
- Comply with the current standards regarding accident prevention.
- In this regard, the IEC 364-7-702 standards must be observed: **WIRING IN BUILDINGS SPECIAL WIRING SWIMMING POOLS**
- All maintenance operations should be performed with the projector disconnected from the Mains.
- Do not handle with wet feet.
- The manufacturer is not responsible in any circumstances for assembly, installation or start-up of any electric components which have been inserted or handled at locations other than its own premises.

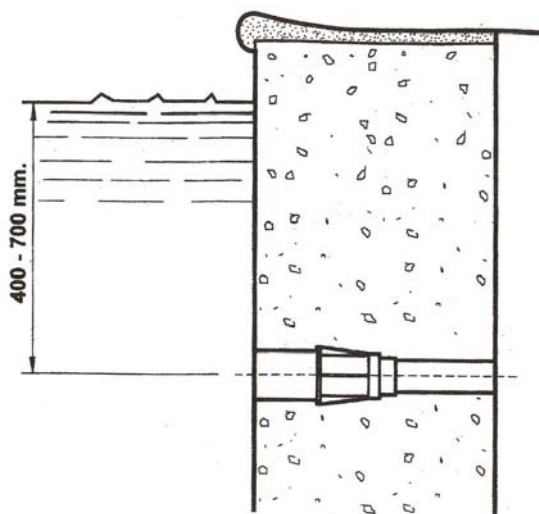


Fig. 2

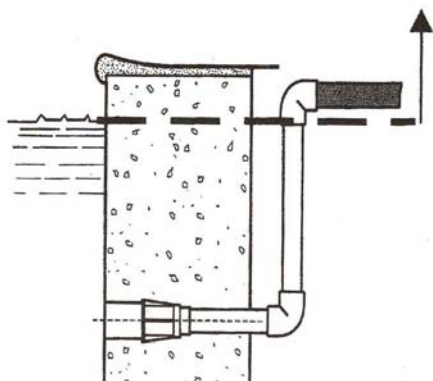


Fig. 3

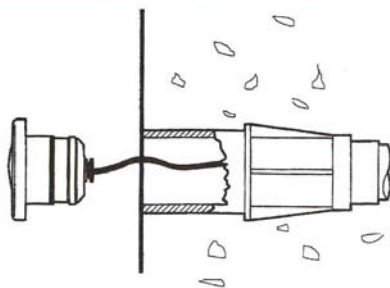


Fig. 4

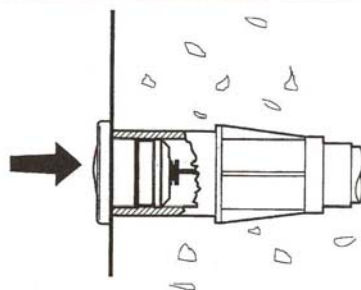


Fig. 5

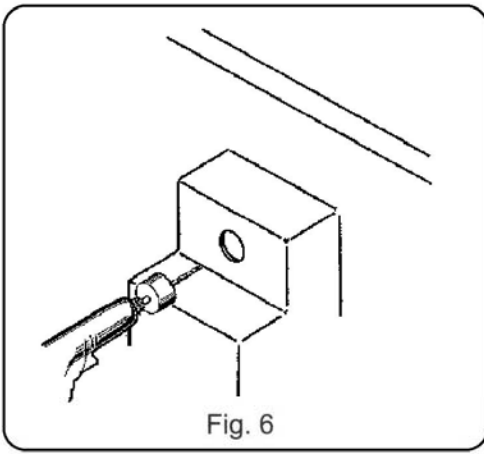


Fig. 6

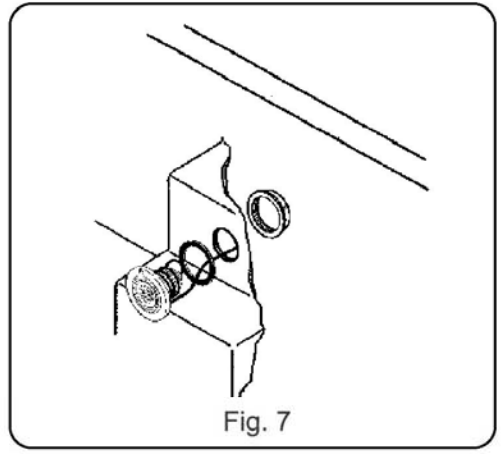


Fig. 7

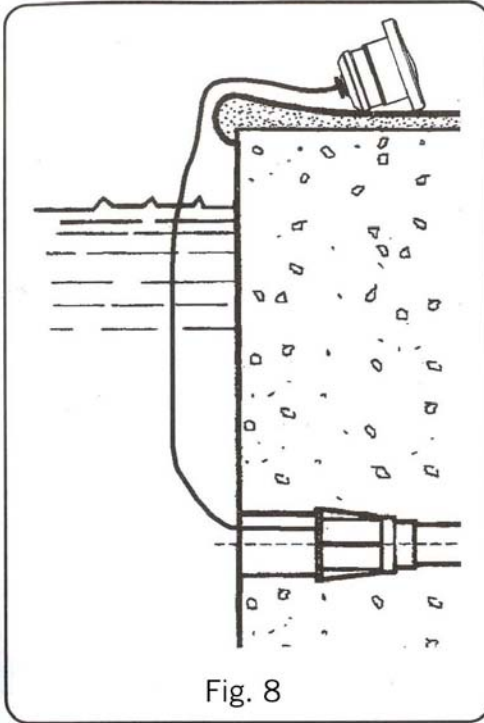


Fig. 8

GB PRODUCTS: "SMALL" LIGHT FOR LED'S,

CODE

PLSC100W - PLSW100W - PLSC200S - PLSW200S

DECLARATION CE OF CONFORMITY

The products listed above are in compliance with:
Electromagnetic Compatibility Directive 89/336/EEC.
Low Voltage Directive 73/23/EEC.
European Standard EN 60598-1, EN 60598-2-18,
and all its modifications.

St. Jaume de Llierca, 1 January of 2005

Signature / Qualification:
Signature / Qualification:
Firma / Cargo:
Firma / Qualifica:
Assinatura / Título:

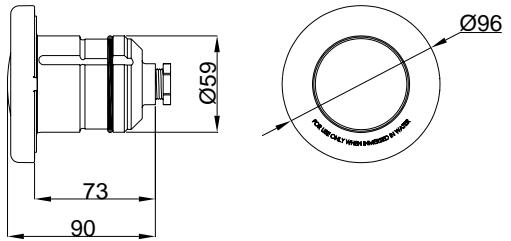
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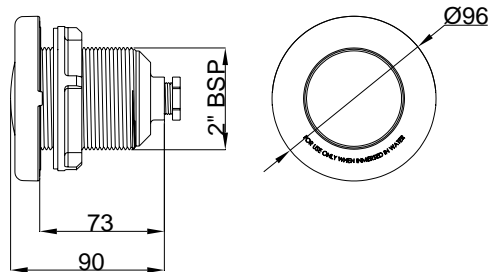
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TECHNICAL CHARACTERISTICS

Model PLSC100W - PLSW100W



Model PLSC200S - PLSW200S



DESCRIPTION	Model "SMALL"
Rated voltage / Tensión nominal / Tension nominale / Tensione nominale / Tensao nominale	12 V
Current suply / Tipo de corriente / Type de courant / Tipo di corrente / Tipo de corrente	AC
Power / Potencia / Pouvoir / Potere / Poder	11W
Degree of protection / Grado de protección / Degré de protection / Grado di protezione / Grau de proteção	CLASE III IPX8
TO BE USED ONLY WITH POWER SUPPLY CODE PLCB200 / PARA USO EXCLUSIVO CON EL ALIMENTADOR CÓDIGO PLCB200 / À UTILISER EXCLUSIVEMENT AVEC L'ALIMENTATEUR CODE PLCB200 / DA USARE ESCLUSIVAMENTE CON L'ALIMENTATORE COD. PLCB200 / PARA UTILIZAÇÃO EXCLUSIVA COM O ALIMENTADOR CÓDIGO PLCB200	

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