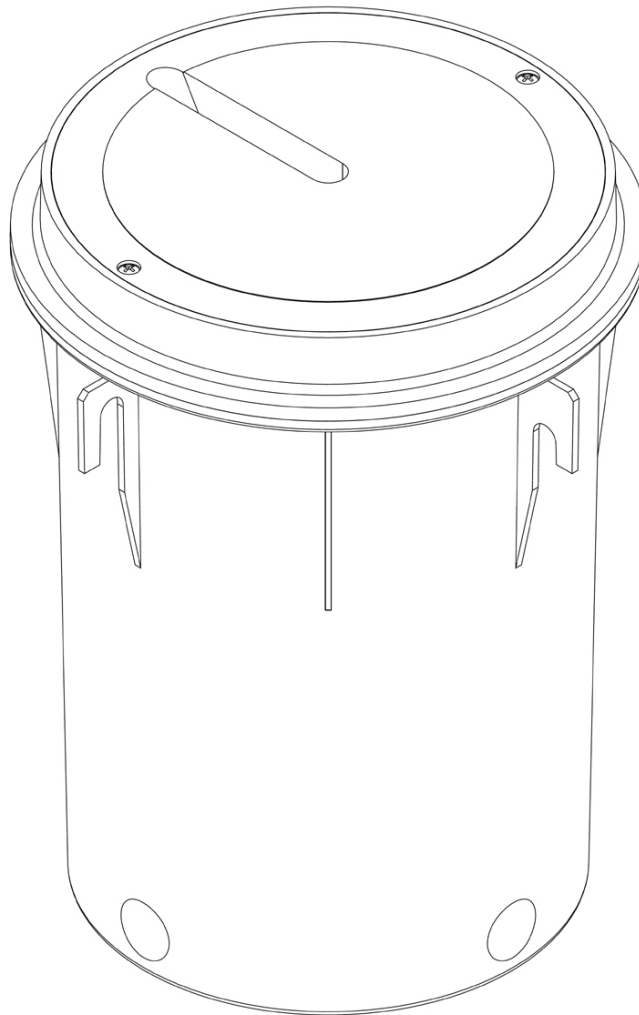


Fiberstars
Light Streams Mini Laminar
Installation Manual
(LSML)



3072091

ETL listed for installations within 5 ft. (1.5M) of outer edge of water



SAVE THESE INSTRUCTIONS!

These directions are provided to ensure the proper installation and operation of Fiberstars Light Streams™ Mini Laminar flow fountain. The maximum lighted distance of the laminar stream should be considered 3ft height and 5ft in distance. If the laminar arc is over the recommended distance, there is a high degree of probability that the lighting will not travel the full distance to the bottom of the laminar flow. Also, if the throw distance is over the recommended distance, the lighting will also fail to go the full distance of the laminar stream.

IMPORTANT:

Read and follow all safety and installation instructions carefully.

The product must be installed in accordance with the applicable installation code by a person familiar with the construction and operation of the product and hazard involved.

IMPORTANT GENERAL SPECIFICATIONS:

1. **The water supply to the Light Streams Laminar fountains should be filtered with a cartridge filter.** Sand filter and DE filters will likely produce small particles of debris that will clog the filter screens internal to the laminar flow fountains.
2. Water supply is dependent upon 3 important factors:
 - a. Pump size – if dedicated pump is used it must be a minimum of a ½ hp and supply proper flow rate at 16 ft of head.
 - b. Plumbing pipe size
 - c. Number of laminar flow fountains on system

NOTE: GENERAL RULE OF THUMB IS THAT EACH MINI LAMINAR REQUIRES A MINIMUM OF 5 GPM. SEE FOLLOWING SECTION ON DESIGN CRITERIA

THE LAMINAR FLOW DECK BOX IS MADE OF ABS MATERIAL. USE ONLY ABS-PVC GLUE WHEN MAKING ANY PLUMBING CONNECTIONS TO THIS DECK BOX

3. Each Fiberstars Light Streams Mini Laminar flow fountain requires 12VAC. **Minimum sized conduit is 3/4"**. Run the supplied 100ft of 12VAC wire from the Light Streams LED driver through the conduit back to the location of your transformer (not included).

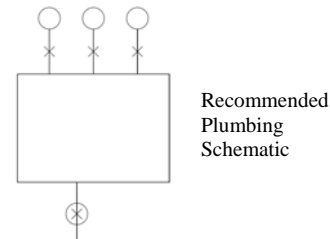
4. Fiberstars Light Streams™ Mini Laminar flow fountains can be placed in most locations from concrete decks, raised bond beams or even soft scapes. Be sure that the distance from the interior pool wall to the mini laminar flow fountain is no further than 2 feet. This would allow the lighted laminar flow stream to be 3 feet into the pool interior.

5. Each fountain requires a 1” PVC water supply that is reduced to 3/4” to connect to the bottom of the deck box.

6. Each mini laminar should also have a gate valve installed for flow adjustment. All gate valves should be located as close as possible to the equipment pad area to reduce water turbulence from entering the mini laminar fountain.

7. On main water supply line install a check valve.

8. A plumbing loop should be utilized.



INSTALLATION OF THE MINI LAMINAR FLOW DECK BOX

1. Reconfirm that fountain is no further than 2 feet away from water surface interior.

2. Prepare location by digging hole 2 feet in diameter and depth.

A. For in deck applications – Level the lid to the finished grade level of decking.

B. For planter areas – Laminar lid should be 2 inches ABOVE the landscape area to prevent materials from intruding or washing into the fountain itself.

3. Remove the laminar flow fountain from the deck box assembly and undo the hose connection at the bottom of the fountain.

4. Plug hose (with included plug), utilizing stainless steel clamp for pressure testing.

5. Place the deck box into the excavated hole with the drain stand pipe pointing in the direction of the desired water flow (towards pool interior). This will place the water connection at the very rear of the Laminar, opposite of the pool wall.

6. The bottom of the deck box can be supported by utilizing the 1” PVC support connection. The support pipe should be approximately 4” in length. You may also support the deck box to any decking rebar to help maintain the proper level by using the rebar support (4) wings in deck box.

7. Attach the 1” PVC water supply line to the reduced 3/4” water inlet connection.



8. Install 3/4" PVC pipe for 12VAC cable run.
9. Install 1" PVC pipe for drain line connection. IT IS IMPERATIVE THAT ALL MINI LAMINAR FLOW FOUNTAINS HAVE PROPER DRAINAGE.
10. Fill excavated area with gravel until gravel reaches approximately 1" up on bottom of deck box.
11. Finish your deck material installation making sure that the Light Streams™ Mini Laminar flow fountains remain level. Utilizing the 3" Adjustable Deck Flange adjust to match your deck height.

After deck box has been installed and system has been pressure tested, the mini laminar flow fountain itself may be reinstalled.

IT IS EXTREMELY IMPORTANT THAT THE WATER SUPPLY TO EACH MINI LAMINAR IS ALLOWED TO BE FLUSHED SO THAT ALL MATERIAL THAT MIGHT BE IN THE LINES ARE BLOWN FREE PRIOR TO BEING REINSTALLED INTO THE LAMINAR FLOW DECK BOX.

ADJUSTING WATER FLOW

The water flow is determined by two factors: GPM water flow and angle of laminar.

Set angle of your laminar flow by using the two adjustment knobs on the inside the deck box on either side of the laminar. Adjust your distance by opening or closing each respective gate valve until the desired distance is achieved. **MAXIMUM HEIGHT IS 3' OVER POOL WATER LEVEL AND DISTANCE IS 5 FEET.**

Initial start up should be done gradually, allowing each mini laminar to fill with water slowly and allowing air to escape. Failure to do so may cause damage to unit and plumbing.

DO NOT EXCEED 15 GPM PER MINI LAMINAR OR DAMAGE CAN BE DONE INTERNALLY.

IMPORTANT NOTES AND REMINDERS

Minimize the number of plumbing fittings in the water run to cut down flow restrictions and water turbulence.

Laminar flow fountains are susceptible to wind conditions and the higher the angle of your fountain the more they may be effected. If your area has regular amounts of high

winds you may consider moving the laminars closer to the pool edge and decreasing the angle of the fountain.

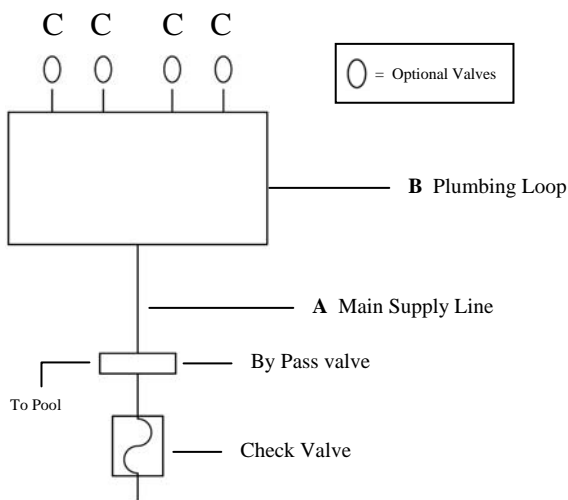
FOR WINTERIZATION, LOOSEN STAINLESS STEEL CLAMP ON WATER SUPPLY HOSE, REMOVE HOSE FROM BARBED FITTING, BLOW WATER LINES CLEAR AND INSTALL PLUG TO SEAL THE WATER HOSE.

If internal screens of the Light Streams™ Mini Laminar become obstructed, this will affect the laminar stream or light output. To correct this, please remove the Light Streams Laminar fountain from the deck box assembly and apply water pressure at the mini laminar fountain exit point. This will back flush the laminar and allow debris to be exited from the bottom.

After back flushing, reinstall the Light Streams Mini Laminar fountain and adjust water flow and angle for desired effect.

	# of Mini Laminars			
	1	2	3	4
GPM	6	14	24	32
Head (FT)	16	19	26	36

	Pipe Size		
# of units	A	B	C
1	1"	1"	3/4"
2	1.5"	1"	3/4"
3	2"	1.5"	3/4"
4	2"	1.5"	3/4"



**Fiberstars Light Streams
Mini Laminar Flow and
Plumbing Chart**

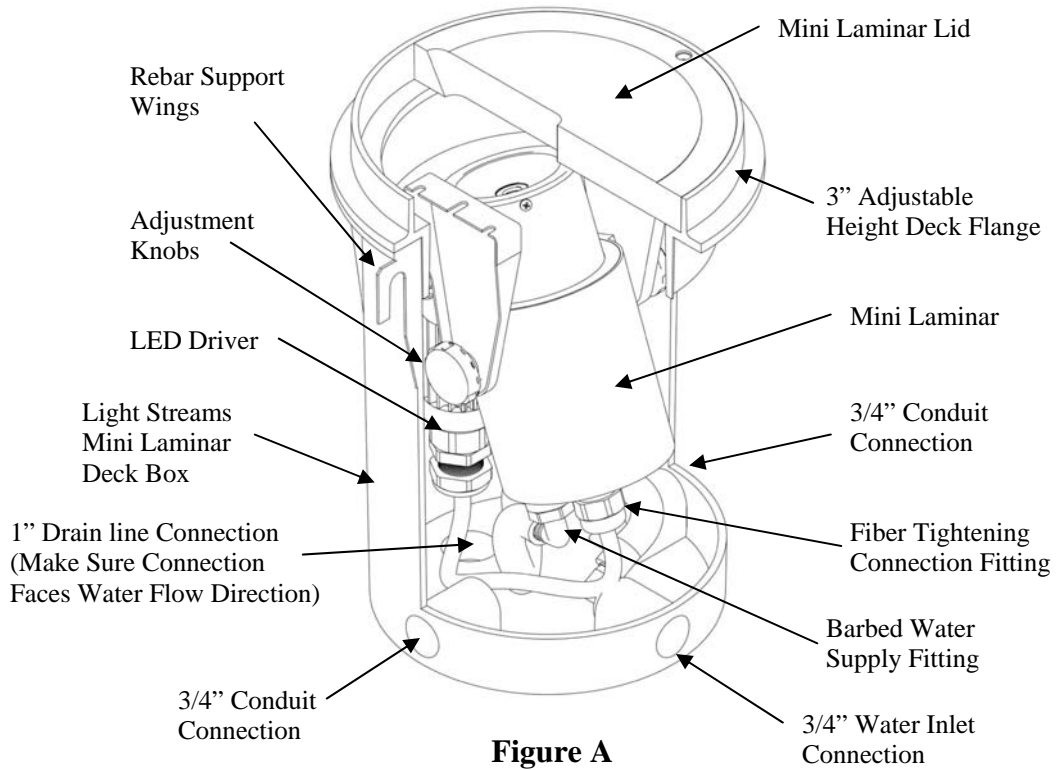


Figure A

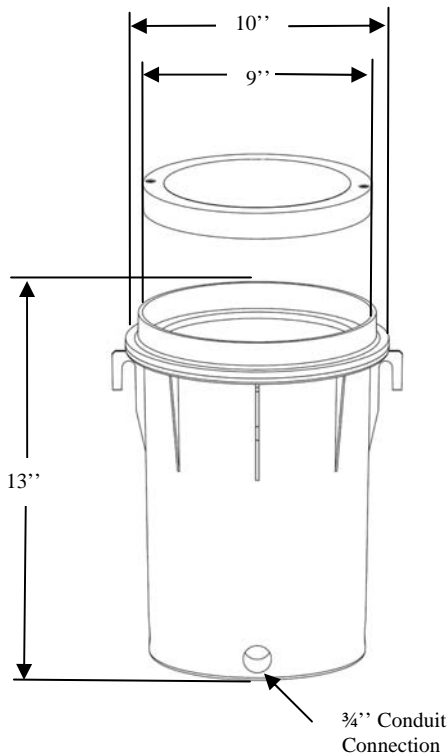


Figure B

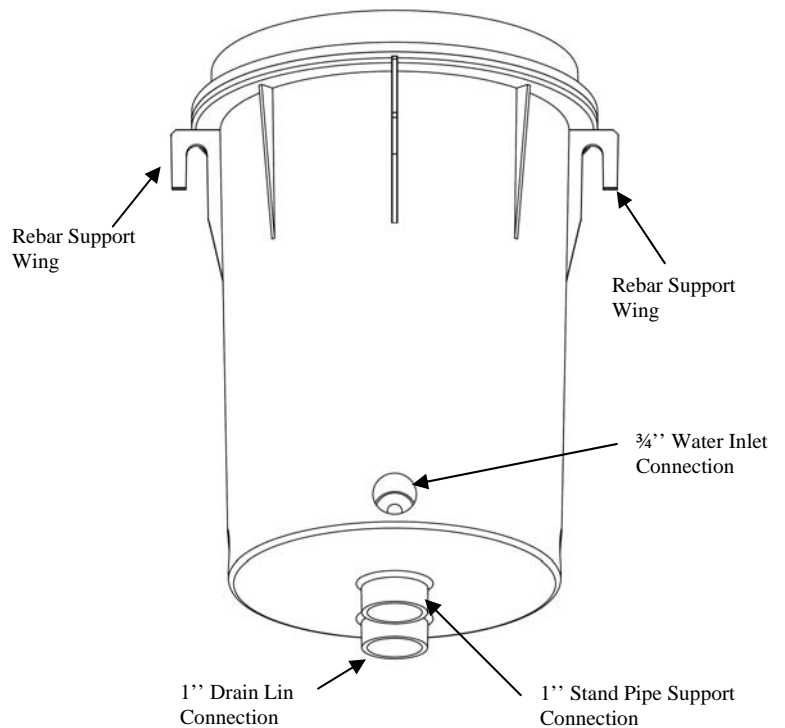


Figure C