AmerScapes® Fiber Optic Lighting System
Installation Instructions

IMPORTANT SAFETY INSTRUCTIONS
READ AND FOLLOW ALL INSTRUCTIONS
SAVE THESE INSTRUCTIONS

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⚠ WARNING

Before installing this product, read and follow all warning notices and instructions accompanying this product. Failure to follow safety warnings and instructions can result in severe injury, death, or property damage. Call (800) 831-7133 for additional free copies of these instructions.

Important Notice

Attention Installer.

This manual contains important information about the installation, operation and safe use of this product. This information should be given to the owner/operator of this equipment.

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Pentair Water
Pool and Spa™

SECTION I.   AMERSCAPES® FIBER OPTIC LIGHTING SYSTEM INSTALLATION

A. General Information.

1. The following instructions contain installation guidelines for the AmerScapes® Fiber Optic landscape lighting line. For information on FIBER*works*® installation please refer to the FIBER*works*® Installation and Service Manual (P/N 99293100 or 840259), and FIBER*works*® Installation Video (P/N P3-202). Optimal performance of this product depends on a working knowledge of installation practices. Please read and understand the installation guidelines before attempting to install FIBER*works*® Fiber Optic Systems.

B. AmerScapes® Fiber Optic Lighting System Specifications

1. All models use AmerGlow™ 12, 30 or 50 fiber cable, (except the directional spot which can accept 70 and 100 fiber cable). See Table 1. **"Light Transmission vs. Distance"** and Table 2. **"Minimum AmerGlow Cable Size vs. Length"**, useful guides to help with AmerGlow™ cable selection.

TABLE 1.								
FIBER EQUIVALENT LIGHT TRANSMISSION at 10 ft.								
AMERGLOW CABLE SIZES								
Cable Length	325 fiber equiv.	225 fiber equiv.	170 fiber equiv.	100 fiber equiv.	70 fiber equiv.	50 fiber equiv.	30 fiber equiv.	12 fiber equiv.	% of Light Lost
10	325	225	170	100	70	50	30	12	
12	312	216	163	96	67	48	29	12	4.0%
14	300	208	157	92	65	46	28	11	7.8%
16	288	199	151	89	62	44	27	11	11.4%
18	276	191	145	85	60	43	26	10	14.9%
20	266	184	139	82	57	41	25	10	18.3%
25	240	166	126	74	52	37	22	9	26.1%
30	217	150	113	67	47	33	20	8	33.2%
35	196	136	103	60	42	30	18	7	39.6%
40	177	123	93	55	38	27	16	7	45.4%
45	160	111	84	49	35	25	15	6	50.7%
50	145	100	76	45	31	22	13	5	55.4%
55	131	91	68	40	28	20	12	5	59.7%
60	118	82	62	36	25	18	11	4	63.6%
70	97	67	51	30	21	15	9	4	70.2%
80	79	55	41	24	17	12	7	3	75.7%
90	65	45	34	20	14	10	6	2	80.1%
100	53	37	28	16	11	8	5	2	83.8%

Table 2.									
Minimum AmerGlow Cable Size vs. Length									
AmerScape Fixture	*Minimum Fiber Count (see Table 1)*	Cable Length							
		15'	25'	35'	45'	55'	65'	75'	85'
Frosted Flower	**10**	12	30	30	30	30	50	50	50
Single Tier	**25**	30	30	30	50	50	70	70	70
Directional Spot	**25**	30	30	50	50	70	70	100	100
Step/Wall Light	**10**	12	30	30	30	50	50	70	70
GlowRod*	**10**	12	30	30	30	30	50	50	50
FiberWand*	**25**	30	30	50	50	70	70	✕	✕
Cascade Light*	**25**	30	30	30	50	50	50	✕	✕
Lens sub-Assy*	**70**	100	100	170	170	170	225	325	325

* Other FIBER*works*® products that can be used for landscape lighting.

1. Whenever possible, locate Photon Generator® in the center of a landscape design to keep cable lengths as short as possible.

2. After installation is complete, if required, lighting can be balanced by trimming fibers inside the Photon Generator® from the cables going to the brighter fixtures.

NOTE

AmerGlow™ fiber optic cables cannot be spliced or repaired once damaged. Though not required, protective conduit is recommended to prevent costly damage.

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3. All models can be used with or without conduit. When conduit is used we recommend ¾ in. or larger diameter. Use sweep elbows and sweep 45 deg. elbows. **DO NOT** use plumbing 90 or 45 deg. elbows.

   a. Using the right conduit and fittings will allow the cable to be fed much easier, and will prevent damage to the fiber optics, see Table 3.

4. To obtain the best performance from your FIBER*works*® and AmerScapes® Fiber Optic Lighting System, Pentair Water Pool and Spa, Inc. recommends the Professional Fiber Termination Kit, p/n 21005500.

Table 3.								
Maximum Number of AmerGlow								
Cables per Conduit								
	AmerGlow Cable Size							
Conduit Size	12	30	50	70	100	170	225	325
1/2"	4	2	2	1	N/A	N/A	N/A	N/A
3/4"	6	3	3	2	1	1	N/A	N/A
1"	9	5	4	3	2	1	1	1
1-1/4"	14	9	7	6	4	1	1	1
1-1/2"	18	12	10	9	5	3	1	1

SECTION II.   FROSTED FLOWER INSTALLATION (LARGE & MEDIUM)

A. Frosted Flower models are used to light entryways, pathways, planters or anywhere a circular light pattern of about 2 ft. is desired. AmerGlow™ 12, 30 or 50 fiber cable is required for installation.

B. Frosted Flowers include the following items:
    1. One (1) large or medium fixture.
    2. One (1) Frosted Flower Globe with O-ring.
    3. One (1) cable tie.
    4. One (1) ¾ in. groundstake.

C. Fiber Termination procedure.

   There are two ways to terminate the fibers at the Frosted Flower.

   Method (1) produces a 2 ft. circle of light on the ground.

   Method (2) provides a more diffused light pattern and the appearance of a stamen inside of the Globe.

METHOD (1)
    1. Feed the AmerGlow™ fiber cable through the hole provided on side of groundstake and fixture until 3 in. of the jacket is visible, see Figure 1. Drill hole larger if needed.
    2. Thread the Frosted Flower fixture on to the groundstake, see Figure 2.
    3. Strip approximately 1 in. of the cable jacket from the end of the AmerGlow™ fiber cable.
    4. Place the cable tie around the AmerGlow™ fiber cable jacket just above the exposed fibers, pull tight and cut off excess.
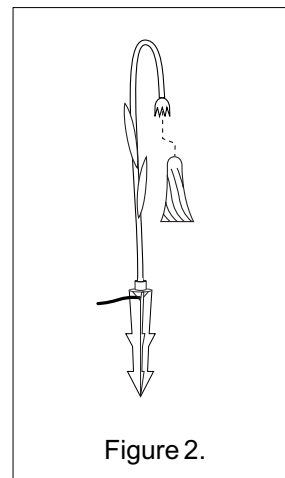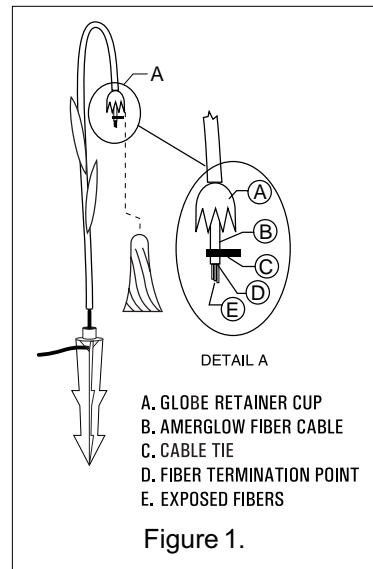

DETAIL A

A. GLOBE RETAINER CUP
B. AMERGLOW FIBER CABLE
C. CABLE TIE
D. FIBER TERMINATION POINT
E. EXPOSED FIBERS

Figure 1.

⚠ WARNING!

FiberKnife™ reaches extreme temperatures. Grasp the knife only by the handle. Failure to follow these directions can lead to severe burns.

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    5. Preheat the FiberKnife™. Place a small washer over the end of the AmerGlow™ cable and terminate the raw fibers immediately below the cable tie, this will give a stronger more focused light.

METHOD (2)
    1. Allow approximately 3 in. of exposed fiber to hang from the cable tie. Use sandpaper to remove coating from fibers. This will cause the fibers to emit light sideways creating a diffused glow.

D. Installation procedure.
    1. Pull the AmerGlow™ fiber cable backwards through the fixture until the cable tie is seated inside the globe retainer cup, see Figure 1.
    2. Position the Frosted Flower groundstake by pushing it into the soil. **Do not force**. In hard soil conditions, soak the ground with water before inserting the groundstake.
    3. Run the AmerGlow™ fiber cable to the Photon Generator®.
    4. Carefully install the Frosted Flower Globe using clear silicone adhesive or sealant.

Figure 2.

SECTION III. SINGLE TIER INSTALLATION

A. The Single Tier model is used to light entryways, pathways, or anyplace where small area downlighting is desirable in a circular light pattern of about 2-3 ft. AmerGlow™ 12, 30 or 50 fiber cable is required for installation.

B. The Single Tier includes the following items.

    1. One (1) Single Tier fixture with shade.

    2. One (1) cable tie.

    3. One (1) 3/4 in. groundstake.

C. Installation procedure.

    1. Feed the AmerGlow™ fiber cable through the hole provided on the side of the groundstake and through the fixture stem. Drill hole larger if needed.

    2. Thread the Single Tier on to groundstake.

    3. Strip 4 in. of the AmerGlow™ jacket from the end of the fiber cable, see Figure 3, Detail A.

    4. Place the cable tie around the AmerGlow™ cable jacket just behind the exposed fibers, pull tight and cut off excess, see Figure 3, Detail A.

    5. Use sand paper to remove coating from fibers.

    6. Assemble the Single Tier shade on to the fixture stem. (The fibers should extend out to the edge of the shade. Use wire cutters to trim the fibers that are too long and visible outside the shade, see Figure 3-B.)

    7. Arrange the fibers in thirds so they are equally divided and evenly spaced between the three sections of the shade.

    8. Position the Single Tier groundstake by pushing it into the soil. **Do not force**. In hard soil conditions, soak the ground with water before inserting the groundstake.

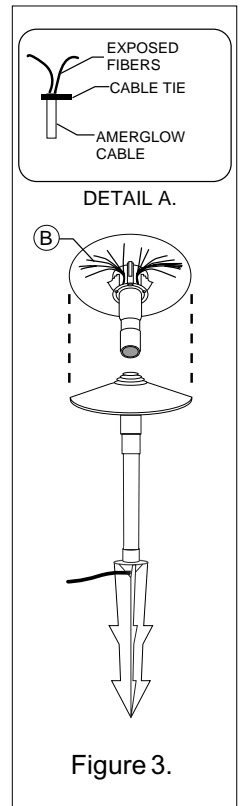   9. Run AmerGlow™ fiber cable to the Photon Generator®.

SECTION IV. DIRECTIONAL SPOT INSTALLATION

A. The Directional Spot light is used to direct light at any object to uplight, accent, highlight or wash the given object with fiber optic light. The Directional Spot can be used with 30, 50, 70 or 100 AmerGlow™ fiber cable. The Directional Spot is multidirectional and will project light up to 40 ft. (depending on cable size and length) with a 60 deg. beamspread.

B. The Directional Spot includes the following items:

    1. One (1) Directional Spot fixture with mount and 3/4 in. groundstake.

    2. One (1) lens seal nut.

    3. One (1) 30, 50 fiber grommet.

    4. One (1) 70 fiber grommet.

    5. One (1) 100 fiber grommet.

DETAIL A.

Figure 3.

B. Installation procedure.

1. Remove the front window plate/glare shield by sliding (or pulling) the plate/glare shield off the fixture box, see Figure 4.

2. Run the AmerGlow™ fiber cable directly into the hole provided in the back of the fixture box, see Figure 4.

3. Pull the cable through the front of the fixture box leaving about 4 in.

4. Using the cable stripping tool, strip about 1 in. of the cable jacket exposing the fibers.

5. Slide the compression nut over the cable, see Figure 4, Detail 1.

6. Slide the appropriate grommet over the cable until the jacket is flush with the front of the grommet, see Figure 4, Detail 1.

7. Place the seal nut over the grommet. Tighten the compression nut into the seal nut until the grommet is pushed flush with the top opening of the seal nut.

Detail 1.

A. INSIDE RETAINER CLIPS
B. FIXTURE BOX
C. PLATE/GLARE SHIELD
D. COMPRESSION NUT
E. SEAL NUT
F. GROMMET
G. AMERGLOW FIBER CABLE
H. GROUNDSTAKE

Figure 4.

8. Thread the fiber cutting shield, (found in the Professional Fiber Termination Kit), over the seal nut. Terminate the fibers using the FiberKnife™.

9. Once the fibers are terminated, carefully pull the AmerGlow™ fiber cable backwards through the fixture box to the inside retainer clips, see Figure 4.

10. Bend or spread the retainer clips and let them grip the last seal nut thread. This will hold the seal nut in place.

11. Replace the front window plate/glare shield.

12. Position the Directional Spot groundstake by pushing it into the soil. **Do not force**. In hard soil conditions, soak the ground with water before inserting the groundstake, see Figure 4.

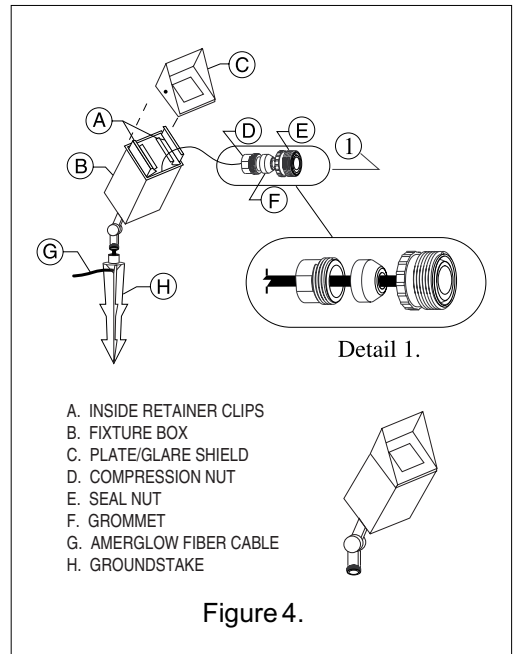13. Run the AmerGlow™ fiber cable to the Photon Generator®.

SECTION V.   STEP/WALL FIXTURE INSTALLATION

A. The Step/Wall fixture is used for recessed wall, step, entryway, planters or any where creative recessed fiber optic lighting is desired. The Step/Wall fixture produces a soft diffused light with a white opaque lens. AmerGlow™ 12, 30, 50 or 70 fiber cable is required for installation.

B. The Step/Wall recessed wall fixture includes the following items:

1. One (1) Step/Wall recessed wall fixture ~ (8 ¾ in. x 2 ¾ in. x 2 in.).

2. Two (2) no. 8 x 2 in. wall mounting screws.

3. One (1) cable tie.

4. One (1) cable tie mounting platform.

C. Installation procedure.

1. Loosen the two lens retaining screws, and remove the front cover and lens, see Figure 5.

2. Remove appropriate side knockout.

3. Mount the fixture body into the recessed area using the 2 in. screws provided.

4. Connect ½ in. conduit (if used) using ½ in. male and locknut.

5. Place mounting platform with cable tie onto the reflector next to the cable inlet.

6. Feed the AmerGlow™ cable through the hole and inner panel on either side of the fixture body until about 6 in. of cable hangs out of the front.

AmerGlow™ CableJacket   Mounting Platform   3/4 IN. DIA. (2 PLCS.)

Cable Tie

Figure 5.

7. Using the cable stripping tool, strip about 1 in. of the cable jacket from the end of the AmerGlow™ cable.

8. Preheat the FiberKnife™, place a small washer over the end of the fibers and terminate the fibers next to the end of the cable jacket.

9. Pull the cable back into position and place the cable tie around the AmerGlow™ cable jacket just behind the exposed fibers. Pull tight and cut off excess.

10. Replace the front plate and lens and tighten the two retainer screws.

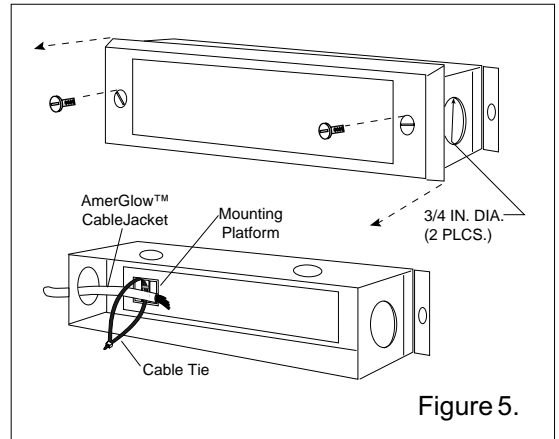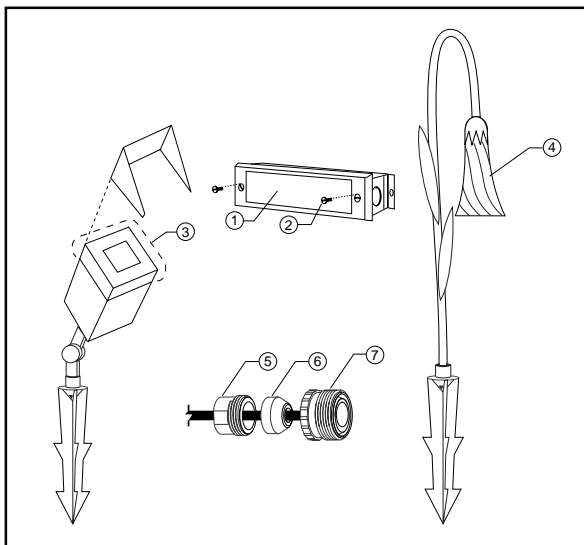11. Run the AmerGlow™ cable to the Photon Generator®.

SECTION VI. TECHNICAL DATA

A. Replacement parts.

Item No.	Part No.	Description
1	24529300	Glass for Step/Wall fixture, w/screws
2	24529100	Screw, 8-32 X 5/8 in.
3	24529400	Cover w/glass for Directional Spot fixture
4	24529000	Globe, glass, Frosted Flower fixture
5	22100400	Compression nut
6	22101000	Grommet, AmerGlow™ 12 fiber cable
6	22101100	Grommet, AmerGlow™ 30 fiber cable
6	22101200	Grommet, AmerGlow™ 70 fiber cable
6	840114	Grommet, AmerGlow™ 100 fiber cable
7	22103100	Seal nut, w/O-ring

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