

SUPERVISION[®]

Hayward Design Hints

Underwater Lighting – Questions to ask before you start:

1. What color is the surface of the pool?

Light or white surfaces reflect light & color best. Dark surfaces absorb light and won't show much color change. More fiber is required to light dark pools. Avoid underwater lighting in black pools (Perimeter, however, may be used).

2. Where is the house in relation to the pool?

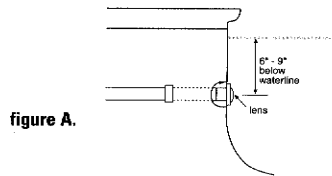
Lenses should be placed facing AWAY from the house or primary viewing area. This way the client will only see the wash of color on the opposite wall, and won't be staring directly into the light.

3. How much fiber should I put in each lens?

Single lens applications will require a large fiber size (225 or 300 strands) than a multiple lens application (usually 150 strands per lens).

General Guidelines for underwater lighting

- Mount lenses 6-9" below water level. Watch for swimouts as lens placement above the bench will cause shadows and below the bench will be too deep.



- Single lens applications- Mount lens in the deep end of the pool. See examples in figure 1, 2, 3 for reference.

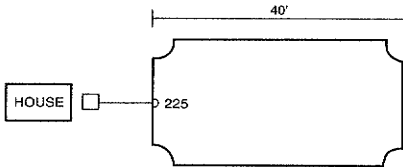


figure 1. Light Surface

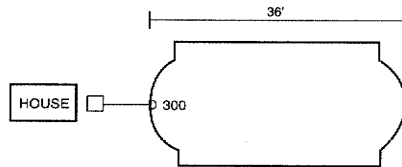


figure 2. Medium Surface

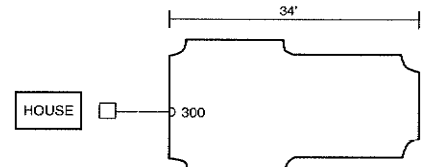


figure 3. Dark Surface

- Multiple lens applications- Lenses should be placed facing away from the house or primary viewing area. The average sized residential pool will use three lenses on the long wall, shining across the width of the pool. See examples in figure 4, 5, 6 for reference.

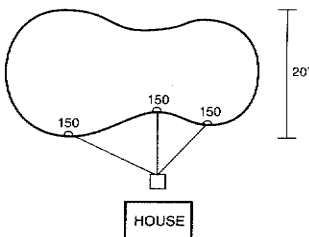


figure 4. Light Surface

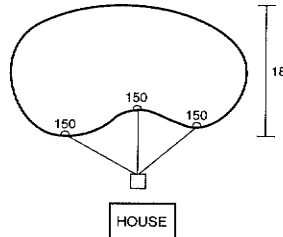


figure 5. Medium Surface

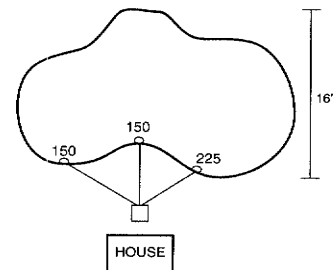


figure 6. Dark Surface

- Spa lenses may be placed in the footwell.
- If light source capacity allows, use 25 or 50 strands in a lens assembly to illuminate the steps.

Possible Cable Specifications

	Single Lens (Deep end)			Single Lens (Deep end)		
Vinyl, Fiberglass, Gunite	Pool Finish	Length	No. of Fibers	Pool Finish	Length	No. of Fibers
	white	up to 32'	225	light	up to 36'	225
	white	32'-40'	225	light	up to 38'	300
	white	40'-42'	300	dark	up to 34'	225
	medium	up to 36'	225	dark	up to 36'	300
	medium	up to 38'	300	black	up to 30'	225 (white light only)
	dark	up to 32'	225	black	up to 34'	300 (white light only)
	dark	up to 34'	300			
	black	not recommended				

Perimeter Lighting – Questions to ask before you start:

1. What type of cable should I use?

Three styles of sideglow cable are available from a low cost 23 strands that fits into industry standard flat tracks to 32 or 42 strands with round profiles for easy installation and when a brighter band of light is desired.

2. If a vinyl liner pool, what type of coping is being used?

Some coping is fiber optic ready, and this will determine which fiber it accepts.

Important Note: Sideglow cable is used to accentuate the outline of the pool. It does not illuminate the body of water.

General Guidelines for perimeter lighting

- Sideglow cable must start and terminate at the light source. The total length of a cable cannot exceed 200', including the distance to and from the illuminator.
- The shorter the loop of cable, the brighter and more even the effect.
- When possible, a separate loop for the spa helps keep the pool loop short and bright (see figure 7).

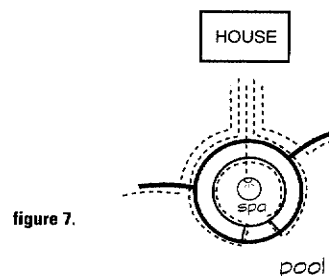


figure 7.

- If total length exceeds 200', then multiple light sources are necessary. Those light sources must be synchronous. Start the run at one light source, go half way around the pool and exit to a second light source. Then start another run at the second light source, go around the other half of the pool and terminate at the first light source. Try to keep each run approximately the same length for even illumination (see figure 8).

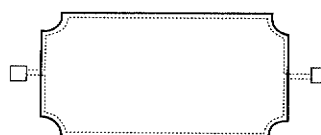
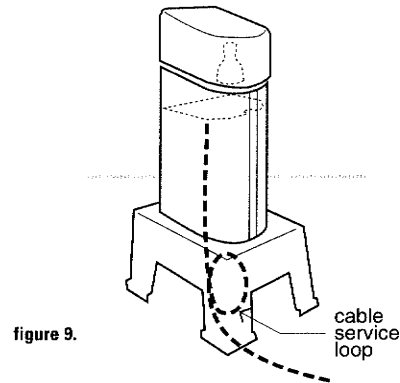


figure 8.

Next Step

After lens placement, amount of fiber per lens and light source placement are drawn on the pool plan, the amount of fiber required can be estimated. Be Sure to **add an extra 5' or so to each run of endglow fiber and an extra 10' to the total length of perimeter including the distance to and from the light source.** This will ensure enough cable for variations in the actual installation, as well as allowing for a service loop at the light source (see figure 9).



Helpful Hints

- Try to place light source as close to the pool (within code) as possible. This will not only improve cable performance (the longer the cable run, the more light that is lost), but ultimately save on the overall job cost.
- Don't forget to figure in conduit and sweeps when quoting the fiber optic installation.
- If perimeter cable is desired, be sure to add in the appropriate track for installation.

Important Note: One of the most common problems seen in the field is the fiberhead is cut without leaving any extra fiber in a service loop!! If any addition of fiber is desired (landscape lighting, etc), there is not enough fiber left over to cut the fiber head again. **Leave at least an 18" service loop of cable coiled in the base before terminating fiber with hot knife in the fiberhead.**