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PGS. 4-7 POOL PROFILES
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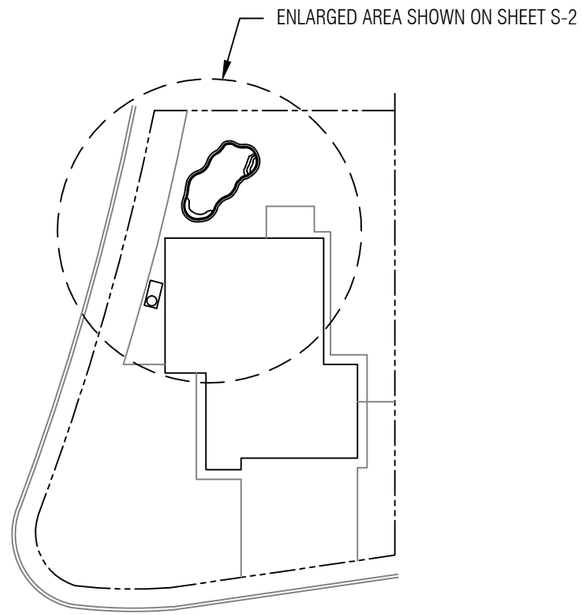
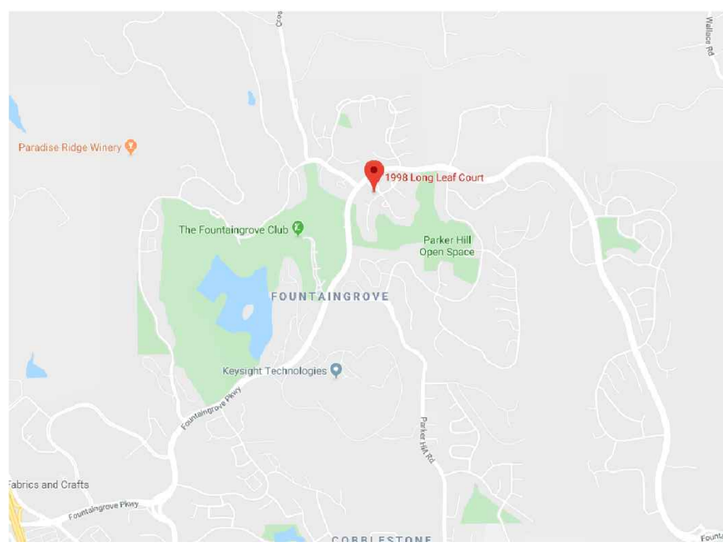
APPLICABLE CODES AND REGULATIONS

CALIFORNIA BUILDING CODE, 2019
CALIFORNIA PLUMBING CODE, 2019 EDITION (CPC)
CALIFORNIA ELECTRICAL CODE, 2019 EDITION (CEC)
CALIFORNIA MECHANICAL CODE, 2019 EDITION (CMC)
CALIFORNIA FIRE CODE, 2019 EDITION (FC)
CALIFORNIA ENERGY CODE, 2019 EDITION (EC)
CALIFORNIA GREEN BUILDING STANDARDS CODE, 2019 EDITION (GBC)

INCLUDING ALL AMENDMENTS AS ADOPTED
BY THE GOVERNING JURISDICTION.



SITE PLAN
NTS



LOCATION PLAN

POOL NOTES:

GATES AND BARRIERS:

ANY PEDESTRIAN ACCESS GATES THROUGH THE ENCLOSURE SHALL OPEN AWAY FROM THE SWIMMING POOL AND BE SELF-CLOSING WITH A SELF-LATCHING DEVICE AND RELEASE MECHANISM PLACED NO LOWER THAN 60" ABOVE THE GROUND. ALL ACCESS GATES SHALL COMPLY WITH THE REQUIREMENTS OF SECTIONS 3109.5.1.2 THROUGH 3109.5.1.5 AND SHALL BE EQUIPPED TO ACCOMMODATE A LOCKING DEVICE.

A MINIMUM HEIGHT OF 60" MEASURED FROM THE GROUND TO THE SIDE OF THE BARRIER OR ENCLOSURE THAT FACES AWAY FROM THE SWIMMING POOL.

A MAXIMUM VERTICAL CLEARANCE FROM THE GROUND TO THE BOTTOM OF THE ENCLOSURE OF 2" GAPS OR VOIDS. IF ANY, DO NOT ALLOW PASSAGE OF A SPHERE EQUAL TO OR GREATER THAN 4" IN DIAMETER.

AN OUTSIDE SURFACE FREE OF PROTRUSIONS, CAVITIES OR OTHER PHYSICAL CHARACTERISTICS THAT WOULD SERVE AS HAND-HOLDS OR FOOT-HOLDS THAT COULD ENABLE A CHILD BELOW THE AGE OF 5 YEARS TO CLIMB OVER SUCH AS SOLID BARRIER SURFACES, REMOVABLE MESH POOL FENCING, CLOSELY SPACED HORIZONTAL MEMBERS (SPACING NO MORE THAN 1.75"), WIDELY SPACED HORIZONTAL MEMBERS (SPACING NO MORE THAN 1.75"), CHAIN LINK OR OTHER WIRE FENCE (SPACING NO MORE THAN 1.75"), DIAGONAL MEMBERS (SPACING NO MORE THAN 1.75"), ETC.

THE POOL WILL NOT BE EQUIPPED WITH AN AUTO COVER, BUT WILL HAVE AN APPROVED MOTION ALARM IN POOL WATER.

WHERE A WALL OF A HABITABLE OR OCCUPIABLE BUILDING SERVES AS PART OF THE ENCLOSURE OR BARRIER FOR A POOL, DOORS WITH DIRECT ACCESS TO THE POOL THROUGH THAT WALL SHALL BE EQUIPPED WITH AN EXIT ALARM THAT PRODUCES AN AUDIBLE WARNING WHEN THE DOOR AND/OR ITS SCREEN, IF PRESENT, ARE OPENED. THE EXIT ALARM SHALL BE LISTED IN ACCORDANCE WITH UL 2018. A DEACTIVATION SWITCH SHALL BE LOCATED 54" OR MORE ABOVE THE THRESHOLD OF THE DOOR.

ALL DOORS PROVIDING DIRECT ACCESS FROM THE HOME TO THE POOL OR SPA SHALL BE EQUIPPED WITHA SELF-CLOSING, SELF-LATCHING DEVICE WITH A RELEASE MECHANISM PLACED NO LOWER THAN 54" ABOVE THE FLOOR.

ENTRAPMENT AVOIDANCE:

SUCTION OUTLETS SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH ANSI/APSP-7 AND THE FOLLOWING:

THE SUCTION OUTLET OF A NEW POOL OR SPA FOR WHICH A PERMIT IS ISSUED SHALL BE EQUIPPED TO PROVIDE CIRCULATION
THROUGHOUT THE POOL OR SPA BY INSTALLING AT LEAST 2 CIRCULATION DRAINS PER PUMP THAT SHALL BE HYDRAULICALLY BALANCED AND SYMMETRICALLY PLUMBED THROUGH ONE OR MORE 'T' FITTINGS AND THAT ARE SEPARATED BY A DISTANCE OF A LEAST 3' IN ANY DIMENSION BETWEEN THE DRAINS. SUCTION OUTLETS THAT ARE LESS THAN 12" ACROSS SHALL BE COVERED WITH ANTI-ENTRAPMENT GRATES, AS SPECIFIED IN THE ASME/ANSI STANDARD A 112.19.8, THAT CANNOT BE REMOVED EXCEPT WITH THE USE OF TOOLS. SLOTS OF OPENINGS IN THE GRATES OR SIMILAR PROTECTIVE DEVICES SHALL BE A SHAPE, AREA AND ARRANGEMENT THAT WOULD PREVENT PHYSICAL ENTRAPMENT AND WOULD NOT POSE ANY SUCTION HAZARD BATHERS.

WEST COAST FIBERGLASS POOLS
P.O. BOX 880
SANTA ROSA, CA. 85402

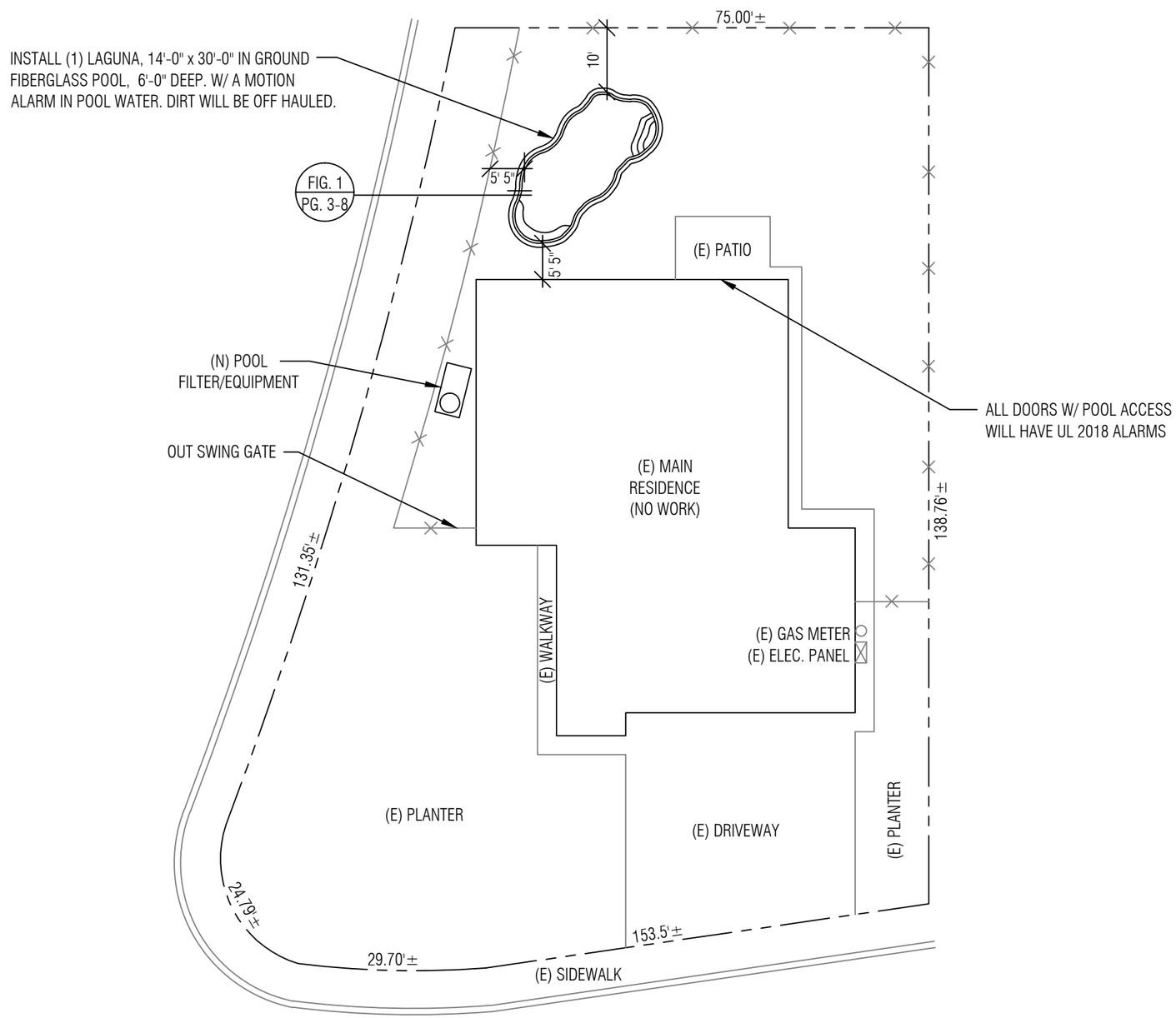
NORTH BAY PERMIT SERVICES
SoCal PERMIT SERVICES
PUTTING YOUR PERMIT NEEDS FIRST!
980 HOPPER AVENUE, SANTA ROSA CA. 95403
(707) 527-7727 (PHONE), (707) 528-7663 (FAX)

APN 173-580-019

SHARON EVANS
1998 LONG LEAF COURT
SANTA ROSA, CA 95403

DATE	12.12.19
SCALE	NTS
DRAWN BY	TJA
JOB	EVANS
SHEET	S-1

SAFETY NOTES; PROPERTY WILL HAVE FENCE WITH OUT SWING GATE, ALARMS ON ALL POOL ACCESS DOORS AND A MOTION ALARM IN POOL WATER



SITE PLAN
1" = 20'

LONG LEAF COURT

SCOPE OF WORK:
INSTALL (1) LAGUNA 14' x 30' IN GROUND FIBERGLASS POOL
PUMP: JANDY 2HP VARIABLE SPEED
FILTER: JANDY CL 340 CARTRIDGE
HEATER: JANDY JXL 400 PROPANE 400,000 BTU

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APN 173-580-019

SHARON EVANS
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DATE	02.25.20
SCALE	1" = 20'
DRAWN BY	TJA
JOB	EVANS
SHEET	S-2

5.7 Swimming Pool and Spa Heating

5.7.1 Swimming Pool and Spa Types

The Standards now include many additional requirements for residential swimming pool filtration equipment which affect pump selection and flow rate, piping and fittings, and filter selection. These new Standards are designed to reduce the energy used to filter and maintain the clarity and sanitation of pool water.

5.7.2 Mandatory Requirements

Before any pool or spa heating system or equipment may be installed, the manufacturer must certify to the Energy Commission that the system or equipment complies with §110.4 and §110.5. The requirements include minimum heating efficiency according to Appliance Efficiency Regulations, an on-off switch outside the heater, permanent and weatherproof operating instructions, no continuous pilot light, and no electric resistance heating (see exceptions below).

§110.5

Pool and spa heaters may not have continuously burning pilot lights.

§110.4

Outdoor pools and spas with gas or electric heaters shall have a cover installed. The cover should be fitted and installed during the final inspection.

There are two exceptions for electric heaters, which may be installed for:

a. Listed package units with fully insulated enclosures (e.g., hot tubs), and with tight-fitting covers, insulated to at least R-6.

b. Pools or spas getting 60 percent or more of their annual heating from site solar energy or recovered energy.

1. Pool Pump Requirements

For maximum energy efficiency, pool filtration should be operated at the lowest possible flow rate for a time period that provides sufficient water turnover for clarity and sanitation. Auxiliary pool loads that require high flow rates such as spas, pool cleaners, and water features, should be operated separately from the filtration to allow the filtration flow rate to be kept to a minimum.

§150.0(p)1

All pumps and pump motors shall comply with the specifications of the Appliance Efficiency Regulations.

The pool filtration flow rate may not be greater than the rate needed to turn over the pool water volume in 6 hours or 36 gpm, whichever is greater. This means that for pools of less than 13,000 gallons the pump must be sized to have a flow rate of less than 36 gpm and for pools of greater than 13,000 gallons, the pump must be sized using the following equation:

Max Flow Rate (gpm) = Pool Volume (gallons)
360min.

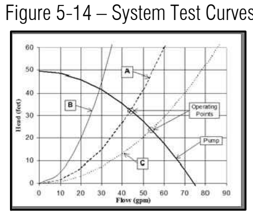
These are maximum flow rates. Lower flow rates and longer filtration times are encouraged and will result in added energy savings.

Pools with auxiliary pool loads must use either a multi-speed pump or a separate pump for each auxiliary pool load. For example, if a spa shares the pool filtration system, either a multi-speed pump must be used or a separate pump must be provided to operate the spa. If the pool system can be served by one pump of less than 1 total-hp in capacity, the pump may be single speed.

Filtration pump motors with a capacity of 1 total-hp or more must be multi-speed.

All pool pumps sold in California must be tested and listed with the Energy Commission according to the Appliance Efficiency Regulations. Pump manufacturers must list flow rate, power, and energy factor at each of three system curves (see Figure 5-14). For pools equal to or less than 17,000 gallons, a pump must be chosen such that the flow rate listed for Curve A is less than the 6-hour turnover rate. For pools greater than 17,000 gallons, a pump must be chosen such that the listed flow rate at Curve C is less than the 6-hour turnover rate.

Figure 5-14 – System Test Curves



2. Pool Pump Controls

Pool controls are a critical element of energy efficient pool design. Modern pool controls allow for auxiliary loads such as cleaning systems, solar heating, and temporary water features without compromising energy savings.

§110.4(b)

A time switch or similar control mechanism must be installed as part of the pool water circulation control system that will allow all pumps to be set or programmed to run only during the off-peak electric demand period and for the minimum time necessary to maintain the water in the condition required by applicable public health standards. Solar system that requires pumps to during peak hours must also have control mechanism installed

§150.0 (p)1

Multi-speed pumps must have controls that default to the filtration flow rate when no auxiliary pool loads are operating. The controls must also default to the filtration flow rate setting within 24 hours and must have a temporary override capability for servicing.

3. Pool Pipe, Filter, and Valve Requirements

System design for residential pools was introduced in 2008. Correct sizing of piping, filters, and valves reduces overall system head, reduces noise and wear, and increases energy efficiency. Other mandatory requirements include leading straight pipe into the pump, directional inlets for mixing, and piping to allow for future solar installations.

§110.4(b) and §150(p)2

Pool piping must be sized according to the maximum flow rate needed for all auxiliary loads. The maximum velocity allowed is 8 fps in the return line and 6 fps in the suction line. Table 5-9 shows the minimum pipe sizes required by pool volume based on a 6-hour turnover filtration flow rate. These pipe sizes would need to be increased if there are auxiliary loads that operate at greater than the filtration flow rate. Conversely, they could be reduced if the pump is sized for greater than a 6-hour turnover filtration flow rate.

Table 5-9 – Hour Turnover Pipe Sizing

Pool Volume (gallons)		Minimum Pipe Diameter (in)	
Min	Max	Return	Suction
-	13,000	1.5	1.5
13,000	17,000	1.5	2.0
17,000	21,000	2.0	2.0
21,000	30,000	2.0	2.5
30,000	42,000	2.5	3.0
42,000	48,000	3.0	3.0
48,000	65,000	3.0	3.5

There must be a length of straight pipe that is greater than or equal to at least 4 inches pipe diameters installed before the pump. That is, for a 2 inch suction pump, there must be at least 8 inches of straight pipe before the pump's strainer basket.

Traditional hard 90o elbows are not allowed. All elbows must be sweep elbows or a type of elbow that has a pressure drop less than the pressure drop of straight pipe with a length of 30 pipe diameters. For example, a 2 inch elbow must have a pressure drop less than a 5-foot length of 2 inch straight pipe.

Field verification of sweep elbows may be performed by checking that the distance "w" of the installed sweep elbow is greater than that for a hard 90 elbow (refer to Figure 5-15). The difference in measurement between the radial edge of one sleeve to the perpendicular side of the elbow is found to be distinct between sweep elbows and hard 90's. There is sufficient difference in distance "w" such that all sweep elbows exceed the minimum values listed in Table 5-10.

Figure 5-15 below illustrates "w" the dimension between the elbow sleeves and Table 5-10 shows the minimum distances "w" for an acceptable sweep elbow.

Figure 5-15 – Measuring "w" at the Pool Site.

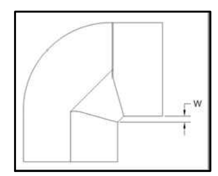


Table 5-10 – Pool Site Measurement for Sweep Elbo

Pipe Diameter	Minimum W (inch)
1.5	3/8
2	1/2
2.5	5/8
3	3/4
4	1

Filters shall be sized using NSF/ANSI 50 based on the maximum flow rate thr
be used are (in ft²/gpm):

Cartridge 0.375

Sand 15

Diatomaceous Earth 2

Backwash valves must be sized to the diameter of the return pipe or two inche
backwash valves have a high pressure drop and are discouraged. Low-loss sli
provide significant savings.

The pool must have directional inlets to adequately mix the pool water.

If a pool does not currently use solar water heating, piping must be installed t
Contractors can choose three options to allow for the future addition of solar h

1. Provide at least 36 inches of pipe between the filter and the heater to allow
equipment.

2. Plumb separate suction and return lines to the pool dedicated to future sola

3. Install built-up or built-in connections for future piping to solar water heatir
capped off tee fitting.

SECTION 110.4 – MANDATORY REQUIREMENTS FOR POOL AND SPA SYSTEMS AND EQUIPMENT

(a) Certification by Manufacturers. Any pool or spa heating system or equipment may be installed only if the manufacturer has certified that the system or equipment has all of the following:

1. Efficiency. A thermal efficiency that complies with the Appliance Efficiency Regulations; and
2. On-off switch. A readily accessible on-off switch, mounted on the outside of the heater that allows shutting off the heater without adjusting the thermostat setting; and
3. Instructions. A permanent, easily readable, and weatherproof plate or card that gives instruction for the energy efficient operation of the pool or spa heater and for the proper care of pool or spa water when a cover is used; and
4. Electric resistance heating. No electric resistance heating; and

EXCEPTION 1 to Section 110.4(a)4: Listed package units with fully insulated enclosures, and with tight-fitting covers that are insulated to at least R-6.

EXCEPTION 2 to Section 110.4(a)4: Pools or spas deriving at least 60 percent of the annual heating energy from site solar energy or recovered energy.

(b) Installation. Any pool or spa system or equipment shall be installed with all of the following:

1. Piping. At least 36 inches of pipe shall be installed between the filter and the heater or dedicated suction and return lines, or built-in or built-up connections shall be installed to allow for the future addition' of solar heating equipment; and

2. Covers. A cover for outdoor pools or outdoor spas that have a heat pump or gas heater.

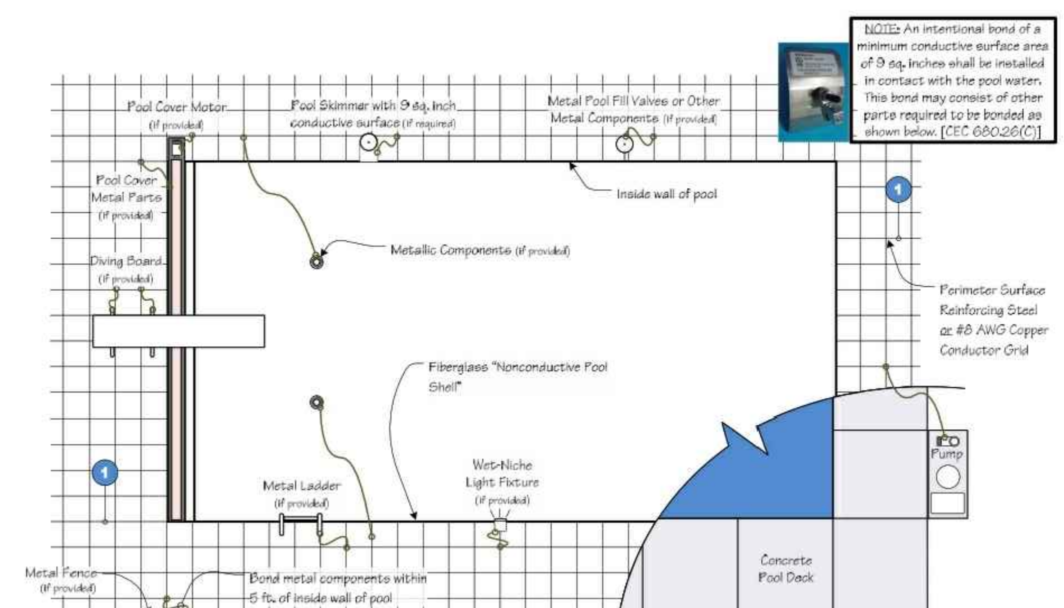
3. Directional inlets and time switches for pools. If the system or equipment is for a pool:

i. The pool shall have directional inlets that adequately mix the pool water; and

ii. A time switch or similar control mechanism shall be installed as part of a pool water circulation control system that will allow all pumps to be set or programmed to run only during the off-peak electric demand period and for the minimum time necessary to maintain the water in the condition required by applicable public health standards.

SECTION 110.5 – NATURAL GAS CENTRAL FURNACES, COOKING EQUIPMENT, AND POOL AND SPA HEATERS: PILOT LIGHTS PROHIBITED

Any natural gas system or equipment listed below may be installed only if it does not have a continuously burning pilot light:
(a) Fan-type central furnaces.
(b) Household cooking appliances.
EXCEPTION to Section 110.5(b): Household cooking appliances without an electrical supply voltage connection and in which each pilot consumes less than 150 Btu/hr.
(c) Pool heaters.
(d) Spa heaters.



Equipotential Bonding – In-Ground "Nonconductive" Fiberglass Pool or Spa - CEC 680.26	
1	Structural Reinforcing Steel per CEC 680.26(B)(1)(a) or Copper Conductor Grid within 6 inches of the pool shell using #8 AWG solid copper conductors at 12 inch x 12inch spacing and conforming with the contour of the pool. [CEC 680.26(B)(1)(b)]
(bonding conductor symbol)	#8 AWG Copper Bonding Conductor with listed connectors approved for the specific use. [CEC 680.26(B) and 250.8]

LIFESTYLE FIBERGLASS POOLS
5100 B-1 CLAYTON ROAD #168
CONCORD, CA. 94521

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SHARON EVANS
1998 LONG LEAF COURT
SANTA ROSA, CA 95403

DATE	12.12.19
SCALE	NTS
DRAWN BY	TJA
JOB	EVANS
SHEET	S-3

General Notes

General

The swimming pools and spas consist of one-piece fiberglass construction shop-formed over a mold. The material is fiberglass reinforced plastic (FRP), a minimum of 1/4 inch (6.4 mm) thick, composed of isophtalic resin, vinyl ester resin, and fiberglass. The surface finish is a neo pentyl glycol gel coat. Viking Pools produces various styles of swimming pools and spas. When installed in accordance to Viking Pools installation procedures, the pools and spas comply with applicable requirements of the following codes:

2018 International Building Code® (IBC)
2018 International Residential Code (IRC)
1997 Uniform Building Code (UBC)
BOCA® National Building Code/2003 (BNBC)
2012/2015 International Plumbing Code® (IPC)
2012/2015 IAPMO Uniform Plumbing Code (IAPMO UPC)
2012 ANSI/APSP/ICC 5a Residential Inground Swimming Pools
2014 ANSI/APSP/ICC-3 Permanently Installed Residential Spas and Swim Spas
2019 California Building Code
2019 California Plumbing Code
2019 California Mechanical Code
2019 California Electrical Code
2019 California Fire Code
2019 California Energy Code
2019 California Residential Code
2013 ANSI/APSP/ICC-7 Suction entrapment Avoidance
2011 ANSI/APSP-16
2018 International Swimming Pool and Spa Code - (ISPSC-ICC)
2007 ANSI/ASME-A112.19.8
2017 National Electric Code (NEC)
2015 Uniform Swimming Pool, Spa, Hot tub Code (IAPMO)

The overall pool dimensions, depths and capacities are shown in Table 1 and Table 4. The units comply with ANSI/NSPI-5, specified in Section AG103.1 of the IRC, and IAPMO IGC-2000*, specified in the UPC.

Models described in Table 2, Table 3, and Table 4 can be placed up to 19-1/2 inches (49.5mm) above ground. These pools and spas may be placed with or without concrete or wood decking. Unless elevated portions of the units are protected from sunlight by soil berms, decking, etc., these portions must be coated with a UV-inhibiting opaque paint that is compatible with the laminate.

All plumbing must comply with the IPC or UPC. Electrical work must comply with the code in effect at the construction site. The pool and spa must remain full of water at all times. A permanent sign, bearing the following statement, must be attached to the pumping equipment:

Notice-The pool or spa is designed to remain full of water at all times. The pool shell may be damaged if the water level is allowed to drop below the skimmer. When appreciable draw-down is noticed or if it becomes necessary to drain the pool or spa, contact Viking Pools or its dealers for instructions.

A permanent label must be installed adjacent to the above sign indicating the Viking Pools dealer's name, address and telephone number.

Installation Procedure:

Viking pools and spas may be installed without a soil investigation by a registered design professional(RDP), subject to the building official's approval, provided none of the following conditions are encountered at the site:

1. The existence of uncontrollable groundwater within the depth of the pool or spa excavation.
2. The existence of an uncompacted fill in contact with any portion of the pool or spa.
3. The existence of any soil types with an angle of repose that will not support the walls of theexcavation at desired slopes.
4. Danger to adjacent structures posed by the proposed pool or spa location.
5. The existence of any cracks or openings in soil that would not confine sand or ½" clean gravel bedding.

If any of the conditions above is encountered, excavation must cease immediately. The specified conditions at the site must then be reviewed and recommendations made by the RDP. The building official must approve the RDP's report before work is completed.

The pool or spa excavation profile must coincide with the contours of the pool. The over excavation is minimum 6 inches (152mm) on the sides and ends. The over excavation at the pool bottom is minimum 4 inches (102mm). The backfill for the pool or spa bottom is a layer of 3-inch-thick (76mm) bedding sand matching the pool or spa profile.

This sand layer is compacted using a manual tamper and water. The pool or spa is then set into place using a crane, excavator or manually and be within 1 inch (25mm) of level. Simultaneous waterfill and sand backfill operations then commence. The sand is compacted with a tamper and water. The installer must ensure that the backfill level and water level are approximately the same throughout this procedure.

After completion of the backfill and plumbing, the decking is placed. Decks are prepared as indicated in Figures 1 though 4:

1. Cantilevered concrete decks are constructed as noted in Figure 1 in all cases.
2. Cantilevered decks are constructed with brick or stone as noted Figure 2 in all cases.
3. Raised bond beams are constructed as noted in Figure 3 in all cases.
4. Aboveground installations are constructed as noted in Figure 4 in all cases.

Barriers are required where pools are on premises of UBC Group R, Division 3, Occupancies or IBC Group R Occupancies. The barriers must comply with Appendix Chapter 4, Division 1, of the UBC or Section 3109.4 of the IBC

Expansive soils:

For installation of pools or spas in expansive soils, the following additional installation details must be followed subject to code official's approval:

1. All surfaces adjacent to the pool or spas must be excavated to a minimum depth of 12 inches (305 mm) beneath the pool bottom and minimum 6 inches (152 mm) behind the pool walls.
2. Any soft or loose soils exposed by step 1 must be removed until exposed material is solid. If the soil is still soft and loose, the upper 6 inches (152 mm) of all horizontal excavation surfaces must be scarified and compacted with mechanical equipment. The compacted surfaces and the excavated wall surfaces must be maintained in a moist condition until the first lift of backfill or fill is placed against the surface. The term compaction implies any method necessary to consolidate the native and fill materials to keep the pool or structure from settling.
3. The excavated bottom area of the pool or spa must be backfilled with granular import material to approximately 6 inches (152 mm) below the bottom of the pool or spa, wetted and compacted.
4. The remaining 6 inches (152 mm) must be backfilled beneath the pool or spa and outside the pool walls with compacted clean sand. The pool or spa must be filled with water as backfilling progresses to a level equivalent to that of the backfill. The backfill must be placed in compacted layers of approximately 6 inches (152 mm) while a uniform height of backfill is maintained around the pool or spa.
5. Positive surface drainage away from the perimeter of the pool and surrounding deck is required and critical to installations in highly expansive soils. Surface area drains and surface drainage swales or subdrains must be placed as needed to prevent ponding or saturation of the soil around the perimeter and vicinity of the pool to prevent excessive shrink-swell or volume changes in the soil.

Identification:

Viking pools and spas are identified by the following information imprinted on the top step of the pool or spa: manufacturer's name (Viking Pools) and address, pool or spa model designation, a coded serial number and the evaluation report number (ESR-2014).

The units also bear the label of the quality control agency, Columbia Research & Testing Corporation (AA-527).

Findings: That the fiberglass one piece swimming pools and spas are in compliance with the above listed codes as noted in ESR-2014 subject to the following conditions.

1. The construction and pool/spa installation comply with this report and the manufacturer's instructions.
2. Electrical and plumbing installation comply with the respective codes in effect at the construction site.
3. That all pools are installed in accordance with manufacturer's recommendations.
4. The pools and spas produced by Viking Pools Northeast, Inc. 176 Viking Drive Industrial Park, Jane Lew, West Virginia; Viking Pools Central, Inc., 10600 West Interstate 20 East, Midland, Texas; and Viking Pools, Inc., 121 Crawford Road, Williams,California; Viking Pools Southeast,40119 Country Road 54E, Zephyrhills, FL are manufactured under a quality control program with inspections by Columbia Research &Testing Corporation (AA-527).

VIKING POOLS
THE STANDARD of FIBERGLASS

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Page 6	Pool Models
Page 7	Spa Models & Hydro Zone Models
Page 8	Alternative Recirculation Systems

Length, width and depth may vary up to 3% - all dimensions are to outside edge of coping, measured from parallel lines.

Reviewed by:

Columbia Research & Testing
10140 Starr Road, P.O. Box 933
Windsor, CA 95492
Phone 707-495-0420
IAS and ICC/ES Approved Testing Laboratory

Seal:

REGISTERED PROFESSIONAL ENGINEER
DONALD R. POINDEXTER
C-24420
EXP. 12/31/21
CIVIL
STATE OF CALIFORNIA

1/16/2020

Project Name and Address

Contractor

Date

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DBA Viking Pools
ICC Evaluation Report Number (ESR-2014)
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Zephyrhills, FL Phone: (813) 783-7439 Fax: (813) 783-7214

VP Eng-1117V14P7-0120-1ca
File Name: LP-VP ENG-11x17 Fla v1

VP 1442-1117V15P7-0119-2

TABLE 1- POOLS

POOL	CODE	SIZE WIDTH x LENGTH	DEPTHS SHALLOW, DEEP	GALLONS APPROX.	SQUARE FEET	PAGE NUMBER	POOL TYPE
Acapulco	AC	16' x 39'	3'-6" , 6'	16700	500	5	Type 0
Aruba	ARU	11' x 22'	3'-6" , 5'	5200	177	5	Type 0
Astoria	FRX	15'-10", 40'	3'-6", 7'	15600	548	6	Type 0
Baja	SFF	11'-10" x 25'	3'-8" , 5'-6"	9000	229	6	Type 0
Barcelona	BAR	16' x 38'	3'-6" x 7'	18500	518	5	Type 0
Bermuda	AL	12' x 26'	3'-6" , 5'-6"	7000	226	5	Type 0
Cambridge	LN	16' x 36'	3'-6" , 7'	18000	451	6	Type 0
Cancun	CC	16' x 35'	3'-6" , 6'-6"	14000	397	4	Type 0
Cancun Deluxe	CCX	16' x 35'	4'-3" , 6'-6"	11500	381	6	Type 0
Caribbean	MR	16' x 40'	3'-6" - 6'-6"	17000	468	4	Type 0
Carmel	FF	13'-8" x 30'	3'-6" , 6'	12000	345	6	Type 0
Chesapeake	CP	12' x 31'	3'-7" , 5'	10500	292	5	Type 0
Claremont	V	14' x 33'	3'-7" , 5'-4"	11700	416	6	Type 0
Clearwater	SP	10'-11" x 20'	3'-5" , 5'	3600	165	5	Type 0
Corinthian	RT16	15'-10", 40'	3'-6", 7'	15400	563	6	Type 0
Coronado	BHBI	15', 34'	3'-6", 6'-6"	13000	410	6	Type 0
Delray	B	11'-10" x 25'-5"	4'-6"	8100	264	6	Type 0
Empress	FR12	12' x 26'	3'-6", 5'-8"	7600	275	6	Type 0
Fiji	FJI	15'x 34'	3'-6", 6'	12000	375	4	Type 0
Freeport	FP	12' x 25'-1"	3'-7" , 5'-5"	6000	213	5	Type 0
Gulf Coast	GC	15' 10"x 39'-7"	3'-5" , 7'-11"	19600	506	4	Type I
Gulf Shore	GS	15'-7" x 34'-8"	3'-7" , 5'-10"	15000	423	4	Type 0
Island Breeze II	BN	16' x 40'	3'-6" , 8'	22000	585	4	Type I
Jamaica	LD	9'-10" x 19'-9"	3'-2" , 5'	3750	138	6	Type 0
Key West	BFF	12' x 25'-7"	3'-7" , 6'	9000	230	6	Type 0
Kingston	AP	16' x 38'	3'-6" , 5'-8"	17500	555	5	Type 0
Laguna	LG	14' x 30'	3'-6" , 6'	10000	310	5	Type 0
Laguna Deluxe	LGX	14' x 30'	4' , 6'	9000	300	4	Type 0
Lake Shore	CD	16' x 33'	3'-7" , 5'-5"	15000	480	4	Type 0
Majesty	FR14	14', 30'	3'-6", 6'	1120	377	6	Type 0
Malibu	CRUD	12' x 26'	3' x 4'-7"	4400	209	5	Type 0
Maui	MTK	9'-3" x 16'	3'-4" , 4'	2300	103	5	Type 0
Mediterranean	BP	15'-8" x 38'	3'-7" , 5'-11"	17000	512	4	Type 0
Milan	CTL	10' x 16'	4'	2450	135	6	Type 0
Monaco	AT	16' x 40'	3'-8" , 8'	21000	585	4	Type I
Montego	MT	14' x 35'	3'-7" , 5'-7"	12400	388	4	Type 0
Ocean Breeze	OB	16' x 40'	3'-6" , 5'-8"	18900	585	4	Type 0
Oceania	BHGI	16' x 42'	3',7'	19300	516	5	Type 0
Olympia	FR16	16' x 35'	3'-6", 6'-6"	15250	510	6	Type 0
Panama I	BL	12' x (35' - 39')	4'-6" , 4'-6"	Varies	Varies	5	Type 0
Panama II	BL	12' x (35' - 45')	4'-6" , 4'-6"	Varies	Varies	5	Type 0
Poseidon	PS	16' x 40'	3'-6" , 7'	17500	538	4	Type 0
Rockport	RP	14' x 30'	3'-7" , 5'-11"	12800	314	4	Type 0
Santa Barbara	RS	14' x 30'	3'-6" , 6'-6"	12500	326	4	Type 0
Sea Breeze	K	14'-8" x 33'-9"	3'-5" , 8'-2"	16000	378	4	Type 0
St. Lucia	CM	12'-3" x 23'-11"	3'-6" , 5'	6000	211	5	Type 0
St. Thomas	L	14' x 31'-6"	3'-7" , 7'	13700	396	4	Type 0
Trinidad	TND	16' x 44'	3'-6" , 7'	19300	562	4	Type 0
Triton	TN	14' x 30'	3'-7 , 5'-11"	13500	338	4	Type 0
Tropicana	MP	9'-6" x 14'-6"	4' , 4'	2500	115	5	Type 0
Valencia	ST	14'-4" x 27'-7"	3'-7" , 5'-10"	10000	288	4	Type 0
Venice	TGEN	16' , 40'-2"	3'-10" , 8'-6"	16000	553	5	Type I

TABLE 3- SPAS

SPAS	CODE	SIZE WIDTH x LENGTH	DEPTHS SHALLOW, DEEP	GALLONS APPROX.	SQUARE FEET	PAGE NUMBER
Mystic	M	10' x 10'	3'-4"	550	64	6
Mystic Spillover	MSW	10' x 11'	3'-4"	550	64	6
Placid	BOS	8'-4" x 8'-4"	3'	475	45	6
Placid Spillover	BOSSW	8'-4" x 9'-4"	3'	475	45	6
Regal	RG	8' x 10'	3'-4"	600	52	6
Regal Spillover	RGSW	9' x 10'	3'-4"	600	52	6
Royal	RY	8' x 10'	3'-4"	600	63	6
Royal Spillover	RYSW	8'-10" x 10'	3'-4"	600	63	6
Shasta	LRS	7' x 7'	3'	420	31	6
Shasta Spillover	LRSSW	7' x 8'	3'	420	31	6
Superior	CS	8' x 12'-5"	3'	700	73	6
Superior Spillover	CSSW	9' x 12'-5"	3'	700	73	6
Tahoe	LOS	7'-6" x 7'-6"	3'	450	37	6
Tahoe Spillover	LOSSW	7'-6" x 8'-6"	3'	450	37	6
Hermosa	VFTL	6'-10" x 10'-7"	10"	200	50	6
Semicircle	TSCT	8'-4" x 16'	10"	400	92	6

TABLE 4- POOLS

POOL	CODE	SIZE WIDTH x LENGTH	DEPTHS SHALLOW, DEEP	GALLONS APPROX.	SQUARE FEET	PAGE NUMBER
HZDXL	WGDXL	8'-6" x 18'	3'-3" , 5'	2800	127	6
HZE	WGE	8'-6" x 18'	5'	3600	127	6

TABLE 2- POOLS

ABOVE GROUND INSTALLATION CODES	CODES
MP	FP
AL	ST
BFF	SP
MTK	CM
DXL	LBBST
B	LD
FR12	CTL

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Seal:

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Zephyrhills, FL Phone: (813) 783-7439 Fax: (813) 783-7214

File Name: LP-VP ENG-11x17 Fla v1

VP 1442-1117V13P7-1019-3ca

FIG. 1

TYPICAL CANTILEVER CONCRETE DECK

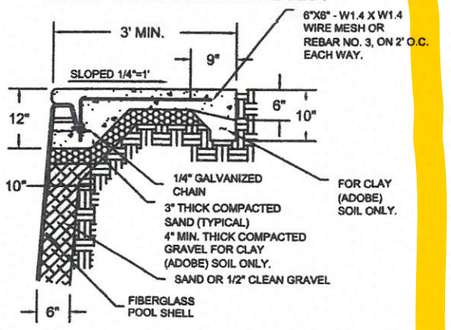
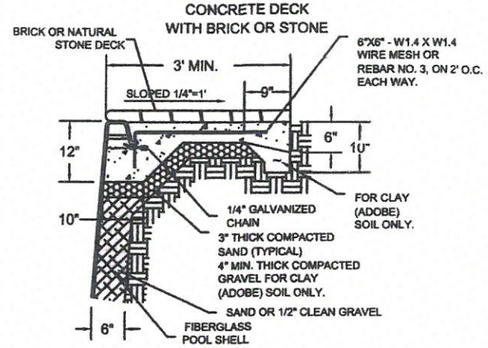


FIG. 2

CONCRETE DECK WITH BRICK OR STONE



Length, width and depth may vary up to 3% - all dimensions are to outside edge of coping, measured from parallel lines.

FIG. 5

TYPICAL BOND BEAM WITH SPA

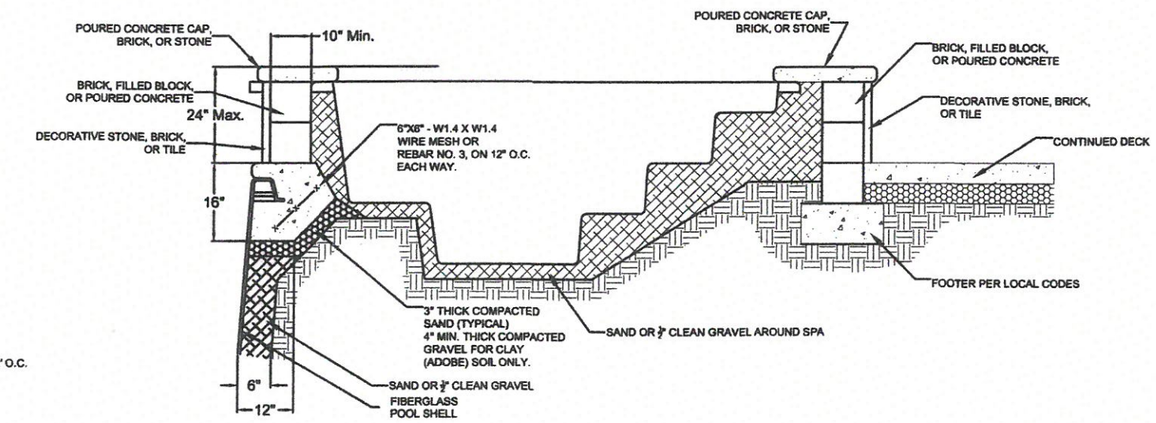


FIG. 3

TYPICAL BOND BEAM CONSTRUCTION

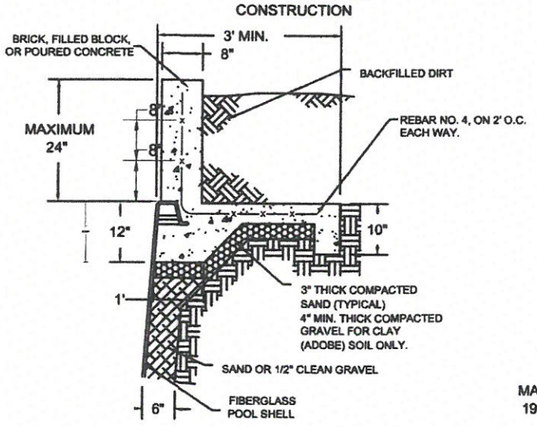
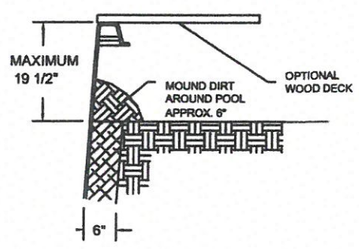


FIG. 4

TYPICAL ABOVE GROUND INSTALLATION (POOLS 12' WIDE AND UNDER)



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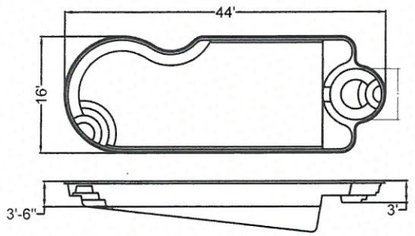
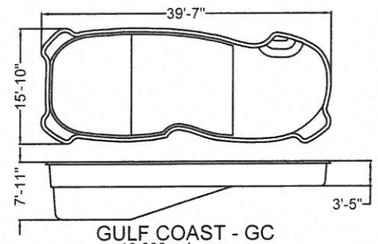
File Name: LP-VP ENG-11x17 Fig v1

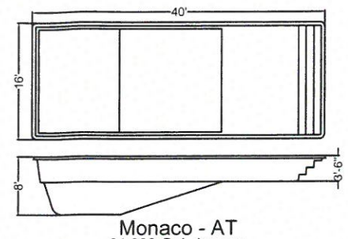
VP 1442-1117V13P7-0119-4



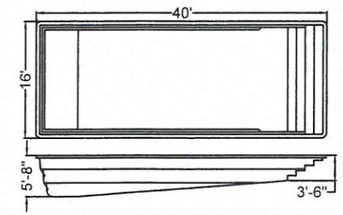
TRINIDAD - TND
19,300 gal. approx.



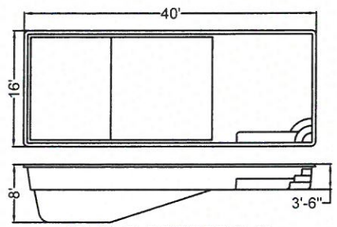
GULF COAST - GC
19,600 gal. approx.



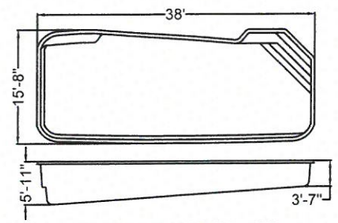
Monaco - AT
21,000 Gal. Approx.



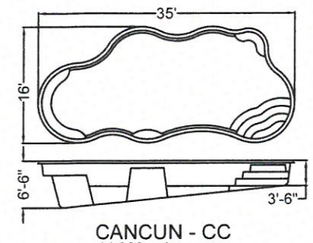
OCEAN BREEZE - OB
18,900 gal. approx.



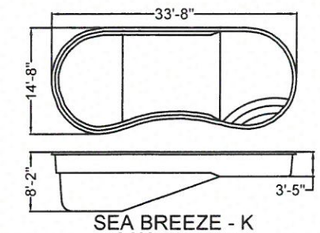
ISLAND BREEZE II- N
22,000 gal. approx.



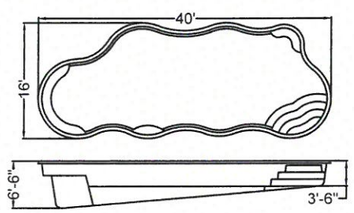
MEDITERRANEAN - BP
17,000 gal. approx.



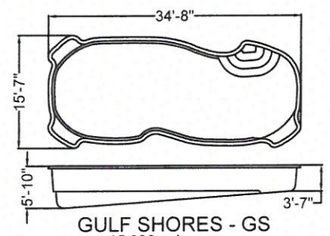
CANCUN - CC
14,000 gal. approx.



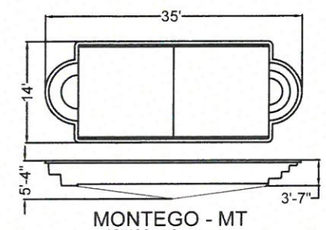
SEA BREEZE - K
16,000 gal. approx.



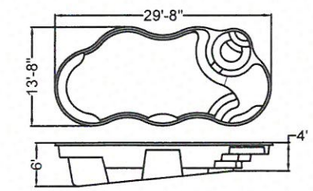
CARIBBEAN - MR
17,000 gal. approx.



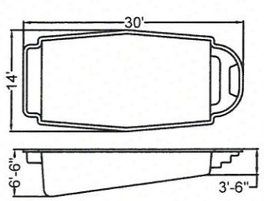
GULF SHORES - GS
15,000 gal. approx.



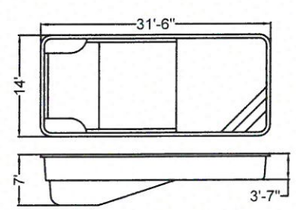
MONTEGO - MT
12,400 gal. approx.



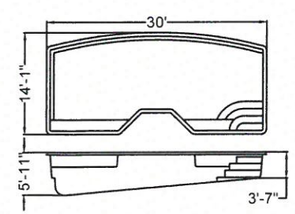
LAGUNA DELUXE - LGX
9,000 gal. approx.



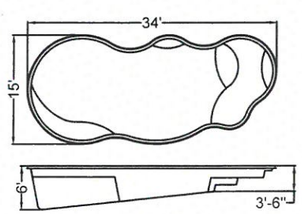
SANTA BARBARA - RS
12,500 gal. approx.



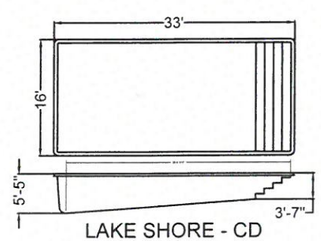
ST. THOMAS - L
13,700 gal. approx.



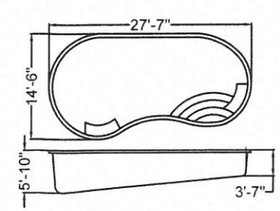
TRITON - TN
13,500 gal. approx.



FIJI - FJI
12,000 gal. approx.



LAKE SHORE - CD
15,000 gal. approx.



VALENCIA - ST
10,000 gal. approx.

Length, width and depth may vary up to 3% - all dimensions are to outside edge of coping, measured from parallel lines.

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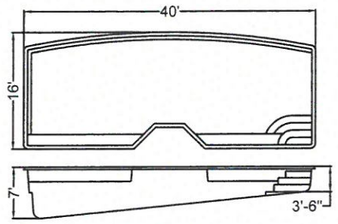
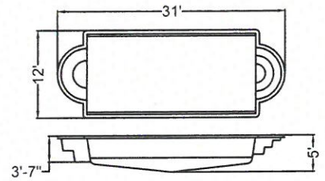
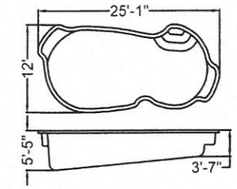
VP 1442-1117V14P7-0119-5



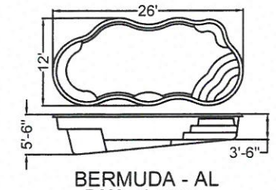
POSEIDON - PS
17,500 gal. approx.



CHESAPEAKE - CP
10,500 gal. approx.

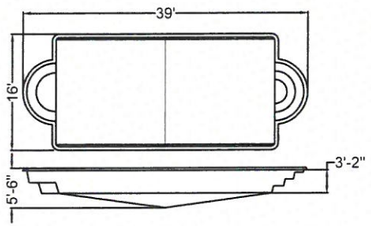


FREEPORT - FP
6,000 gal. approx.

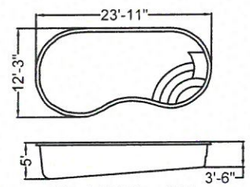


BERMUDA - AL
7,000 gal. approx.

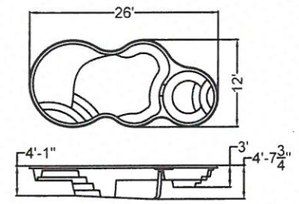
Length, width and depth may vary up to 3% - all dimensions are to outside edge of coping, measured from parallel lines.



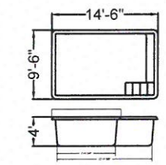
ACAPULCO - AC
16,700 gal. approx.



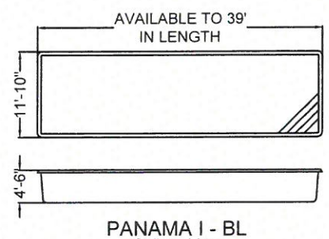
ST. LUCIA - CM
6,000 gal. approx.



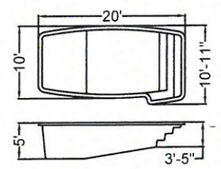
MALIBU - CRUD
4,400 Gal. Approx.



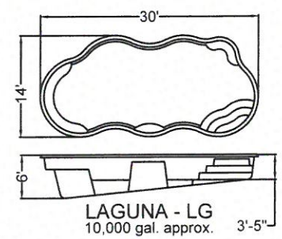
TROPICANA - MP
2,500 gal. approx.



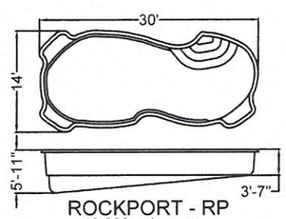
PANAMA I - BL
Gallons Vary



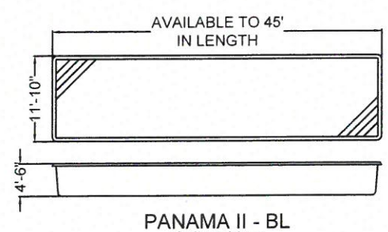
CLEARWATER - SP
3,600 gal. approx.



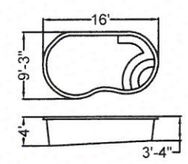
LAGUNA - LG
10,000 gal. approx.



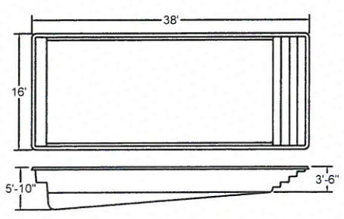
ROCKPORT - RP
12,800 gal. approx.



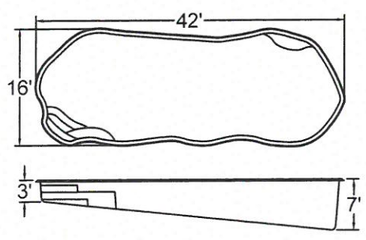
PANAMA II - BL
Gallons Vary



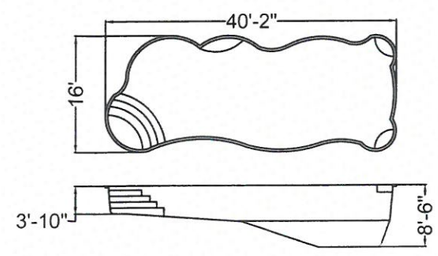
MAUI - MTK
2,300 gal. approx.



KINGSTON - AP
17,500 Gal. Approx.



Oceania - BHGI
19,300 Gal. Approx.



Venice - TGEN
16,000 gal. approx.

Models in this frame are not currently on the ICC ESR-2014 Report.

File Name: LP-VP ENG-11x17 Fla v1

Reviewed by:

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10140 Starr Road, P.O. Box 933
Windsor, CA 95492
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IAS and ICC/ES Approved Testing Laboratory

Seal:

1/16/2020

NOTES

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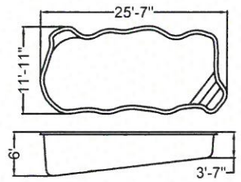
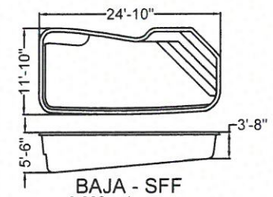
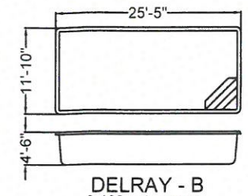
VP 1442-1117V14P7-0119-6



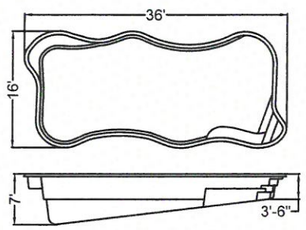
KEY WEST - BFF
9,000 gal. approx.



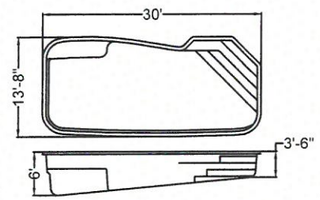
BAJA - SFF
9,000 gal. approx.



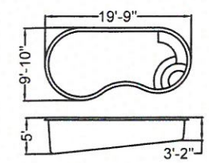
DELRAY - B
8,100 gal. approx.



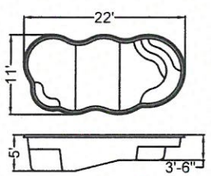
CAMBRIDGE - LN
18,000 gal. approx.



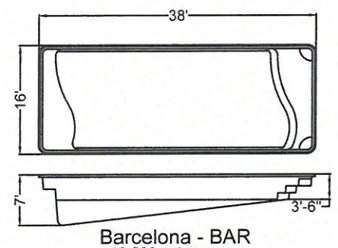
CARMEL - FF
12,000 gal. approx.



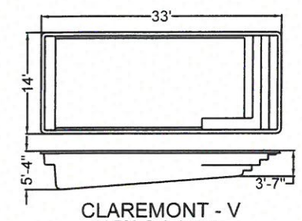
JAMAICA - LD
3,750 gal. approx.



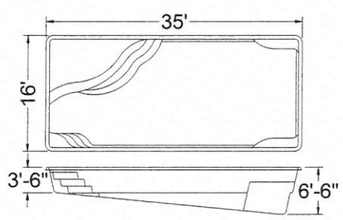
Aruba - ARU
5,200 Gal. Approx.



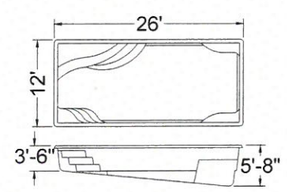
Barcelona - BAR
18,500 gal. approx.



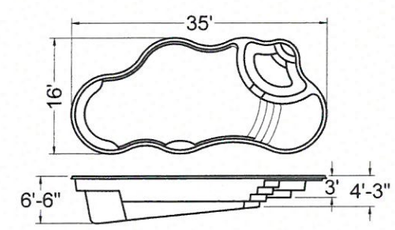
CLAREMONT - V
11,700 Gal. Approx.



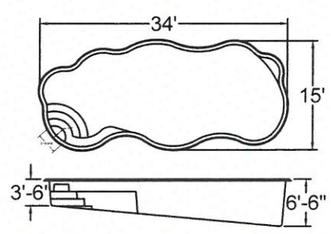
OLYMPIA - FR16
15,250 gal. approx.



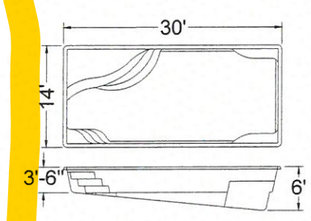
EMPRESS - FR12
7,600 gal. approx.



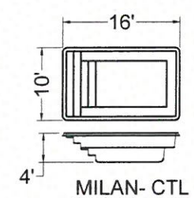
CANCUN DELUXE- CCX
11,500 gal. approx.



Coronado - BHBI
13,000 Gal. Approx.



Majesty - FR14
11,200 gal. approx.



MILAN- CTL
2,450 gal. approx.

NOTES

Reviewed by:

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Seal:

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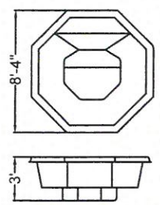
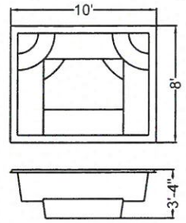
File Name: LP-VP ENG-11x17 Fla v1

VP 1442-1117V14P7-0119-7

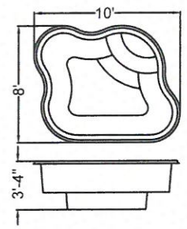
Length, width and depth may vary up to 3% - all dimensions are to outside edge of coping, measured from parallel lines.



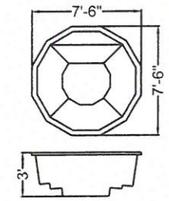
PLACID - BOS
475 Gal. Approx.



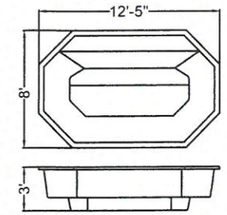
ROYAL - RY
600 Gal. Approx.



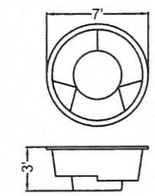
REGAL - RG
600 Gal. Approx.



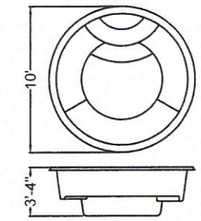
TAHOE - LOS
450 Gal. Approx.



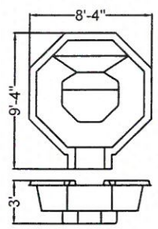
SUPERIOR - CS
700 Gal. Approx.



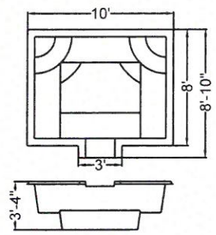
SHASTA - LRS
420 Gal. Approx.



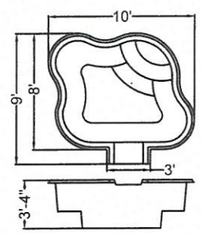
MYSTIC - M
550 Gal. Approx.



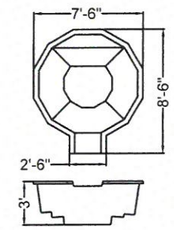
PLACID SPILLWAY- BOSSW
475 Gal. Approx.



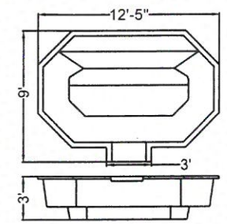
ROYAL SPILLWAY- RSW
600 Gal. Approx.



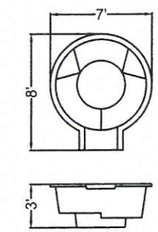
REGAL SPILLWAY- RGSW
600 Gal. Approx.



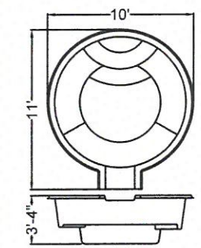
TAHOE SPILLWAY- LOSSW
450 Gal. Approx.



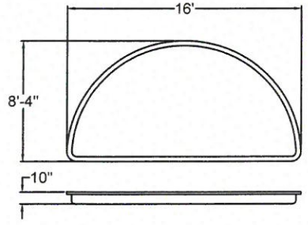
SUPERIOR SPILLWAY- CSSW
700 Gal. Approx.



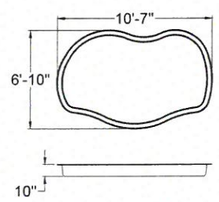
SHASTA SPILLWAY - LRSSW
420 Gal. Approx.



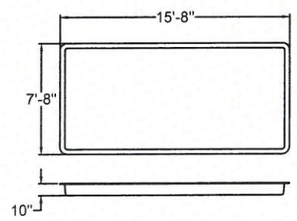
MYSIC SPILLWAY- MSW
550 Gal. Approx.



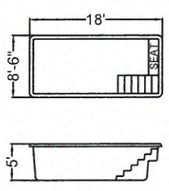
SEMI CIRCLE TANNING LEDGE - TSCT
400 Gal. Approx.



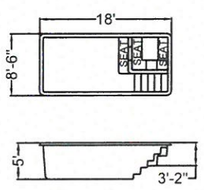
HERMOSA - VFTL
200 Gal. Approx.



RECTANGLE TANNING LEDGE - RTL
400 Gal. Approx.



POOL - HZE
3,600 gal. approx.



POOL - HZDXS
2,800 gal. approx.

Reviewed by:

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10140 Starr Road, P.O. Box 933
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Phone 707-495-0420
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Seal:

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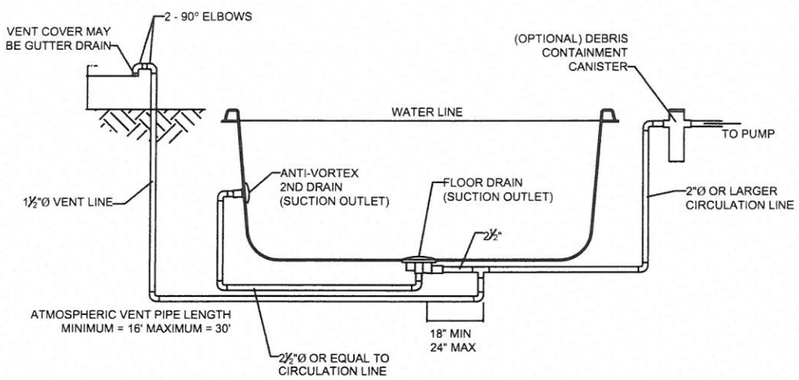
File Name: LP-VP ENG-11x17 Fla v1

VP 1442-1117V13P7-0120-8

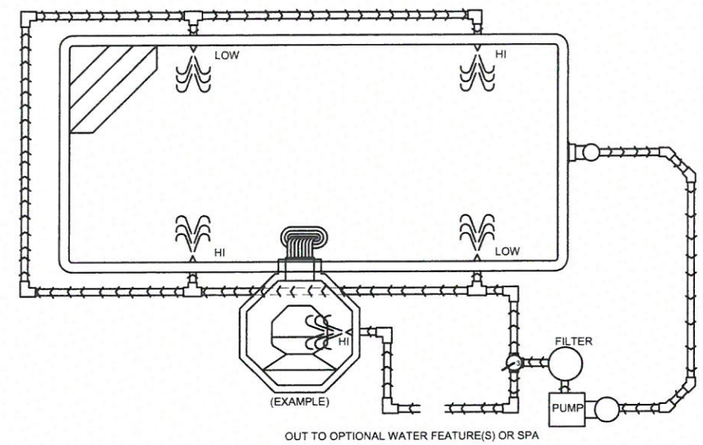
DEBRIS REMOVAL SYSTEM
SUCTION OUTLETS IN SERIES



GENERAL NOTES

1. THE DEBRIS REMOVAL SYSTEM IS TO BE INSTALLED IN ACCORDANCE WITH DRAIN MANUFACTURER'S RECOMMENDATIONS.
2. CONTRACTOR TO INSTALL VACUUM RELIEF BACKUP SYSTEM IN ACCORDANCE WITH 2019 CALIFORNIA BUILDING CODE.
3. ALL PIPING TO BE SCHEDULE 40 PVC BEARING NSF APPROVAL UNLESS OTHERWISE NOTED.
4. THE FLOOR DRAIN MEETS THE REQUIREMENTS OF ANSI/ASME- A112.19.8-2007 AND DRAIN COVERS MEET THE REQUIREMENTS OF ANSI/ASME A112.19.8-2007 FOR ANTI-HAIR AND BODY ENTRAPMENT AND 2013 ANSI/APSP/ICC-7 SUCTION ENTRAPMENT AVOIDANCE.
5. THIS DRAWING WILL SUPPLEMENT CONTRACTOR'S SPECIFICATION DRAWING ON FILE. FOR METHODS AND MATERIALS OF CONSTRUCTION, REFER TO CONTRACTOR'S ENGINEERED AND SEALED SPECIFICATION DRAWING ON FILE WITH THE BUILDING DEPARTMENT.
6. ATTACH PLACARD WHICH STATES THAT VENT IS A SWIMMING POOL SAFETY DEVICE AND SHOULD NOT BE TAMPERED WITH.
7. THE MAXIMUM VACUUM WITH ONE SUMP PLUGGED AND TO RELEASE A BODY ENTRAPMENT ON THE OTHER SUMP WILL NOT EXCEED 4.5 INCHES OF MERCURY IN 3 SECONDS
8. MAXIMUM SUCTION PIPE VELOCITY SIX (6) FPS OR 59 GPM
9. AN APPROVED VACUUM RELEASE SYSTEM SUCH AS THE VAC-ALERT SVRS SYSTEM IS AN ALTERNATIVE TO THE OTHER SYSTEMS SHOWN.

SWIMMING POOL WITHOUT RECIRCULATION MAIN DRAINS

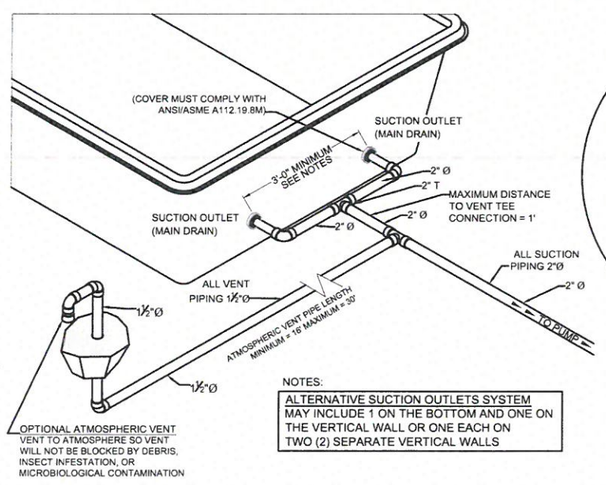


STANDARD NOTES:
1. USE 2" SCHEDULE 40 PIPE.
2. DO NOT USE 90 DEGREE ELBOWS ON SUCTION SIDE.
3. CHECK VALVES MAY BE NEEDED IF EQUIPMENT IS MORE THAN 18" ABOVE WATER LINE.
4. KEEP VALVES WITHIN 5' OF THE PUMP AND/OR FILTER.

LEGEND

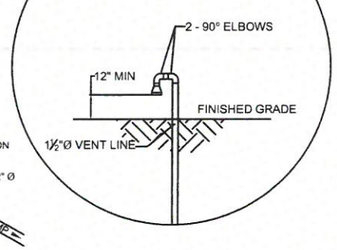
- FIBER OPTIC LIGHT
- SKIMMER
- RETURN
- SPILLOVER
- T-JOINT
- 3" MAIN DRAIN
- 3-WAY VALVE
- PLUMBING

Length, width and depth may vary up to 3% - all dimensions are to outside edge of coping, measured from parallel lines.



SUGGESTED DETAIL

VENT COVER MAY BE GUTTER DRAIN SUCH AS HAYWARD MODEL SP-1019



NOTES:

ALTERNATIVE SUCTION OUTLETS SYSTEM MAY INCLUDE 1 ON THE BOTTOM AND ONE ON THE VERTICAL WALL OR ONE EACH ON TWO (2) SEPARATE VERTICAL WALLS

DUAL SUCTION OUTLETS IN PARALLEL WITH OPTIONAL ATMOSPHERIC VENT SYSTEM N.T.S
TO BE INSTALLED IN ACCORD WITH 2019 CALIFORNIA BUILDING CODE.

Reviewed by:

Columbia Research & Testing
10140 Starr Road, P.O. Box 933
Windsor, CA 95492
Phone 707-495-0420
IAS and ICC/ES Approved Testing Laboratory

Seal:

REGISTERED PROFESSIONAL ENGINEER
DONALD R. POINDEXTER
C-24420
EXP. 12/31/21
CIVIL
STATE OF CALIFORNIA

1/16/2020

NOTES

Latham Pool Products Inc.
DBA Viking Pools
ICC Evaluation Report Number (ESR-2014)
Latham, NY Phone: (800) 833-3800
Jane Lew, WV Phone: (304) 884-6954 Fax: (304) 884-7198
Midland, TX Phone: (432) 561-9933 Fax: (432) 561-9934
Williams, CA Phone: (530) 473-5319 Fax: (530) 473-5393
Zephyrhills, FL Phone: (813) 783-7439 Fax: (813) 783-7214

File Name: LP-VP ENG-11x17 Fla v1

Jandy®

An Ultra-Compact and Energy-Efficient Gas Pool Heater

***NEW!* ASME Certified Models Now Available**

JXi™
POOL & SPA HEATER

THE TOTAL PACKAGE

The JXi™ heater sets the standard in pool and spa heating technology with its ultra-compact size, lightweight design, and energy-efficiency options that save on electrical costs. Providing extreme installation flexibility, this high-efficiency, low-NOx heater is a top choice for pool professionals and pool owners everywhere and is available in both natural and propane gas models.

ENERGY EFFICIENT

84% thermal efficiency rating and **low-NOx** design surpasses strict DOE Energy Efficiency requirement.† Select JXi with VersaFlo™ or add the optional VersaFlo Accessory Kit to reduce energy costs even more.

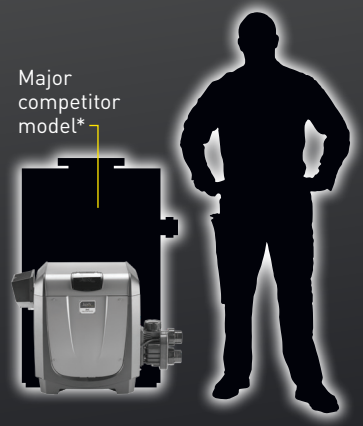
Heater Shown with Optional VersaFlo Integrated Bypass
*Not available with ASME models

FASTEST INSTALLATION

Pro-driven features for the fastest, most customer-friendly installation include:

Best Retrofit Option

Plumbing flexibility for quick Mastertemp® and Max-E-Therm® replacement that requires no plumbing adjustments.



Ultra-Compact Lightweight Design

Easy to store, transport, and install, JXi™ easily fits on a 2' x 2' pad and is 38% lighter with a 28% smaller footprint.
*Compared to major competitor models

Flexible Installation

Top can be easily removed for increased accessibility and rotated 180 degrees so you never need to rotate headers. Also includes a flip up electrical panel for convenient setup and service.

†84% Thermal Efficiency applies to 260K and 400K BTU Models with Copper Heat Exchangers, 200K BTU and all models with Cupronickel heat exchangers are 83%, see back page for complete model listing.

AquaLink® | iAquaLink™ COMPATIBLE
Sold separately

Versa Plumb®-Ready

Installation in the Versa Plumb system* reduces plumbing costs and increases energy efficiency, all using the smallest footprint available.

*Sweep elbow included in all JXi models

ASME Certified Models Now Available

JXi™ models are available with robust heat exchanger tubes and corrosion resistant bronze headers to meet the high stresses of commercial installations.

*Not available with VersaFlo Integrated Bypass technology

SAVE EVEN MORE WITH OPTIONAL VERSAFLO™ INTEGRATED BYPASS*

*VersaFlo not available on ASME certified models.

Here's How:

- The heater is typically only used 3.5% of average annual pump runtime, the other 96.5% of the time the heat exchanger can be bypassed.
- JXi™ with VersaFlo™ activates the built-in flow bypass valve based on call for heat to avoid running water through the heat exchanger when water does not need to be heated.
- Variable-speed pumps can be run at lower speeds, requiring considerably less electricity, thereby providing for significantly reduced electricity costs.**

VersaFlo Integrated Bypass is available on select models or can be easily added to any JXi heater in the field.***

**Versus similar system without VersaFlo. ***See JXIVFKIT installation manual for more details.

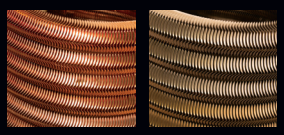
5-YEAR HEAT EXCHANGER WARRANTY

JXi heaters with VersaFlo factory installed receive an industry leading 5-Year standard warranty on the heat exchanger.

Bypass Mode

Heat Mode

ADDITIONAL FEATURES



Weld-free combustion chamber for optimal corrosion resistance, models available with copper or cupronickel heat exchangers.

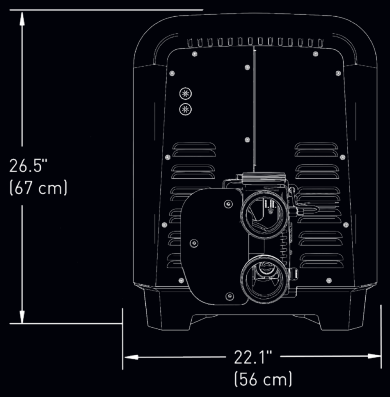
Venturi-driven air and gas mix for enhanced performance.

Reliable, balanced flow and temperature control with thermal regulator valve.

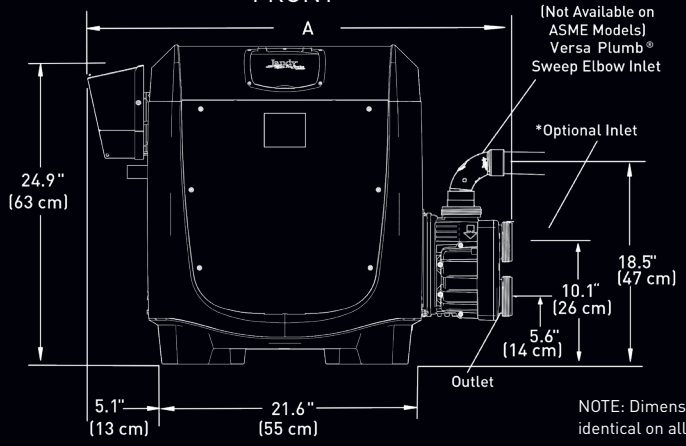
Differentiated limit switches meet applicable product safety standards.

Corrosion-resistant temperature sensors for reliable operation.

INLET SIDE



FRONT



NOTE: Dimensions are identical on all heater models

AVAILABLE IN THE FOLLOWING MODELS

Model #	Firing Rate	Gas Type	Heat Exchanger	Thermal Efficiency	Dim A	Weight	Vent Diameter*	Minimum GPM	Maximum GPM
JXi200N	200K BTU	Natural Gas	Copper	83%	34.5	117 lbs.	6" (15 cm)	30	100
JXi260N	260K BTU	Natural Gas	Copper	84%	34.5	120 lbs.	7" (18 cm)	30	100
JXi400N	399K BTU	Natural Gas	Copper	84%	34.5	126 lbs.	8" (20 cm)	30	100
JXi400NN	399K BTU	Natural Gas	Cupronickel	83%	34.5	126 lbs.	8" (20 cm)	30	100
JXi400NK w/VersaFlo	400K BTU	Natural Gas	Copper	84%	34.5	126 lbs.	8" (20 cm)	30	100
JXi200P	200K BTU	Propane	Copper	83%	34.5	117 lbs.	6" (15 cm)	30	100
JXi260P	260K BTU	Propane	Copper	84%	34.5	120 lbs.	7" (18 cm)	30	100
JXi400P	399K BTU	Propane	Copper	84%	34.5	126 lbs.	8" (20 cm)	30	100
JXi400PN	399K BTU	Propane	Cupronickel	83%	34.5	126 lbs.	8" (20 cm)	30	100
JXiVFKIT	JXi VersaFlo Accessory Kit (Not compatible with ASME certified heaters)								

ASME Certified JXi Heaters (Not available with VersaFlo Integrated Bypass technology)

Model #	Firing Rate	Gas Type	Heat Exchanger	Thermal Efficiency	Dim A	Weight	Vent Diameter*	Minimum GPM	Maximum GPM
JXi260NC	260K BTU	Natural Gas	Copper	84%	31.6	163 lbs.	7" (18 cm)	30	100
JXi260PC	260K BTU	Propane	Copper	84%	31.6	163 lbs.	7" (18 cm)	30	100
JXi400NC	400K BTU	Natural Gas	Copper	84%	31.6	168 lbs.	8" (20 cm)	30	100
JXi400PC	400K BTU	Propane	Copper	84%	31.6	168 lbs.	8" (20 cm)	30	100

*Minimum vent pipe size for Category I installations. 2 units per pallet. Trade Series Exclusive product; not available for Internet sale.

Jandy.com | 1.800.822.7933

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MID-SIZED HIGH-HEAD
VARIABLE-SPEED PUMP

Jandy® Pro Series

VS PLUS HP
VARIABLE-SPEED PUMP

Maximum Efficiency.
Mid-Sized Wet End.
Up to 70% Quieter.[1]

ENERGY STAR

VS PlusHP

» High Head
» Mid-Sized Wet End
» High Efficiency

UP TO 70% QUIETER

Enjoy the peace and relaxation of your pool without the noise of a traditional pump.

Power Consumption

Jandy Pro Series VS Plus HP versus a single-speed pump.

VS Plus HP

300 Watts

Single-Speed Pump

2300 Watts

GPM: Gallons Per Minute **RPM:** Revolutions Per Minute 100-Watt Light Bulb

*Actual energy use dependent on pump speed, usage, and system restriction curve.

Please visit Jandy.com/energy to customize your savings.

POOL AND SPA COMBOS | SOLAR HEATING | IN-FLOOR SYSTEMS | SHEER DESCENTS | WATER FEATURES

VS PLUS HP

VARIABLE-SPEED PUMP

$AVE UP TO 90% ON ENERGY COSTS

with the VS PlusHP Variable-Speed Pump.

AUXILIARY CIRCUIT

Auxiliary circuit can be used to control other devices, such as booster pumps or salt water chlorinators without the need for an additional timeclock.

MID-SIZED HIGH HEAD VARIABLE-SPEED PUMP

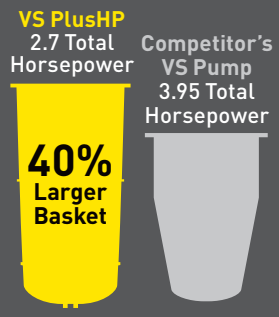
Ideal for pool/spa combos, in-floor cleaning, solar heating systems.

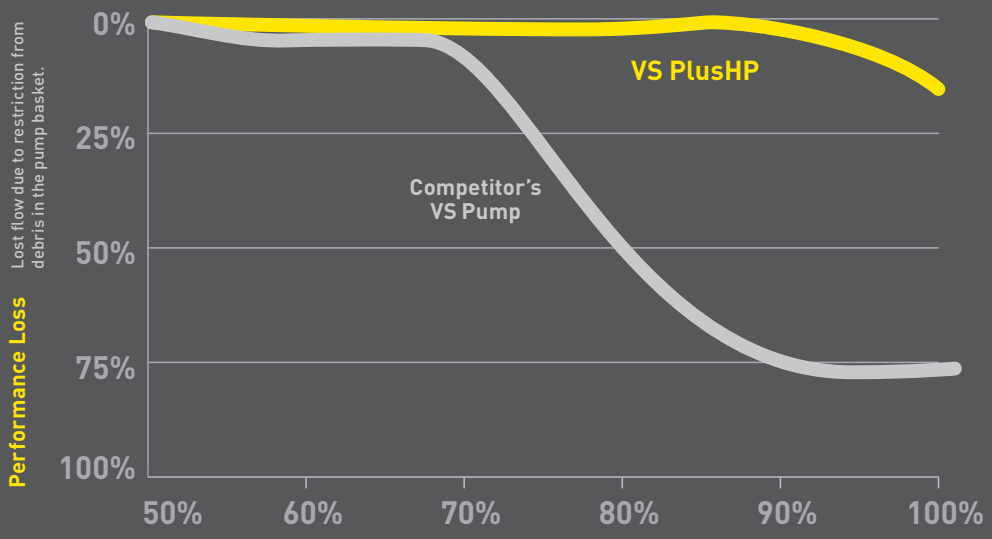
AUTOMATION OPTIONS AVAILABLE

Model without JEP-R available.

Size Matters

Small pump baskets fill faster—restricting flow and eroding performance. The VS PlusHP, with its oversized basket, delivers more consistent performance and better efficiency under real-world conditions—with a smaller motor.





Standard Features on all Variable-Speed Models

Carry handles for easy installation

Tool-free lids for easy debris removal

Tool-free drain plugs for easy winterization

Unions included, easy installation, no nipples required

Switched aux relay to control another device (2.0 & 2.7 HP motors only)

All Jandy VS pumps meet ENERGY STAR efficiency requirements.

ENERGY STAR

Save up to 90% on energy costs with the VS PlusHP Variable-Speed Pump[2]

The VS PlusHP is a high-performance, energy-efficient pump, in a mid-sized body that can save up to 90% in electrical cost savings versus single-speed pumps.

Ultra high-efficiency motor
Features a totally enclosed fan-cooled (TEFC) permanent magnet brushless DC motor for cooler operation and extended motor life.

Quiet
When used at energy-saving lower speeds, the advanced motor design of the VS PlusHP generates up to 70% less noise than single-speed pumps.

Digital controller included[3]
Two timed speeds/eight speeds total. Remotely-mounted controller provides easy access to pump controls. Reliable battery backup ensures time and settings are stored during power outages.

Auxiliary Circuit
Features an auxiliary circuit that can be used to control other devices such as booster pumps or salt water chlorinators without the need for an additional timeclock.

Additional Features
- 40% larger strainer basket than the leading competitor for greater pool owner convenience and improved efficiency when loaded with debris.
- Unions included for fast and reliable connections to 2" or 2-1/2" pipe.
- Ergonomic carry handle for easy installation.
- High-profile easy-grip handles for easier strainer basket removal.
- Compact design is ideal for tight equipment pads or replacement of older single-speed pumps.

Complies with Appliance Efficiency Standards
(CEC Title 20 & ANSI®/APSP-15) and qualifies for utility rebates, where offered. ENERGY STAR® certified.

Zodiac Pool Systems, Inc.
2620 Commerce Way, Vista, CA 92081
1.800.822.7933 | www.ZodiacPoolSystems.com

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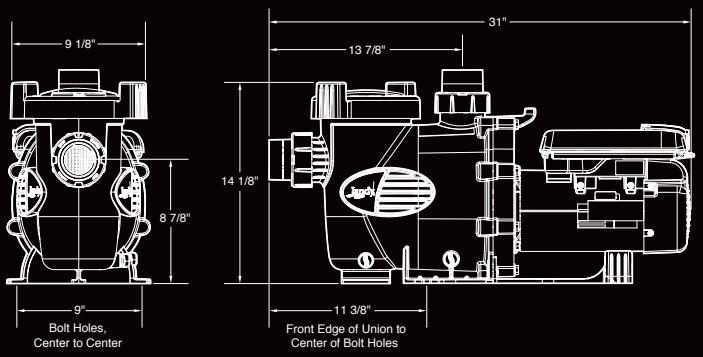
1.888.647.4004 | www.ZodiacPoolSystems.ca

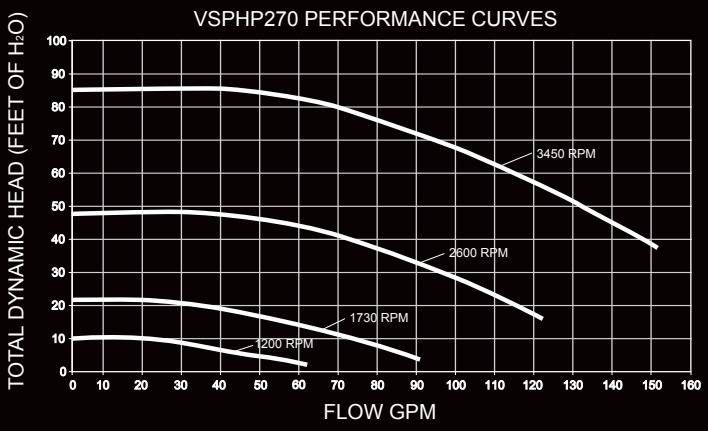
DIMENSIONS



SPECIFICATIONS

Model No.	Total Horse-power	Voltage	Max. Watts	Power Require-ments[4]	Carton Weight	Overall Length
VSPHP270JEP	2.70	230VAC	2,400 W	Min. 15A/14AWG	50 lbs	30⅜"
VSPHP270AUT	2.70	230VAC	2,400 W	Min. 15A/14AWG	50 lbs	30⅜"

PERFORMANCE



[1] Up to 70% quieter than traditional single-speed pumps. Results based on internal testing.
[2] Actual savings dependent on pump horsepower, usage and energy costs.
[3] Also available without interface, for applications with AquaLink® RS, AquaLink PDA, or AquaLink Z4 control systems (VSPHP270AUT).
[4] Always follow local building and safely codes for power requirements and guidelines.

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SUMMARY OF SOUND DATA TAKEN FROM VARIOUS ZODIAC/JANDY PUMPS.
(Product Safety & Compliance Department - Nov 2017)

SUMMARY:

Sound testing was performed at Intertek Labs. A description of the standard used and equipment is stated in the report and is shown here for reference:

TEST METHOD

The laboratory method used in conducting this test is in accordance with ANSI S12.51-2012/ISO 3741:2010, Acoustics – Determination of sound power levels of noise sources using sound pressure – Precision method for reverberation rooms Intertek Acoustical Facilities utilizes a 16,640 cu. ft. (470 cubic meter) reverberation room, which has been qualified for testing to the above standard.

FINAL DATA:

The sound level for various Jandy/Zodiac pumps is given in the tables below.

The sound power level is calculated from the reverberation data and is assuming either a motor/pump speed (rpm), or flow (gpm), as specified below in each table. The data provided also is specific to a particular **distance from the pump as shown in the header for each table below**.

Distance from Pump = 3.28 ft (1m)

Model	Sound Level, dB (1000 rpm)	Sound Level, dB (1725 rpm)	Sound Level, dB (3450 rpm)	Sound Level, dB (60 gpm)	Sound Level, dB (10 gpm)
VSSHP Series VSSHP220AUT VSSHP270AUT JEP2.0SVRS	36	47.4	61.8		-
VSFHP Series VSFHP165JEP VSFHP165AUT VSFHP270JEP VSFHP270AUT	40.1	50.3	60.3		-
FHPM 1.5	-	-	-	50.4	-
PB4-60	-	-	-	-	56.2
PB4SQ					51.3

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Distance from pump 6 ft (1.83m)

Model	Sound Level, dB (1000 rpm)	Sound Level, dB (1725 rpm)	Sound Level, dB (3450 rpm)	Sound Level, dB (60 gpm)	Sound Level, dB (10 gpm)
VSSHP Series VSSHP220AUT VSSHP270AUT JEP2.0SVRS	33.4	44.8	59.2	-	-
VSFHP Series VSFHP165JEP VSFHP165AUT VSFHP270JEP VSFHP270AUT	37.4	47.7	57.7	-	-
FHPM 1.5	-	-	-	47.8	-
PB4-60	-	-	-	-	53.6
PB4SQ					48.3

Distance from pump: 9 ft (2.74m)

Model	Sound Level, dB (1000 rpm)	Sound Level, dB (1725 rpm)	Sound Level, dB (3450 rpm)	Sound Level, dB (60 gpm)	Sound Level, dB (10 gpm)
VSSHP Series VSSHP220AUT VSSHP270AUT JEP2.0SVRS	31.6	43	57.4	-	-
VSFHP Series VSFHP165JEP VSFHP165AUT VSFHP270JEP VSFHP270AUT	35.7	46	55.9	-	-
FHPM 1.5	-	-	-	46.1	-
PB4-60	-	-	-	-	51.8
PB4SQ					46.5

Distance from pump: 12 ft (3.66m)

Model	Sound Level, dB (1000 rpm)	Sound Level, dB (1725 rpm)	Sound Level, dB (3450 rpm)	Sound Level, dB (60 gpm)	Sound Level, dB (10 gpm)
VSSHP Series VSSHP220AUT VSSHP270AUT JEP2.0SVRS	30.3	41.8	56.2	-	-
VSFHP Series VSFHP165JEP VSFHP165AUT VSFHP270JEP VSFHP270AUT	34.4	44.7	54.7	-	-
FHPM 1.5	-	-	-	44.8	-
PB4-60	-	-	-	-	50.6
PB4SQ					45.3

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7.4.2 Dimensions

NOTE When installing a pump, leave a minimum of two (2) feet (30 cm) of clearance above the pump for removal of the strainer basket.

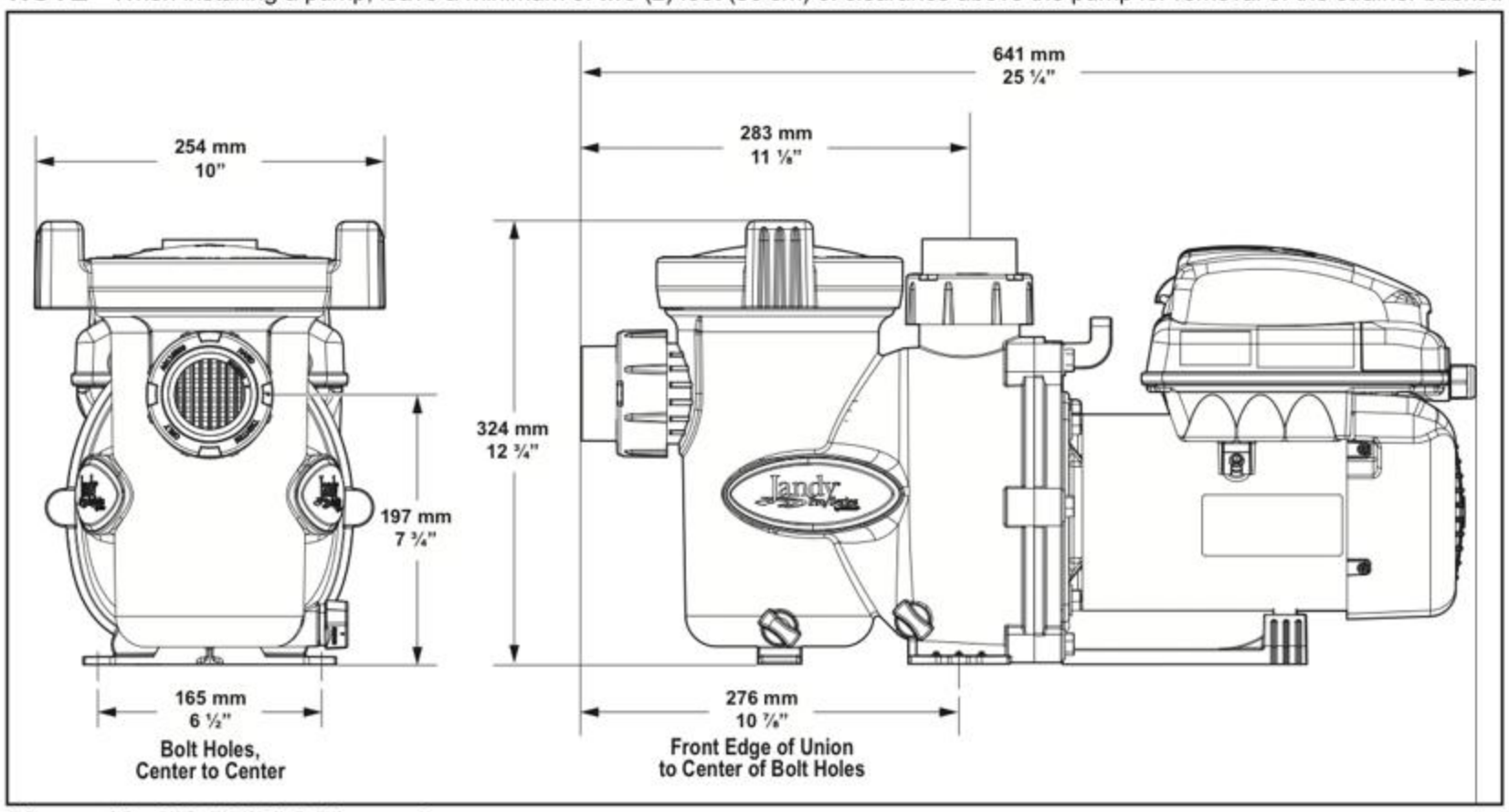

Figure 18. VS-FHP1.0 Dimensions

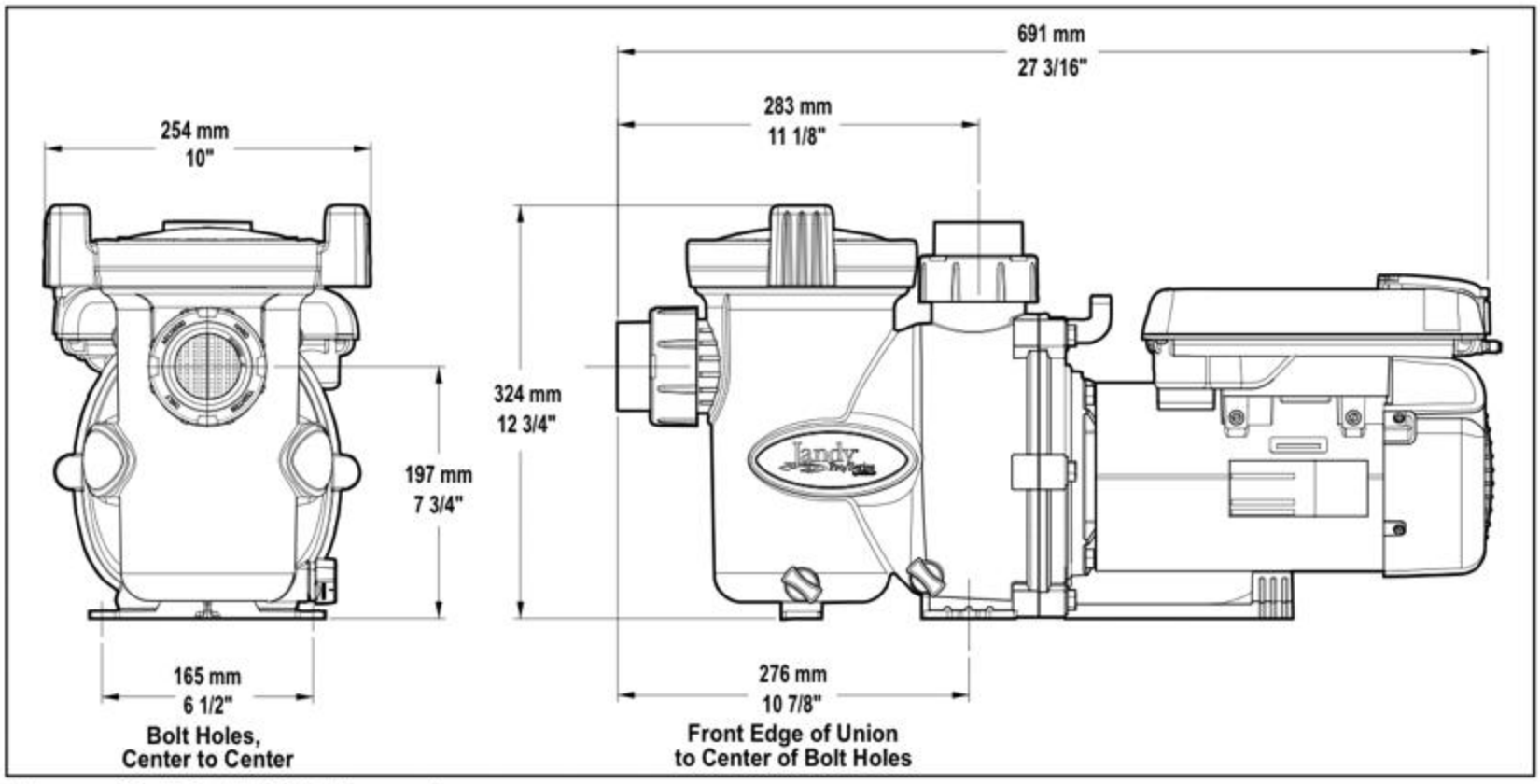

Figure 19. VS-FHP2.0 Dimensions

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2115 South Service Road West, Unit 3 Oakville (ON) L6L 5W2
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CONFORMS TO
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Certified to
CAN/CSA C22.2
No. 108

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OWNER'S MANUAL

ENGLISH | FRANÇAIS | ESPAÑOL

Jandy Pro Series
Nicheless LED Underwater Light

⚠ WARNING

FOR YOUR SAFETY - This product must be installed and serviced by a contractor who is licensed and qualified in pool equipment by the jurisdiction in which the product will be installed where such state or local requirements exist. The maintainer must be a professional with sufficient experience in pool equipment installation and maintenance so that all of the instructions in this manual can be followed exactly. Before installing this product, read and follow all warning notices and instructions that accompany this product. Failure to follow warning notices and instructions may result in property damage, personal injury, or death. Improper installation and/or operation will void the warranty.

Improper installation and/or operation can create unwanted electrical hazard which can cause serious injury, property damage, or death.

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.

H0622800 REV A

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Section 1. Important Safety Instructions

IMPORTANT SAFETY INSTRUCTIONS PERTAINING TO A RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS

READ AND FOLLOW ALL INSTRUCTIONS

When installing and using this electrical equipment, basic safety precautions should always be followed, including the following:

⚠ DANGER

RISK OF ELECTRICAL SHOCK OR ELECTROCUTION. This underwater light must be installed by a licensed or certified electrician in accordance with the National Electrical Code® and applicable local codes and ordinances. In Canada, the Canadian Electrical Code and all applicable local codes and ordinances must be adhered to. Improper installation will create an electrical hazard, which could result in death or serious injury to pool or spa users, installers, or others due to electrical shock, and may also cause damage to property. Read and follow the specific instructions below.

⚠ WARNING

Before installing this underwater light, read and follow all warning notices and instructions accompanying this light. Failure to follow safety warnings and instructions can result in severe injury, death, or property damage.
Visit www.zodiacpoolsystems.com for additional free copies of these instructions or call Zodiac Technical Support at 800.822.7933 (U.S.) or 888.647.4004 (Canada)

CAUTION

Except when the Jandy® Pro Series Nicheless Underwater LED Lights are installed in an area of the swimming pool that is not used for swimming and the lens is adequately guarded to keep any person from contacting it, the light shall be installed in or on a wall of the pool, with the top of the lens opening not less than 4 inches (102 mm) below the normal water level of the pool.

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.

SAVE THESE INSTRUCTIONS

⚠ WARNING

RISK OF ELECTRICAL SHOCK OR ELECTROCUTION, which could result in serious injury or death. The Jandy® Pro Series Nicheless LED Lights are only available for 12-volt AC power. For supply connection, use only an isolating low voltage power supply with ungrounded output, evaluated and listed by a NRTL for swimming pool use.

Section 2. General Description

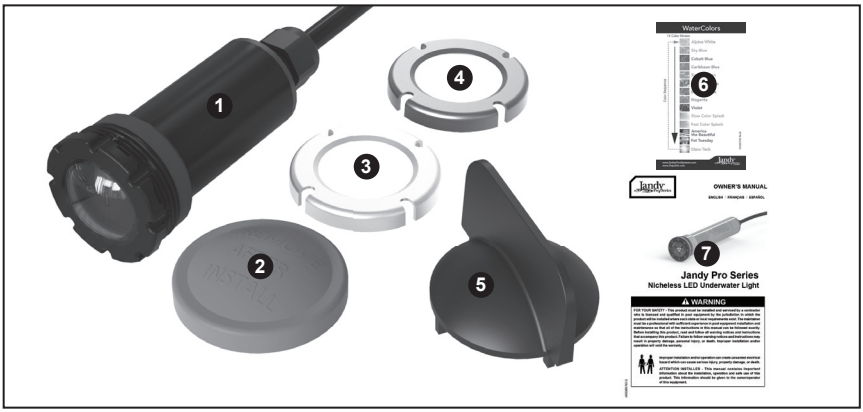
2.1 Product Overview

This manual provides instructions for installing and replacing the Jandy Pro Series Nicheless Underwater LED Lights for pool and spa use.

CAUTION

The Jandy Pro series nicheless LED underwater lights are not serviceable and therefore contain no serviceable parts. In order to prevent risk of property damage and/or injury, no service should be attempted to the light in the event of a malfunction. The complete light assembly must be replaced.

2.2 Product Contents



1 - Jandy Pro Series Nicheless Underwater LED Light
2 - Protective Cover (See Page 7)
3 - White Cosmetic Cover (See Page 7)
4 - Gray Cosmetic Cover (See Page 7)
5 - Installation Tool (See Page 7)
6 - Quick Reference Guide
7 - Nicheless LED Underwater Light Owner's Manual

Section 3. Installing the Jandy Pro Series Nicheless LED Light

⚠ WARNING

Risk of Electrical Shock or Electrocution. This underwater light must be installed by a licensed or certified electrician or a qualified pool serviceman in accordance with the National Electrical Code® (Canadian Electrical Code, in Canada) and all applicable local codes and ordinances. Improper installation will create an electrical hazard, which could result in death or serious injury to pool or spa users, installers or others due to electrical shock, and may also cause damage to property.

Always disconnect the power to the light at the circuit breaker before installing or servicing the light. Failure to do so could result in death or serious injury to serviceman, pool or spa users or others due to electrical shock.

NOTE: Jandy Pro Series Nicheless Lights are Low Voltage and do not have any exposed metal and as such do not require a separate ground or bonding wire.

3.1 Preparing the Light Fixture for Installation

NOTE: The electrician must complete preparatory steps before light fixture is installed. See Figure 1.

Verify that the pool meets the requirements of the current National Electrical Code® (Canadian Electrical Code, in Canada) and all local codes and ordinances. A licensed or certified electrician must install the electrical system to meet or exceed those requirements before the underwater light is installed. Some of the requirements of the National Electrical Code, which the pool electrical systems must meet, are as follows:

1. The junction box or the low-voltage magnetic transformer must be located at least eight (8) inches (measured from the inside of the bottom of the junction box or transformer) above the MAXIMUM water level, OR at least four (4) inches above the ground level or pool deck, whichever is greater. The junction box or 12VAC magnetic transformer must also be installed at least forty-eight (48) inches (4 ft.) from the edge of the pool. See Figure 1.
2. 1.5" pipe must be installed through the bond beam followed by 1" conduit for the cord using sweep elbows only for turns. Do not use 90 degree elbows. It is highly recommended to use 1.5" pipe throughout the entire width of the bond beam, however, the minimum length for the particular light being installed is specified in Table 1.

3. A standard 1.5" plastic wall / return fitting (not included) must be installed so that the top edge of the underwater light's lens is at least 4 inches (10.2 cm) below the surface of the water in the pool. See Figure 1.

NOTE: For optimal lighting results it is recommended to place lights 12-18" below the water line.

NOTE: To be certain that the pool's electrical system meets all applicable requirements, the electrician should also consult the local building department.

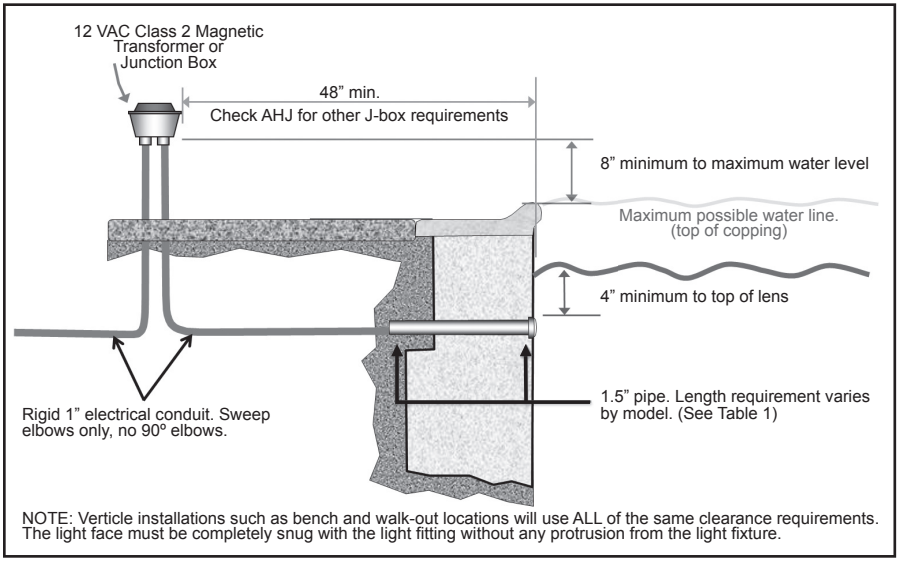


Figure 1. Jandy® Pro Series LED Light Installation with Standard 1.5" Plastic Fitting

Use the chart below to determine the appropriate pipe length for your installation.

WATTS	MINIMUM LENGTH FOR 1.5" PIPE
6W	7"
12W	10"
24W	10"
All products listed above come in a variety of cord lengths. Cord lengths come in 50, 100 & 150 feet lengths.	

Table 1. Jandy® Pro Series LED Light Minimum 1.5" pipe length

3.2 Installing the Light Fixture

NOTE: Perform these steps *only* after the electrical system requirements are met.

1. Keep protective cover on to protect the light during installation.

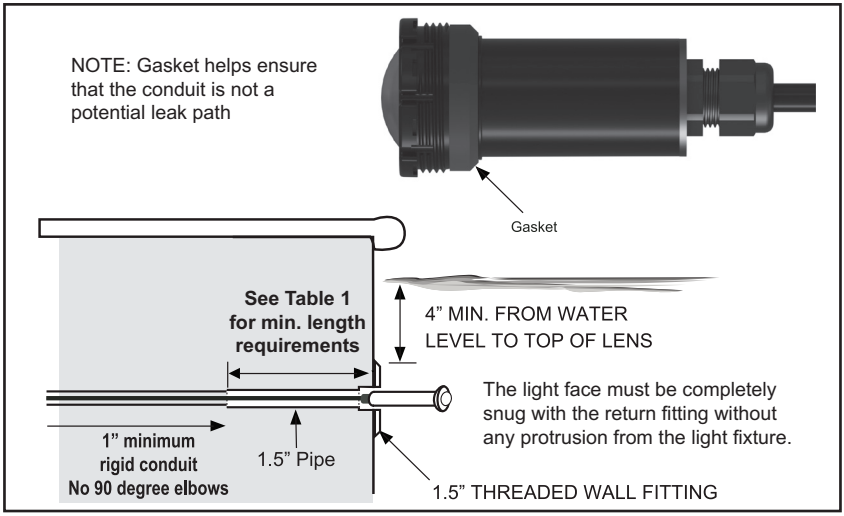
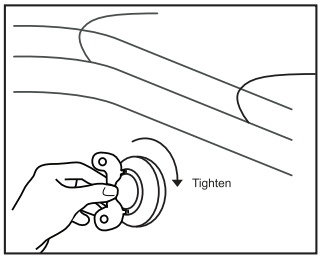


Figure 2. Standard installation with 1.5" pool wall fitting

2. Snake the electric cord through the conduit outlet of the wall fitting, into the conduit and up to the location of the pool transformer. Cut the cord 18"-24" beyond the length needed to reach the transformer to allow for a service loop. Pull the fixture snug to the wall fitting.
3. Remove protective cover once light has been pulled into the fitting.
4. Install cosmetic cover if desired.

NOTE: When using a 1 1/2" MIP fitting on the back of a SP-1022 or SP-1408 Wall Fitting, the interior of the Spears and Dura MIP are too small for use with the Jandy® Pro Series Nicheless LED Lights.

5. Using the included installation tool, thread the light into the wall fitting until it is snug. The light face must be completely flush with the return fitting. Please provide the pool owner with a minimum of 1 key upon job completion.



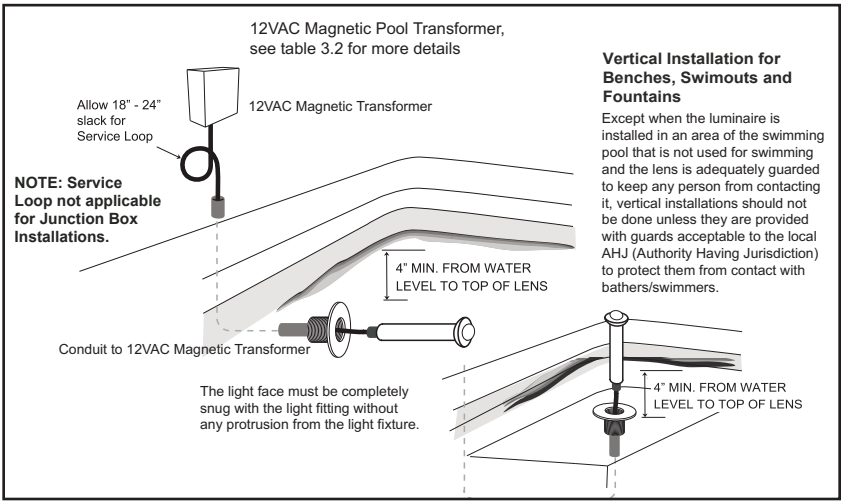


Figure 3. Standard installation with 1.5" pool wall fitting

Section 4. Wiring Options for Controlling Jandy® Pro Series Nicheless LED Lights

NOTE: Always consider the cable length when calculating the input voltage at the transformer. The maximum run of service between transformer and lights should not exceed 150ft. in length, inclusive of the use of a J Box or not.

To the extent allowed by local installation codes in effect in the installation jurisdiction and capacity of the electrical equipment, multiple Jandy Pro Series lights may be controlled with a single switch and a 12VAC magnetic transformer so their colors may be synchronized.

IMPORTANT NOTE: All fixtures must be tied into the same transformer, circuit or switch for synchronization to occur. The use of Solid Core over Stranded wire and terminating Bus Bars is strongly recommended.

4.1 Wiring to an AquaLink® Controller

The Jandy Pro Series Nicheless LED Lights can be controlled by an AquaLink controller. Connect the transformer powering the lights to one of the auxiliary relays in the AquaLink.

Refer to Figure 4 to connect the Jandy Pro Series Nicheless LED Lights to the Power Center.

4.2 Wire Gauge and Length

CAUTION

Jandy® Pro Series Nicheless Underwater LED Lights are low voltage fixtures. Improper wire gauge and wire length can effect the performance of these products. Follow the guidelines below to determine the proper operation and optimum performance of the lights.

Voltages are determined by the measured voltage level at the Bus Bar where the transformer and cords are connected.

NOTE: Each color mode has a slightly different power draw

6W & 12W lights: Min/Max Voltage per cord length		
Cord Length	**Min. Voltage**	**Max. Voltage**
50 Feet	9.4VAC	12.4VAC
100 Feet	10.7VAC	13.2VAC
150 Feet	11.82VAC	13.8VAC

24W Lights: Min/Max Voltage per cord length		
Cord Length	**Min. Voltage**	**Max. Voltage**
50 Feet	10.34VAC	12.56VAC
100 Feet	10.9VAC	13.5VAC
150 Feet	11.43VAC	14.1VAC

Table 2. Jandy® Pro Series LED Light Voltage Min/Max Levels

⚠ WARNING

RISK OF ELECTRICAL SHOCK OR ELECTROCUTION, which could result in serious injury or death. A Ground Fault Circuit Interrupter (GFCI) for 120 Volt transformers should be used if required by the transformer manufacturer or if required by the local applicable code and/or Authority Having Jurisdiction (AHJ). When a GFCI is used, the conductors on the load side of the GFCI circuit shall not occupy conduit, boxes, or enclosures containing other conductors unless the additional conductors are also protected by a GFCI. Refer to local codes for complete details.

⚠ WARNING

RISK OF ELECTRICAL SHOCK OR ELECTROCUTION, which could result in serious injury or death. The Jandy Pro Series Nicheless LED Lights are only available for 12-volt AC power. For supply connection, use only an isolating low voltage power supply with ungrounded output, evaluated and listed by a NRTL for swimming pool use.

4.3 Wiring to a Switch

The Jandy® Pro Series Nicheless LED Lights can be wired to a switch to manually operate the lights. Refer to Figure 4 to connect the lights into the switch.

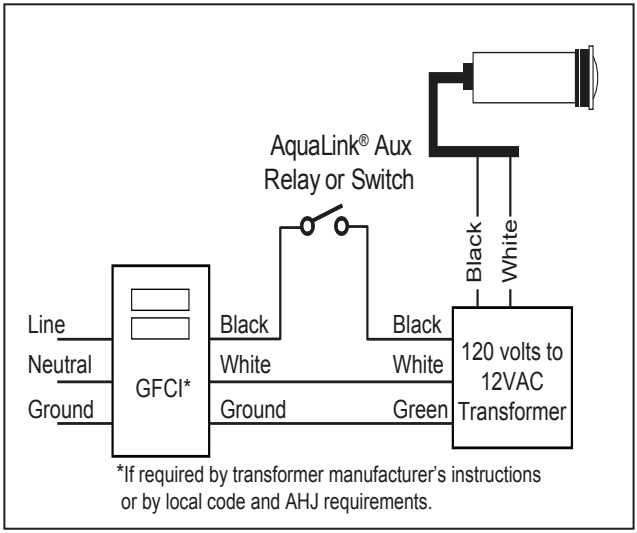


Figure 4. Wiring Jandy Pro Series Nicheless Underwater Lights

4.4 Twelve (12) Volt Installation

A 12-14 Volt AC Magnetic Transformer must be used to power all 12-Volt lights.

NOTE For optimum performance Jandy Pro Series recommends not exceeding the load factor specified by the instructions included with the transformer.

To ensure maximum safety, use only a Class 2 magnetic transformer that can supply 12-14 Volts AC to power all 12-Volt lights. The transformer must be listed or certified by a Nationally Recognized Testing Laboratory (NRTL) for the intended use.

⚠ CAUTION

To prevent risk of fire which could result in property damage, and to ensure optimum performance, do not exceed the load factor specified in the instructions provided by the transformer manufacturer.

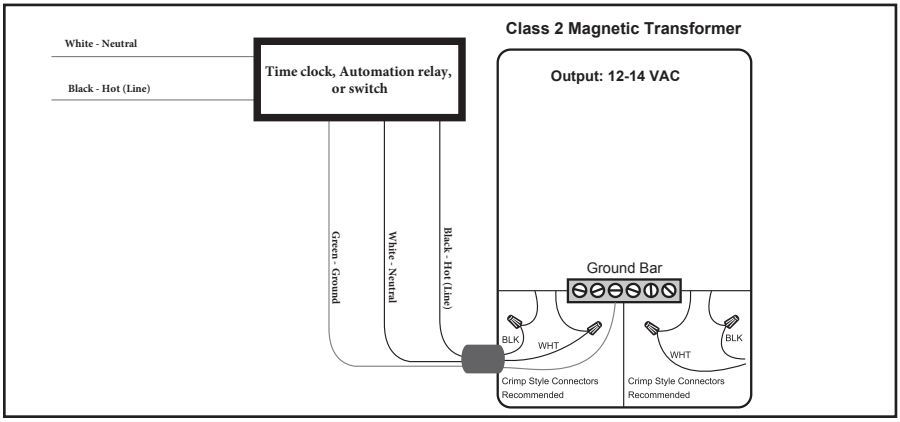


Figure 5. Wiring LED Lights to a 12 Volt Magnetic Transformer

NOTE A magnetic low-voltage dimmer switch or dimming relay may be used when Jandy Pro Series Nicheless WHITE ONLY lights are installed. Jandy Pro Series color lights are NOT DIMMABLE and are NOT COMPATIBLE with dimmer switches or dimmer relays.

Section 5. Jandy® Pro Series Nicheless Underwater LED Light Operating Instructions

5.1 Light Synchronization

NOTE This section only applies to the color (RGBW) lights. All fixtures must be tied into the same transformer, circuit or switch for synchronization to occur.

1. Turn the light **ON**. If the light has been off for 7 seconds or longer, the light will turn on with the last color selected.
2. To synchronize multiple lights to the same color mode, you will need to reset to the beginning of the color mode sequence. With the lights **ON**, turn them **OFF** for five (5) seconds, then turn **ON** again. All of the lights will reset to the Alpine White color mode. If all of the lights are not in the Alpine White color mode, they have not been synchronized, repeat step 2.

5.2 Operating the Light

3. To change the color mode, turn the light **OFF** for one 1-3 seconds. Continue turning **OFF** and **ON** until the desired light color mode is reached. See Table 3 for the color mode sequence.

Example: If you followed step 3 and are now on Sky Blue and want the lights to be Violet, then the lights must be turned off and on 7 times to bring you to Violet.

Sequence Order	Color Modes
1	Alpine White
2	Sky Blue
3	Cobalt Blue
4	Caribbean Blue
5	Spring Green
6	Emerald Green
7	Emerald Rose
8	Magenta
9	Violet
10	Slow Color Splash
11	Fast Color Splash
12	America the Beautiful
13	Fat Tuesday
14	Disco Tech

Table 3. Color Mode Sequence

4. The lights have memory. If the lights are off for 7 seconds or more, the next time the lights are turned on, they will return to the last color mode they were on prior to being turned off (Step 1 listed above). This function allows you to keep your lights returning to your favorite color mode every time the lights are turned back on.

NOTE To synchronize colors on multiple Jandy® Pro Series Nicheless Underwater LED Light systems wired to separate switches, perform the above actions on all of their switches simultaneously. All Jandy Pro Series Nicheless Underwater LED Lights will synchronize automatically if activated by the same switch. No other accessories are required.

Section 6. S-Series Nicheless Underwater LED Light Operating Instructions

6.1 Light Synchronization for S Series Lights

1. Turn the light **ON** and wait for **20 seconds**. The lights will first come on white for 10-15 seconds and then return to the color mode it was on prior to being turned off.
2. To synchronize lights, turn the lights off, wait 6-9 seconds and then turn them back on. You should see three quick flashes (red, green & blue), then all the lights will reset to the first color mode (Treasure Island)
3. (A) If you do not see three quick flashes, then the lights did not reset.

   (B) If you did not wait long enough (shorter than 6 seconds) the lights will advance to their next color mode. They are not synced as each light could be in different color modes.

   (C) If you wait too long (longer than the 9 seconds) they all will go to white for 10-15 seconds, looking like they're synced BUT AFTER 15 seconds they will return to their previous color mode (which at this point the lights are still unsynchronized).
4. Repeat step 1 - 3 until synchronization is accomplished.

6.2 Operating the S Series Lights

1. To move to the next color mode, turn the lights off for 1-2 seconds and turn back on. Repeat until desired color mode is found.

Example: If you are now on Fixed Green and want the lights to be White, then the lights must be turned off and on 7 times to bring you to Moonlight White.

Sequence Order	Color Modes for S Series Lights
1	Treasure Island / Slow Color Change
2	Moonlight White / Fixed White
3	SAVI Blue / Fixed Blue
4	Sargasso Sea / Fixed Green
5	Blue Lagoon / Fixed Light Blue
6	Passion Pink / Fixed Light Blue
7	Caribbean Hues / Blue and Green Slow Color Change
8	Copacabana / Magenta, Yellow and Orange Slow Color Change
9	Dance Party / Multi Color Strobe Effect

Table 4. Color Mode Sequence for S Series Lights

2. The lights have memory. If the lights are off for 10 seconds or more, the next time the lights are turned on, they will go to white for approximately 10-15 seconds and then return to the last color mode they were on prior to being turned off. This function allows you to keep your lights returning to your favorite color mode every time the lights are turned back on.

NOTE To synchronize colors on multiple S-Series Nicheless Underwater LED Light systems wired to separate switches, perform the above actions on all of their switches simultaneously. All S-Series Nicheless Underwater LED Lights will synchronize automatically if activated by the same switch. No other accessories are required.

Section 7. H-Series Nicheless Underwater LED Light Operating Instructions

7.1 Light Synchronization for H-Series Lights

1. Turn the light **ON**. The lights will first come on white for 15 seconds and then return to the color mode it was on prior to being turned off.
2. H-Series Lights may be operated independently or together depending upon the initial installation of your lights. All H-Series lights that are wired to the same 12V Transformer/Switch will synchronize their operation of the 17 Color modes. If they do get out of sync, turn the switch on then back off - wait between 6 and 9 seconds and turn the switch back on. They should now all be in position #1.

7.2 Operating the H-Series Lights

1. To move to the next color mode, turn the lights off for 1-3 seconds and turn back on. Repeat until desired color mode is found.

Example: If you are now on Deep Blue and want the lights to be White, then the lights must be turned off and on 5 times to bring you to White.

Sequence Order	Color Modes (Universal ColorLogic® emulation)
1	Color Show - Voodoo Lounge
2	Deep Blue Sea
3	Royal Blue
4	Afternoon Skies
5	Aqua Green
6	Emerald
7	Cloud White
8	Warm Red
9	Flamingo Pink
10	Vivid Violet
11	Sangria Dark Purple/Red
12	Color Show - Twilight
13	Color Show - Tranquility
14	Color Show - Gemstone
15	Color Show - USA
16	Color Show - Mardi Gras
17	Color Show - Cool Cabaret

Table 5. Color Mode Sequence for H-Series Lights

2. The lights have memory. If the lights are off for 60 seconds or more, the next time the lights are turned on, they will go to white for approximately 15 seconds and then return to the last color mode they were on prior to being turned off. This function allows you to keep your lights returning to your favorite color mode every time the lights are turned back on.
3. H-Series LED Colored Nicheless Lights are specifically designed to be operated by select Hayward® Controls and Zodiac® Rev T.2 RS Systems for direct switching/access to colors and programs. Please refer to Hayward and Zodiac Series controls for installation and Operational directions.

NOTE At NO TIME shall the H-Series lights be used in conjunction with any other lights. The color choices, shows and operations are entirely different.

Section 8. P-Series Nicheless Underwater LED Light Operating Instructions

8.1 Operating the P-Series Lights

1. Turn the light **ON** and wait for **20 seconds**. The lights will first come on white for a few seconds and then return to the color mode it was on prior to being turned off.
2. P-Series LED Colored Nicheless Lights are specifically designed to be operated by select Pentair® Controls and Zodiac Rev T.1 controls for direct switching/access to colors and programs WITHOUT having to toggle sequences ON/OFF. Please refer to Pentair and Zodiac Series controls for installation and Operational directions.

NOTE When using the above mentioned controls - when programming the Light Function - the general selection choice offered that should be selected is IntelliBrite. The color and show names will be slightly different but all operations will be correct.

NOTE At NO TIME shall the P-Series lights be used in conjunction with any other lights. The color choices, shows and operations are entirely different.

3. To move to another color mode, cycle the lights OFF/ON the selected number of times listed below.

Example: If you are now on Blue (8) and want the lights to be Magenta (12), then the lights must be turned off and on twelve (12) times to bring you to Magenta. To move to Old School, turn OFF/ON 1 time.

⚠ WARNING

During OFF/ON Cycle, before the selected mode is displayed, no illumination will occur. During this period of time the pool/spa will be dark and precautions should be taken to avoid unforeseen accidents. Failure to observe this warning may result in serious injury or death to pool/spa users.

Cycle Number	Color Modes for P-Series Lights (IntelliBrite® emulation)
1	SAm® Mode
2	Party Mode
3	Romance Mode
4	Caribbean Mode
5	American Mode
6	California Sunset
7	Royal Mode
8	Blue
9	Green
10	Red
11	White
12	Magenta
*13**	*Hold : Saves the current color choice during a color show*
*14**	*Recall: Turns on last saved color selection selected in position #13*
* These 2 Modes are specifically used with advanced control systems and not manual operations	

Table 6. Color Mode Sequence for P-Series Lights

4. The lights have memory. If the lights are off for 5-10 seconds, the next time the lights are turned on, they will go to white for a few seconds and then return to the last color mode they were on prior to being turned off. This function allows you to keep your lights returning to your favorite color mode every time the lights are turned back on.

Section 9. Winterizing

Do not keep the winter water level at the level of the light. Make certain that the water level is left at least 4" or more above or below the light depending on the pool's other winterization needs. Consult a Local Swimming Pool Professional for proper winterization. At NO TIME should there be water removed from the pool without checking ground water tables.

Section 10. Troubleshooting

Use the troubleshooting information in the following table for suggestions.

Symptom	Problem	Corrective Action
All lights fail to illuminate	Lights are not recieving power	Check 120VAC power supply into transformer. Check for 12VAC output at transformer. Check or reset GFCI. Make sure 120 volts has not been used in the installation - if so damage is assured and is NOT WARRANTABLE.
One or more lights are dim, blinking or not working	Poor connection or improper wire gauge	Separate each light and independently wire 12V to the single light only. Repeat this process on each light. If junction box is being used, check for proper connection of light cord. Verify that the correct wire gauge is being used between the transformer and junction box.
Colored lights out of synch	Improper voltage supply or poor connection to the light	Verify that proper wire connections are being achieved for the lights that are out of sync. Reset all the lights to white by turning lights OFF for five (5) seconds, then turning ON
Light is blinking	Light is too hot	Confirm that the light is submerged in water that does not exceed a temperature of 104F (40C)

NOTES

Zodiac Pool Systems, Inc.
2620 Commerce Way, Vista, CA 92081
1.800.822.7933 | www.ZodiacPoolSystems.com

Zodiac Pool Systems Canada, Inc.
2115 South Service Road West, Unit 3 Oakville,
ON L6L 5W2
1.888.647.4004 | www.ZodiacPoolSystems.ca

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CAN/CSA C22.2 NO.89

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Party Authorized To Apply Mark: Same as Manufacturer
Report Issuing Office: Lake Forest, CA

Control Number: 4008529 **Authorized by:** Ellen Fuialek

for Thomas J. Patterson, Certification Manager

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Intertek Testing Services NA Inc.
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Standard(s):	UL 676 Issued: 2003/6/9 Ed: 8 Rev 2013/12/19 Underwater Luminaires and Submersible Junction Boxes CAN/CSA C22.2 No. 89 Issue: 1976/05/01 Swimming-Pool Luminaires, Submersible Luminaires and Accessories (R2008)
Product:	Low Voltage Underwater LED Luminaires

AUTHORIZATION TO MARK

Models:	SaVi Note-XXX, SaVi-Melody-XXX, SaVi-Blanco-XXX, SaVi-Perfect Light-XXX, SAVI-Melody.XXX, SAVI-MelodyXXX, SAVI-Note.XXX, SAVI-NoteXXX, SAVI-MB.XXX, SAVI-MBXXX, SAVI-MBPro.XXX, SAVI-MBPRO-XXX, Mini-Mel.XXX, Mini-MelodyXXX, Mini-Blanco.XXX, Mini-MBXXX, Melody-SOL.XXX, SAVI-SOLXXX, JLU4C9WXXX, SAVMINXXXS, SAVMINXXXP, SAVMINXXXH, JLU4C20WXXX, SAVMEL50S, SAVMELXXXP, SAVMELXXXH, JLU4C30WXXX, JLUW9WXXX, JLUWW9WXXX, JLUW20WXXX, JLUWW20WXXX, JLUW30WXXX, JLUWW30WXXX, JLB4C20WXX, SAVBUBXXS, SAVBUBXXP, SAVBUBXXH, JLBWW20Wxxx, JLBW20Wxxx, BUB-XMBxxx, SAVBUBMINxxx, JLBW9Wxxx, JLBWW9Wxxx, BUB-XMELxxx, SAVSOLxxx

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Country:	USA	**Country:**	USA
Contact:	Shajee Siddiqui Alternate: Philip Escobedo	**Contact:**	Mr. Roy Archer
Phone:	(760)-734-7035	**Phone:**	(407) 857-9900
FAX:	(607) 454-1126	**FAX:**	(407) 857-0050
Email:	Shajee.siddiqui@zodiac.com, Philip.escobedo@zodiac.com	**Email:**	roy.archer@zodiac.com

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for Thomas J. Patterson, Certification Manager

This document supersedes all previous Authorizations to Mark for the noted Report Number.

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Standard(s):	UL 676 Issued: 2003/6/9 Ed: 8 Rev 2013/12/19 Underwater Luminaires and Submersible Junction Boxes CAN/CSA C22.2 No. 89 Issue: 1976/05/01 Swimming-Pool Luminaires, Submersible Luminaires and Accessories (R2008)
Product:	Low Voltage Underwater LED Luminaires

AUTHORIZATION TO MARK

Models:	SaVi Note-XXX, SaVi-Melody-XXX, SaVi-Blanco-XXX, SaVi-Perfect Light-XXX, SAVI-Melody.XXX, SAVI-MelodyXXX, SAVI-Note.XXX, SAVI-NoteXXX, SAVI-MB.XXX, SAVI-MBXXX, SAVI-MBPro.XXX, SAVI-MBPRO-XXX, Mini-Mel.XXX, Mini-MelodyXXX, Mini-Blanco.XXX, Mini-MBXXX, Melody-SOL.XXX, SAVI-SOLXXX, JLU4C9WXXX, SAVMINXXXS, SAVMINXXXP, SAVMINXXXH, JLU4C20WXXX, SAVMEL50S, SAVMELXXXP, SAVMELXXXH, JLU4C30WXXX, JLUW9WXXX, JLUWW9WXXX, JLUW20WXXX, JLUWW20WXXX, JLUW30WXXX, JLUWW30WXXX, JLB4C20WXX, SAVBUBXXS, SAVBUBXXP, SAVBUBXXH, JLBWW20Wxxx, JLBW20Wxxx, BUB-XMBxxx, SAVBUBMINxxx, JLBW9Wxxx, JLBWW9Wxxx, BUB-XMELxxx, SAVSOLxxx

Listing Constructional Data Report (CDR)

1.0 Reference and Address			
Report Number	102398437LAX-001	Original Issued: 20-Jan-2016	Revised: None
Standard(s)	UL 676 Issued: 2003/6/9 Ed: 8 Rev 2013/12/19 Underwater Luminaires and Submersible Junction Boxes CAN/CSA C22.2 No. 89 Issue: 1976/05/01 Swimming-Pool Luminaires, Submersible Luminaires and Accessories (R2008)		
Entirely Replaces Report Number	3104147CHI-005		
Applicant	Zodiac Pool Systems, Inc.	Manufacturer	**Zodiac Pool Systems, Inc.**
Address	2620 Commerce Way Vista, CA 92081	Address	9400 Southbridge Park Court Suite 200 Orlando, FL 32819
Country	USA	Country	USA
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2.0 Product Description	
Product	Low Voltage Underwater LED Luminaires
Brand name	NA
Description	The products covered by this report are low voltage, underwater, LED light fixtures for use in permanent installations in pools and spas suitable for installation at depths of 4" or more below the water surface when installed inside the walls of the pool or spa. They may also be installed, either submerged (Inside the Pool/Spa) or unsubmerged (Outside the Pool/Spa), in the vertical or horizontal areas within 10 feet of the Pool or SPA, when supplied by a listed power supply which complies with UL 379. Power for the SaVi-Melody-XXX, SaVi-Blanco-XXX, and SaVi-Perfect Light-XXX are supplied by an Intermatic PX100 or PX300 power supply / low voltage ac power source or other approved Class 2/3 Power Source which meets the isolation requirements of UL Outline 379 – Power Units for Fountain, Swimming Pool and Spa Luminaries, Issue 3, 2010. For installation in accordance with the National Electrical Code, NFPA 70 and Canadian Electrical Code, Part I (CEC), CSA C22.1.
Models	SaVi Note-XXX, SaVi-Melody-XXX, SaVi-Blanco-XXX, SaVi-Perfect Light-XXX, SAVI-Melody.XXX, SAVI-MelodyXXX, SAVI-Note.XXX, SAVI-NoteXXX, SAVI-MB.XXX, SAVI-MBXXX, SAVI-MBPro.XXX, SAVI-MBPRO-XXX, Mini-Mel.XXX, Mini-MelodyXXX, Mini-Blanco.XXX, Mini-MBXXX, Melody-SOL.XXX, SAVI-SOLXXX, JLU4C9WXXX, SAVMINXXXS, SAVMINXXXP, SAVMINXXXH, JLU4C20WXXX, SAVMEL50S, SAVMELXXXP, SAVMELXXXH, JLU4C30WXXX, JLUW9WXXX, JLUWW9WXXX, JLUW20WXXX, JLUWW20WXXX, JLUW30WXXX, JLUWW30WXXX, JLB4C20WXX, SAVBUBXXS, SAVBUBXXP, SAVBUBXXH, JLBWW20Wxxx, JLBW20Wxxx, BUB-XMBxxx, SAVBUBMINxxx, JLBW9Wxxx, JLBWW9Wxxx, BUB-XMELxxx, SAVSOLxxx
	"XXX" can be 50, 100, 150 to indicate length of cord. On the JLB4C20WXX, SAVBUBXXP, SAVBUBXXH, SAVBUBXXS "XX" is 100 or 150 to indicate length of cord. On the JLBWW20Wxxx*, JLBW20Wxxx*, BUB-XMBxxx*, JLBWW20Wxxx*, JLBW20Wxxx*, BUB-XMBxxx* models where "xxx" may be any number between 25 and 150 to indicate length of cord; and "*" may be "J", "S", "P", or "H" to indicate software/firmware specification. The models with the designator "B" or "BUB" in the model designation are known as "bubbler" models and may be installed in the floor of the pool in a section of pipe/plumbing. In this case the light lens is to be recessed or otherwise guarded so as to prevent direct contact by a bather in the pool. SaVi-Melody-XXX is a combination of the SaVi Note-100, where a control module is placed

2.0 Product Description	
Model Similarity	SaVi-Melody-XXX is a combination of the SaVi-Note-100, where a control module is placed behind the SaVi-Note-100 to manually control the LEDs lighting effects and arrangements for model SaVi-Note-100, without the need for an M4 controller. SaVi-Blanco-XXX, and SaVi-Perfect Light-XXX are the same as SaVi-Melody-XXX, but use different LED modules. Model SAVI-Melody.XXX and Melody-SOL.XXX are similar to SAVI-Melody-XXX but combined main housing and bottom housing with some changes to the layout of the schematic. The following models are equivalent to each other: SAVI-Melody.XXX and SAVI-MelodyXXX, SAVI-Note.XXX and SAVI-NoteXXX, SAVI-MB.XXX and SAVI-MBXXX SAVI-MBPro.XXX and SAVI-MBPRO-XXX, Mini-Mel.XXX and Mini-MelodyXXX, Mini-Blanco.XXX and Mini-MBXXX Melody-SOL.XXX and SAVI-SOLXXX The following are equivalent to each other except for name used for marketing purpose: Mini-MelodyXXX and JLU4C9WXXX, SAVI-MelodyXXX and JLU4C20WXXX, Melody-SOL.XXX and JLU4C30WXXX, Mini-Blanco.XXX and JLUW9WXXX, SAVI-MBXXX and JLUW20WXXX, SAVI-MBPRO-XXX and JLUW30WXXX, JLB4C20W100 and JLB4C20W150. The JLUWW9WXXX, JLUWW20WXXX, JLUWW30WXXX are the same as the JLUW9WXXX, JLUW20WXXX and JLUW30WXXX except the color temperature is different. The JLBWW9Wxxx, JLBWW20Wxxx is the same at the JLBW9Wxxx, JLBW20Wxxx except the color temperature is different. The SAVBUBMINxxx* is like the BUB-XMBxxx but the SAVBUBMINxxx* is 9W max.
Ratings	SaVi Note-XXX - 12 VDC, 1.3 A max SaVi-Melody-XXX - 12 VAC, 1.5 A max, 60Hz SaVi-Blanco-XXX - 12 VAC, 1.5 A max, 60Hz SaVi-Perfect Light-XXX - 12 VAC, 1.5 A max, 60Hz SAVI-Melody.XXX - 12VAC, 2.0Amax, 60Hz SAVI-MelodyXXX - 12VAC, 2.0Amax, 60Hz SAVI-Note.XXX - 12VDC, 2.0A Max SAVI-NoteXXX - 12VDC, 2.0A Max SAVI-MB.XXX - 12VAC, 2.0Amax, 60Hz SAVI-MBXXX - 12VAC, 2.0Amax, 60Hz SAVI-MBPro.XXX - 12VAC, 2.5Amax, 60Hz SAVI-MBPRO-XXX - 12VAC, 2.5Amax, 60Hz Mini-Mel.XXX - 12VAC, 2.0Amax, 60Hz Mini-MelodyXXX - 12VAC, 2.0Amax, 60Hz Mini-Blanco.XXX - 12VAC, 2.0Amax, 60Hz Mini-MBXXX - 12VAC, 2.0Amax, 60Hz Melody-SOL.XXX - 12VAC, 2.5Amax, 60Hz SAVI-SOLXXX - 12VAC, 2.5Amax, 60Hz JLU4C9WXXX, SAVMINXXXS, SAVMINXXXP, SAVMINXXXH - 12VAC, 9 Watts Max, 60Hz JLU4C20WXXX, SAVMEL50S, SAVMELXXXP, SAVMELXXXH - 12VAC, 20 Watts Max, 60Hz JLU4C30WXXX - 12VAC, 30 Watts Max, 60Hz JLUW9WXXX, JLUWW9WXXX - 12VAC, 9 Watts Max, 60Hz JLUW20WXXX, JLUWW20WXXX - 12VAC, 20 Watts Max, 60Hz JLUW30WXXX, JLUWW30WXXX, SAVSOLxxx - 12VAC, 30 Watts Max, 60Hz JLB4C20WXX, SAVBUBXXS, SAVBUBXXP, SAVBUBXXH - 12VAC, 20 Watts Max, 60Hz JLBWW20Wxxx, JLBW20Wxxx, BUB-XMBxxx, BUB-XMELxxx - 12VAC, 20 Watts Max, 60Hz SAVBUBMINxxx JLBW9Wxxx, JLBWW9Wxxx - 12VAC, 9Watts Max, 60Hz
Other Ratings	NA

8.0 Test Summary					
Evaluation Period	12/14/2015 - 01/20/2016			Project No.	G102398437
Sample Rec. Date	NA	Condition	Production	Sample ID.	NA
Test Location	25800 Commercentre Dr., Lake Forest, CA 92630 USA				
Test Procedure	Testing Lab				

Determination of the result includes consideration of measurement uncertainty from the test equipment and methods. The product was tested as indicated below with results in conformance to the relevant test criteria. The product was also evaluated to UL 8750 Issued: 2009/11/18 Ed: 1 Rev: 2015/04/01 Light Emitting Diode (LED) Equipment for Use in Lighting Products and CSA C22.2#250.13 Issued: 2014/07/01 Light Emitting Diode (LED) Equipment for Lighting Applications

Due to the previous testing performed under Intertek Report 3104147CHI-005 no additional testing was necessary.

8.1 Signatures			
A representative sample of the product covered by this report has been evaluated and found to comply with the applicable requirements of the standards indicated in Section 1.0.			
Completed by:	Jason Stone	Reviewed by:	Steven Pasternack
Title:	Engineer	Title:	Reviewer
Signature:		Signature:	