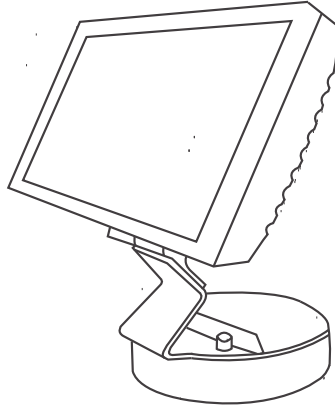


SaVi Flood Light Fixture



Specifications:

Application:	UL Listing Wet / Dry Location
Location Listing:	UL Listed, CE Certified
IP Rating:	IP 66
Dimensions:	12.62"L x 7.75"W x 9.12"H 320.5mm 196.8mm 231.6mm
Beam Angle:	45 Degree Angles
Lamps:	360 Red, Green and Blue 5mm LED (Light Emitting Diode)
Operating Temperature:	-4° F ~ +104° F / 20° C ~ +40° C
Operating Voltage:	90/264VAC 50/60 Hz.
Wattage / Current:	25 Watt / 3A Max.
Weight:	9 LBS. / 4.1 Kg.
Available Colors:	White, Black
Warranty:	2 Years

Installation Manual

Rev. C 03-25-2005

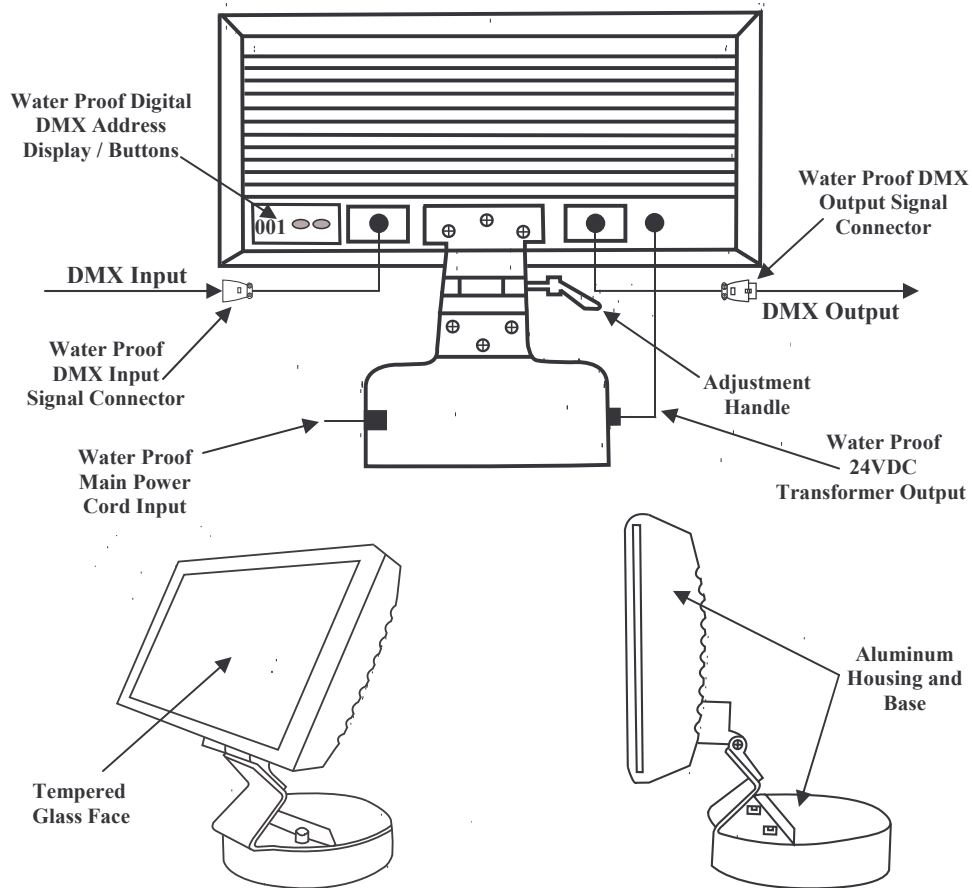
Table of Contents

	Page
1.0 General Information	2
2.0 Introduction to DMX	3
3.0 Cable Connections	3
4.0 Wiring Application	4
5.0 System Operation	5
6.0 Fixture Power / Normal Operation	5
7.0 Digital DMX Addressing Display/Buttons	5
8.0 Digital DMX Addressing Chart	6-7
9.0 Termination of DMX Control Run	8
10.0 Photometrics	9
11.0 Trouble Shooting	10

1.0 General Information:

Model: SaViFLOOD

SaVi Flood Fixture Should Only Be Installed By a Qualified Electrician:



The SaVi Flood fixture uses a total of 360 Red, Green and Blue LED's, as a source of illumination. This RGB LED technology will display up to 16.7 million color variations. The SaVi Flood fixture is a 120/240VAC free standing fixture, that is energy efficient and easy to install. Simply connect this fixture to any 120VAC or 240VAC power source and a Standard DMX512 controller, to provide a wide range of wash and effect lighting. This fixture is constructed of a cast aluminum alloy with a tempered glass face plate. This fixture is completely sealed to keep it free from dust, dirt, water and moisture. The SaVi Flood fixture is articulated between the head and base which allows 180 degrees of angular adjustments to meet most any lighting application. A special effect slot is provided in the fixture face to add a special diffuser to achieve an even wider array of effects. Super Vision International, backs each SaVi Flood fixture with a full two year warranty.

2.0 Introduction to DMX:

Model: SaViFLOOD

The DMX512/1990 protocol was introduced in the 1986 by a committee of the United States Institute of Theater Technology (USITT) as a standard method for controlling dimmers for lighting consoles. Since then, the practice has been widely adopted by many manufactures, making it the most universally accepted controlled procedure in the lighting industry today. Super Vision's SaVi Flood fixture brings DMX capabilities to the world. This fixture can be controlled from any standard lighting console or computer with DMX512/1990 compliant output.

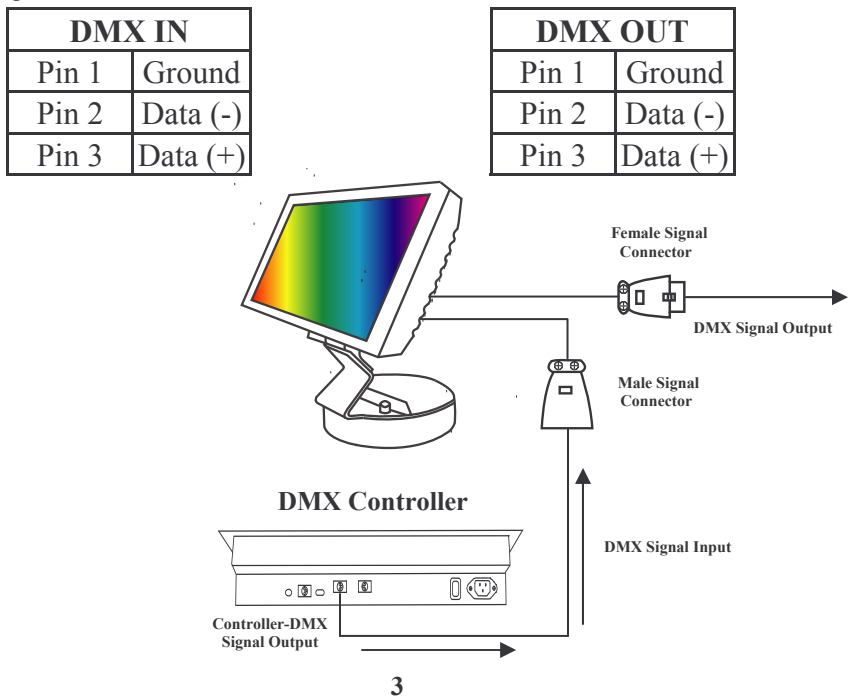
Numerous SaVi Flood fixtures can be linked to the same DMX signal cable in a daisy-chain configuration to achieve synchronized operation and/or individual control of every fixture in the system. With the use of an external DMX signal distributors, hundreds of fixtures can be connected and controlled simultaneously. (Ref. Page 4) (For DMX Termination Ref. Page 8)

3.0 Cable Connections:

DMX512/1990 use a sophisticated, high speed digital communication system. The use of a high quality data cable and professional grade connectors is critical to the systems reliability and dependability. The interconnecting cables must be rated for EIA-485 use and with one or more shielded wire twisted pairs and characteristic impedance near 120 ohms.

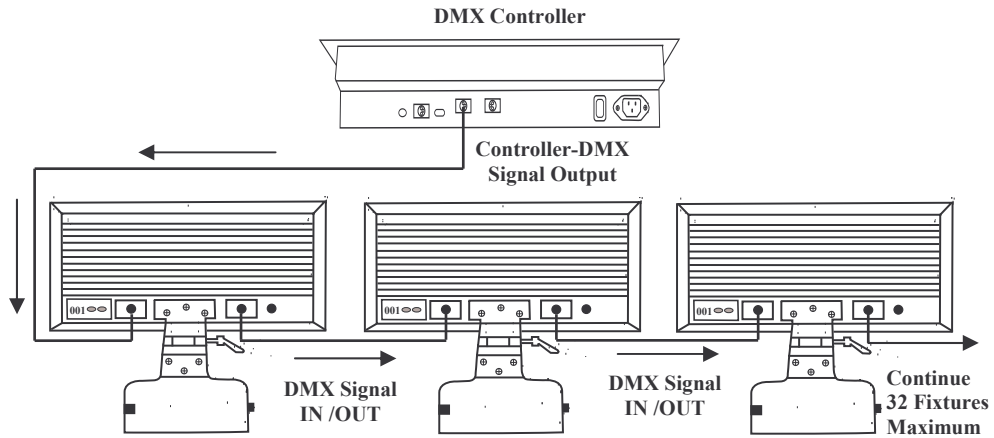
Any cable rated by the manufacturer that compiles with the EIA-485 use may be substituted. Examples: Suitable cables include Belden 9841 or 9842, Proplex PC22P or PC224P and Alpha 9817. The SaVi Flood fixture includes two port connectors for the DMX data signal, looking at the rear of the fixture, the left port is "DMX IN" and right port is "DMX OUT". This configuration allows the user to use multiple fixtures simultaneously. (Ref. Page 4)

Note: When using fixtures in an outdoor application, prior to installing DMX cables permanently, it is necessary to slide shrink wrap tubing, which is supplied in kit, over each outdoor connection and shrink down over fittings using heat gun for water and moisture protection.

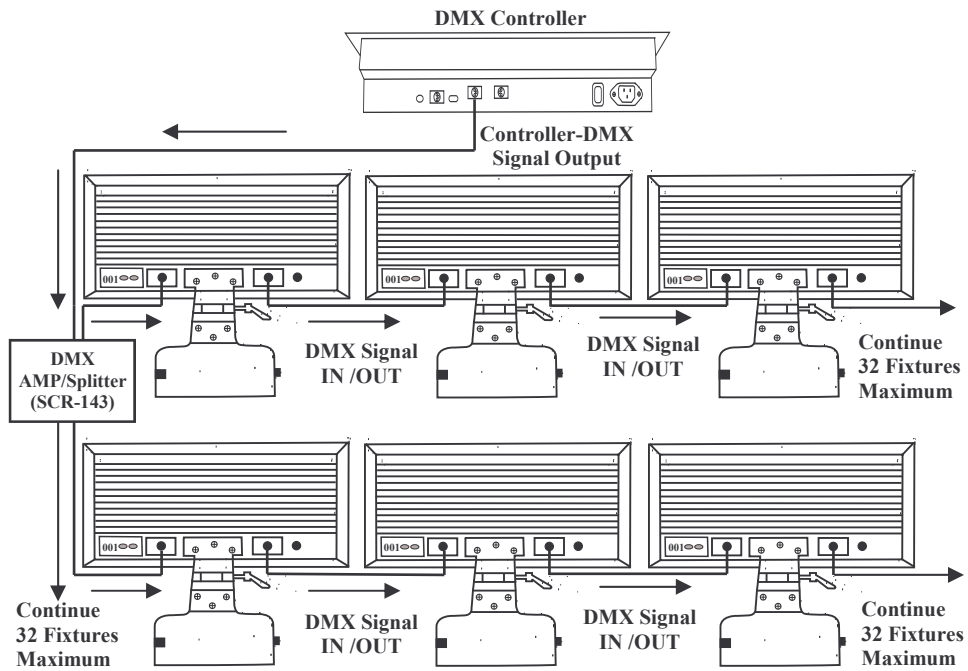


4.0 Wiring applications:

Model: SaViFLOOD



(Note: Each Daisy Chain configuration use only 32 fixtures maximum.)



(Note: Each Daisy Chain configuration use only 32 fixtures maximum.)

5.0 System Operation:

Model: SaViFLOOD

Each SaVi Flood fixture contains 360, 5mm LED's, each color consumes 1 channel.

- ◆ Channel # 1 Controls the Red LED's
- ◆ Channel # 2 Controls the Green LED's
- ◆ Channel # 3 Controls the Blue LED's

The use of a DMX terminator is highly recommended with long DMX cable runs to prevent reflections along the data chain. (Ref. Page 8)

6.0 Fixture Power Up / Normal Operation:

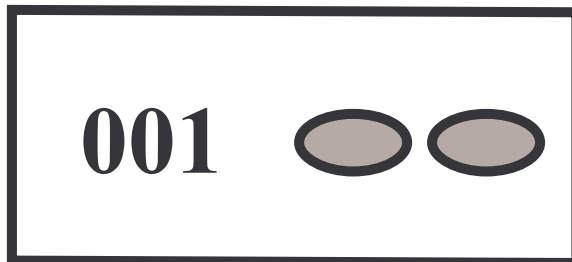
If power is supplied to your SaVi Flood fixture when there is no DMX signal present, all LED's will go to full light intensity. This can therefore be utilized as a method of troubleshooting defective data cables within a given show or set-up. Once the DMX signal is present, the light will follow intensity commands as prescribed from the DMX signal source. Each SaVi Flood fixture will respond to only one DMX address. The SaVi Flood fixture addressing requires that the power be cycled "On/Off " before a new DMX address can be recognized.

7.0 Digital DMX Addressing Display/Buttons:

To select DMX addressing on your SaVi Flood fixture. Look at the left rear of your fixture, there is a three digit addressing display which can be set by using two push buttons that are used to select the address you wish to set for that particular fixture. For Example : The three digit 001 means Fixture 1, DMX start address is 1.

Three Digit Display			Fixture No.:	DMX Start Address
0	0	1	1	1

To set a fixture addresses, Reference charts on pages 6 and 7.



8.0 Digital DMX Addressing Chart:

Model: SaViFLOOD

Three Digit Display			Fixture No.:	DMX Start Address
0	0	1	1	1
0	0	2	2	4
0	0	3	3	7
0	0	4	4	10
0	0	5	5	13
0	0	6	6	16
0	0	7	7	19
0	0	8	8	22
0	0	9	9	25
0	1	0	10	28
0	1	1	11	31
0	1	2	12	34
0	1	3	13	37
0	1	4	14	40
0	1	5	15	43
0	1	6	16	46
0	1	7	17	49
0	1	8	18	52
0	1	9	19	55
0	2	0	20	58
0	2	1	21	61
0	2	2	22	64
0	2	3	23	67
0	2	4	24	70
0	2	5	25	73
0	2	6	26	76
0	2	7	27	79
0	2	8	28	82
0	2	9	29	85
0	3	0	30	88
0	3	1	31	91
0	3	2	32	94
0	3	3	33	97
0	3	4	34	100
0	3	5	35	103
0	3	6	36	106
0	3	7	37	109
0	3	8	38	112
0	3	9	39	115
0	4	0	40	118
0	4	1	41	121
0	4	2	42	124
0	4	3	43	127
0	4	4	44	130
0	4	5	45	133
0	4	6	46	136
0	4	7	47	139
0	4	8	48	142
0	4	9	49	145
0	5	0	50	148
0	5	1	51	151
0	5	2	52	154
0	5	3	53	157
0	5	4	54	160
0	5	5	55	163
0	5	6	56	166
0	5	7	57	169

6

Three Digit Display			Fixture No.:	DMX Start Address
0	5	8	58	172
0	5	9	59	175
0	6	0	60	178
0	6	1	61	181
0	6	2	62	184
0	6	3	63	187
0	6	4	64	190
0	6	5	65	193
0	6	6	66	196
0	6	7	67	199
0	6	8	68	202
0	6	9	69	205
0	7	0	70	208
0	7	1	71	211
0	7	2	72	214
0	7	3	73	217
0	7	4	74	220
0	7	5	75	223
0	7	6	76	226
0	7	7	77	229
0	7	8	78	232
0	7	9	79	235
0	8	0	80	238
0	8	1	81	241
0	8	2	82	244
0	8	3	83	247
0	8	4	84	250
0	8	5	85	253
0	8	6	86	256
0	8	7	87	259
0	8	8	88	262
0	8	9	89	265
0	9	0	90	268
0	9	1	91	271
0	9	2	92	274
0	9	3	93	277
0	9	4	94	280
0	9	5	95	283
0	9	6	96	286
0	9	7	97	289
0	9	8	98	292
0	9	9	99	295
1	0	0	100	298
1	0	1	101	301
1	0	2	102	304
1	0	3	103	307
1	0	4	104	310
1	0	5	105	313
1	0	6	106	316
1	0	7	107	319
1	0	8	108	322
1	0	9	109	325
1	1	0	110	328
1	1	1	111	331
1	1	2	112	334
1	1	3	113	337
1	1	4	114	340

8.0 Digital DMX Addressing Chart: Con'd

Model: SaViFLOOD

Three Digit Display			Fixture No.:	DMX Start Address
1	1	5	115	343
1	1	6	116	346
1	1	7	117	349
1	1	8	118	352
1	1	9	119	355
1	2	0	120	358
1	2	1	121	361
1	2	2	122	364
1	2	3	123	367
1	2	4	124	370
1	2	5	125	373
1	2	6	126	376
1	2	7	127	379
1	2	8	128	382
1	2	9	129	385
1	3	0	130	388
1	3	1	131	391
1	3	2	132	394
1	3	3	133	397
1	3	4	134	400
1	3	5	135	403
1	3	6	136	406
1	3	7	137	409
1	3	8	138	412
1	3	9	139	415
1	4	0	140	418
1	4	1	141	421
1	4	2	142	424
1	4	3	143	427
1	4	4	144	430
1	4	5	145	433
1	4	6	146	436
1	4	7	147	439
1	4	8	148	442
1	4	9	149	445
1	5	0	150	448
1	5	1	151	451
1	5	2	152	454
1	5	3	153	457
1	5	4	154	460
1	5	5	155	463
1	5	6	156	466
1	5	7	157	469
1	5	8	158	472
1	5	9	159	475
1	6	0	160	478
1	6	1	161	481
1	6	2	162	484
1	6	3	163	487
1	6	4	164	490
1	6	5	165	493
1	6	6	166	496
1	6	7	167	499
1	6	8	168	502
1	6	9	169	505
1	7	0	170	508

9.0 Termination of DMX Control Run:

Model: SaViFLOOD

Why is it necessary to terminate the end of a DMX512 control run? In Recommended Practice for DMX512 by Adam Bennette, Mr. Bennette states "Incorrect or missing termination is probably the single most common reason for faulty DMX512 systems."

Reflections: DMX512 signals have electrical components in the Radio Frequency (RF) range. Cables carrying radio frequencies are called Transmission Lines and have a special set of rules and formulas that describe their behavior. One of these rules describes what happens to a signal traveling down the cable (at over half the speed of light) when it hits the end of the cable. No, the cable doesn't bulge or explode. Instead a percentage of the signal is "reflected" back up the cable. The way to prevent this reflected energy is to absorb it. To absorb the maximum amount of energy, a resistor which matches the "characteristic impedance" of the cable is placed across the data line. The DMX512 specification states the cable should have a characteristic impedance of 120 ohms (although most DMX512 technicians agree a value between 100 and 120 ohms is satisfactory). A value of 120 ohms is usually specified for proper DMX512 termination.

Why are reflections a problem? The signals travel down the cable at roughly 60% of the speed of light. Although fast, this is not instantaneous. The DMX512 data is digital. Each digit is placed on the line for only 4 millionths of a second (abbreviated 4uS). The receiving device looks at the value of the digit in the center of the 4uS. That is 2uS after the digit is placed on the line. In 2uS a signal can travel down and back about 590 feet of cable. If a device is sitting on a cable such that it receives the reflected signal as well as the initial signal, it sees two numbers at once. It gets confused! There has been DMX512 problems, which were corrected by termination, on cables much shorter than 590 feet. Although it can easily replicated, there are DMX512 problems with cable lengths over 500 feet. The following are some possible explanations:

1. The cable they were using was "slow" with the signals traveling at much less than 60% of the speed of light.
2. Reflections can occur at both ends of the cable. Perhaps the delayed signal had been reflected up and down the line several times causing a 2uS delay on shorter cables. A weak signal from the console may aggravate this problem. The problem was not caused by reflections, but by noise or signal distortion. The low resistance of the terminator helps to clean up the signal. **(See Below)**

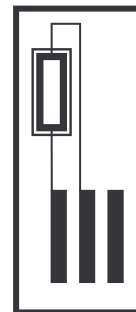
Cable Capacitance and Inductance: In looking at DMX512 signals on the oscilloscope I've noticed signal distortion on relatively short lines. Some distortion is caused by the fact that all cables have capacitance and inductance. This causes "ringing" (oscillation at the beginning or end of a digit) and rounding of the edges of the digit. Although any low value resistor across the end of the line will lower the effect of cable capacitance and inductance, using the proper termination resistance is differently recommended.

Noise: Low impedance cabling systems pick up less electrical noise than high impedance systems. By adding the proper termination, the susceptibility of the system to noise is reduced.

DMX Terminator: All DMX lines must be correctly terminated if reliable operation is to be obtained. Make sure that only the last item in the chain has a terminator connector on it. If the last item (**Farthest from data source**) does not have a terminator, then one is needed. To make one you will need the following parts :

- 1 Male 5 Pin XLR or Male 3 pin XLR connector.
- 1 120 ohm 0.5W resistor.

3 pin XLR connector, with 120 Ohm resistor soldered between pins #2 and # 3.



10.0 Photometrics:

Model: SaViFLOOD

Source specifications

Optics: clear polycarbonate
 Source: 360LEDs
 (120 Reds, 120 Greens, 120 Blues)

Illuminance distribution

60.1	70.4	83.4	104.0	117.7	124.3	108.6	90.3	74.9	63.7	0.5 m
76.2	97.5	155.1	248.6	314.0	308.4	240.2	153.3	129.1	77.6	
101.9	163.6	320.6	593.5	751.4	684.1	473.8	265.4	149.5	94.4	
136.4	269.2	629.9	1047.7	1242.0	1157.9	829.9	475.7	220.6	118.7	
156.1	370.1	801.9	1255.1	1619.6	1535.5	1114.0	630.8	281.3	141.1	0 m
147.7	329.9	746.7	1205.6	1296.0	1528.9	1129.9	680.4	298.1	142.1	
128.9	237.4	529.9	923.4	1203.7	1213.1	943.9	542.9	246.7	120.6	
103.7	154.2	291.6	530.5	752.3	761.7	567.3	306.5	144.9	92.5	
89.7	112.1	152.3	240.2	317.8	315.9	214.9	135.5	93.5	71.0	
72.9	86.9	100.9	116.8	129.9	121.5	101.9	81.3	67.3	57.0	
0.5 m				0 m						0.5 m

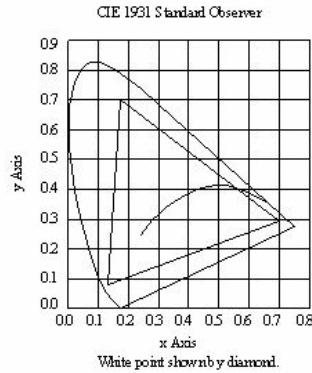
Units: Lux
 Measured on: White
 Direction: On axls
 Distance from surface: 1M
 Multiplier: 0.115 Red 0.378 Green 0.506 Blue

Illuminance

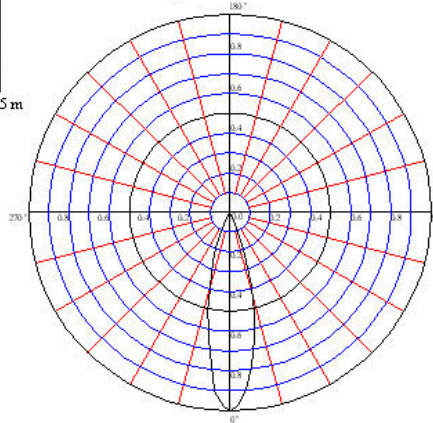
beam spacing	1	2	3	4	5
White	1724.3	456.1	208.4	118.1	74.6
Red	213.1	57.0	27.1	15.2	9.3
Green	700.9	185.9	85.9	47.9	30.4
Blue	937.4	242.9	110.3	62.4	40.4

Units: Lux
 Direction: on axls

GAMUT



Candle power distribution



Testing circumference
 installation position: horizontal
 testing surface: A-A surface

Electrical parameters
 current: 0.253A
 voltage: 220V
 power consumption: 35W

Testing result
 Max. luminous intensity: 1022.806 cd
 luminous max: 370.7 lm
 luminous efficiency: 11.029 lm/w

11.0 Trouble Shooting:

Model: SaViFLOOD

◆ **The fixture does not operate:**

- Make sure the fixture is wired properly. Check for the application of both the correct voltage as well as a DMX signal.

◆ **All LED's are lit, their is no response to any DMX command:**

- Check for DMX Signal between the Control Desk and the fixture. Once this is verified, check the fixture's DMX address. Cycle the power to the fixture to insure that it is recognizing the address that is currently on the digital display.

◆ **The fixture will not respond to any given command:**

- Check for DMX signal between the Control Desk and the fixture. Once this is verified, check the fixture's DMX address. Cycle the power to the fixture to insure that the address is recognized and is currently on the digital display.

◆ **One color responds to a DMX Signal, but the other colors will not respond to a given command from the Control Desk:**

- Check the fixture by removing the DMX cable from the fixture, and cycle the power "On/Off ". All LED's should now be lit. If this works as described, reattach the DMX signal cable and verify any failure. If the failure persists, check the patch in the DMX Control Desk for the proper channel assignments. Verify the digital display setting on the fixture and recycle power to the fixture. If all else fails, re-address the fixture to another address. Re-try the test. If the fixture is still not working correctly check the DMX cable for missing signals or broken conductors. Once the root trouble is isolated, re-address the fixture to the original setting and re-try the test.

◆ **All LED's are lit, the output appears to be dim:**

- Check the DMX command levels for all three channels controlling the fixture in question. Check the Grand Master fader of the DMX Control Desk. Bring these levels to full (255, or 100%) Verify that the power supplied to the fixture is not being supplied by a dimmable circuit, and that the full 120 or 240VAC is present, at the SaVi Flood fixture power supply.

◆ **SuperVision International**, maintains a full staff of highly qualified technicians who are available to assist you with any technical issue that may arise from the use of the SaVi Flood fixture.



SUPER | VISION
INTERNATIONAL