

VANTAGE LIGHTING

TEST REPORT

SCOPE OF WORK

LED Performance Testing

MODEL NUMBER

SIPR-44R4-Y48W-D1MV-30K

PROJECT NUMBER

G105471856

REPORT NUMBER

105471856CRT-003

ISSUE DATE

8/3/2023

REVISED DATE

None

TEST DATES

7/27/2023 to 7/31/2023

DOCUMENT CONTROL NUMBER

RTTDS-R-AMER-Test-3407

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REPORT NUMBER

105471856CRT-003

MODEL NUMBER(s)

SIPR-44R4-Y48W-D1MV-30K

REPORT RENDERED TO:

VANTAGE LIGHTING
181 NARRAGANSETT PARK DRIVE
EAST PROVIDENCE, RI 01916
USA

STATEMENT OF LIMITATION

NVLAP Lab Code 100402-0. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. government.

AUTHORIZATION

The testing performed was authorized by signed quote number Qu-01343314-0.

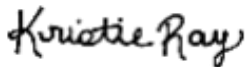
TEST STANDARDS

ANSI/IES LM-79-19: Optical and Electrical Measurements of Solid State Lighting Products

IES LM-79-08: Electrical and Photometric Measurements of Solid State Lighting

ANSI NEMA ANSLG C78.377: 2017: Specifications for the Chromaticity of Solid State Lighting (SSL) Products

In Charge of Testing:



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Reviewer:



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SAMPLE INFORMATION

REPORT NO. 105471856CRT-003

ITEMS RECEIVED

Item No.	Control No.	Model No.	Description	Type	Received Date	Sampling Date
1	CRT2307270924-001	SIPR-44R4-Y48W-D1MV-30K	Linear Recessed LED 4" wide x 48" long with diffuse lens	Production	7/27/2023	N/A

TESTED SAMPLE CONFIGURATIONS

Config No.	Tested Model No.	Item Nos. Utilized
1	SIPR-44R4-Y48W-D1MV-30K	1

SAMPLE PHOTOS



SUMMARY

REPORT NO. 105471856CRT-003

PRODUCT INFORMATION AND SUMMARY OF DATA

Test Configuration 1	
Product Model No.:	SIPR-44R4-Y48W-D1MV-30K
Product Description:	Linear Recessed LED 4" wide x 48" long with diffuse lens
LED Model No.:	Signify FO Strip PR 22in 2200lm 830 LV6
Driver Model No.:	Acuity OTi50/120-277/1A4 DIM-1 L G2

Criteria	Results	
	Goniophotometer	Integrating Sphere
Light Output (lumens)	5095.3	4969.3
Input Power (W) @ 120 (Vac)	49.76	49.75
Luminous Efficacy (lm/W)	102.4	99.9
Input Power Factor () @ 120 (Vac)	0.987	0.986

Criteria	Results
Input ATHD (%) @ 120 (Vac)	7.74
Correlated Color Temperature (K)	3025
Color Rendering Index - Ra ()	82.6
Color Rendering Index - R9 ()	5.5
Duv ()	-0.0001
Chromaticity Coordinate (x)	0.435
Chromaticity Coordinate (y)	0.403
Chromaticity Coordinate (u')	0.250
Chromaticity Coordinate (v')	0.521

TEST METHODS

SEASONING IN SAMPLE ORIENTATION - LED PRODUCTS

No seasoning was performed in accordance with ANSI/IES LM-79-19

DUT SAMPLING METHOD

For testing plans, program requirements, or shipments requiring sampling of DUTs or components, the selections for each test were random. All samples are marked with control numbers regardless of being tested.

INTEGRATING SPHERE TESTING

A spectroradiometer and integrating sphere were used to measure the spectral power distribution for photometric and colorimetric data of the DUT. Electrical measurements of the unit were measured using a power analyzer. Each DUT was operated at the rated input voltage of the system in its designated orientation. The ambient temperature and relative humidity was measured at 25°C ± 1.2°C and 10-65% respectively at a position inside of the sphere within 1.5m and at equal height of the DUT. Stabilization procedures to LM-79-19 were followed. The DUT was mounted in a 4π configuration.

TYPE C GONIOPHOTOMETER DISTRIBUTION TESTING

A Type C Mirror Goniophotometer system was used to measure the luminous intensity (candela) at each angle of distribution for the DUT. Electrical measurements of the unit were measured using a power analyzer. Each DUT was operated at the rated input voltage of the system in its designated orientation. The ambient temperature and relative humidity was measured at 25°C ± 1.2°C and 10-65% respectively at a position within 1.5m and at equal height of the DUT. Stabilization procedures to LM-79-19 were followed. The test distance was ≥ 5x the longest luminous dimension of the DUT.

ANSI/IES Technical Memorandums (TM) reported are not NVLAP accredited

TYPE C GONIOPHOTOMETER DISTRIBUTION TESTING

REPORT NO. 105471856CRT-003

Test Configuration	Tested Model No.	Pass/Fail/NA
1	SIPR-44R4-Y48W-D1MV-30K	NA

PHOTOMETRIC AND ELECTRICAL MEASUREMENTS

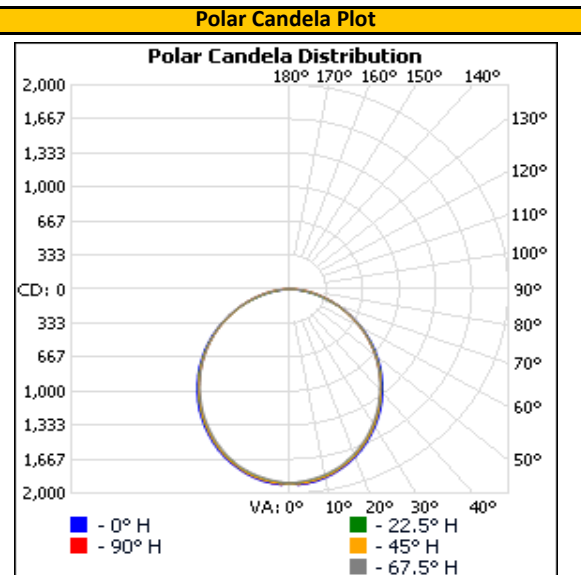
Base Orientation	Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor ()
Up	120.03	419.8	49.76	0.987

Light Output (lm)	Efficacy (lm/W)
5095.3	102.4

LUMINOUS INTENSITY SUMMARY (candela)

Vertical Angle (°)	Horizontal				
	0	22.5	45	67.5	90
0	1906	1906	1906	1906	1906
5	1909	1892	1898	1880	1906
10	1877	1859	1865	1845	1871
15	1821	1807	1807	1793	1816
20	1751	1733	1735	1716	1741
25	1662	1643	1644	1626	1646
30	1558	1539	1538	1521	1540
35	1445	1423	1421	1407	1421
40	1319	1301	1296	1284	1297
45	1188	1171	1165	1156	1164
50	1049	1035	1030	1024	1029
55	910	897	891	889	889
60	764	753	750	750	748
65	615	607	606	609	606
70	466	462	464	470	470
75	321	320	332	341	343
80	184	192	210	222	225
85	68	84	104	115	119
90	0	0	0	0	0
95	0	0	0	0	0
100	0	0	0	0	0
105	0	0	0	0	0
110	0	0	0	0	0
115	0	0	0	0	0
120	0	0	0	0	0
125	0	0	0	0	0
130	0	0	0	0	0
135	0	0	0	0	0
140	0	0	0	0	0
145	0	0	0	0	0
150	0	0	0	0	0
155	0	0	0	0	0
160	0	0	0	0	0
165	0	0	0	0	0
170	0	0	0	0	0
175	0	0	0	0	0
180	0	0	0	0	0

Full luminous intensity matrix found in .IES file



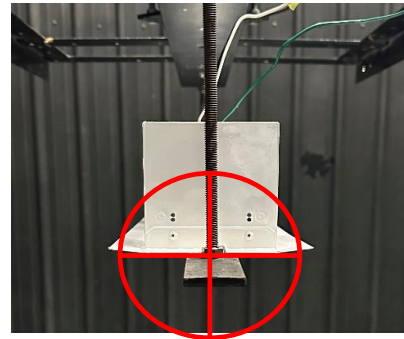
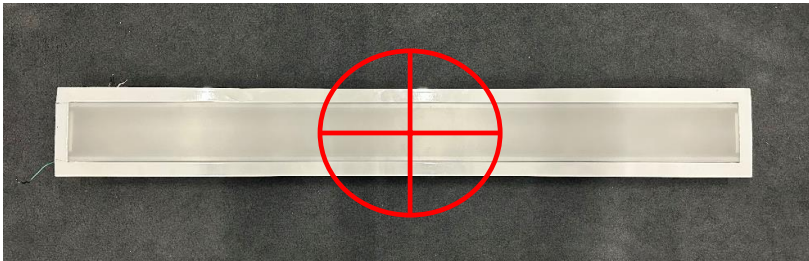
REPORT NO. 105471856CRT-003

ORIENTATION AND ALIGNMENT OF DUT

Luminous Opening		
Length (ft)	Width (ft)	Height (ft)
4.00	0.33	0.00
0°-180° H	90°-270° H	0°-180° V

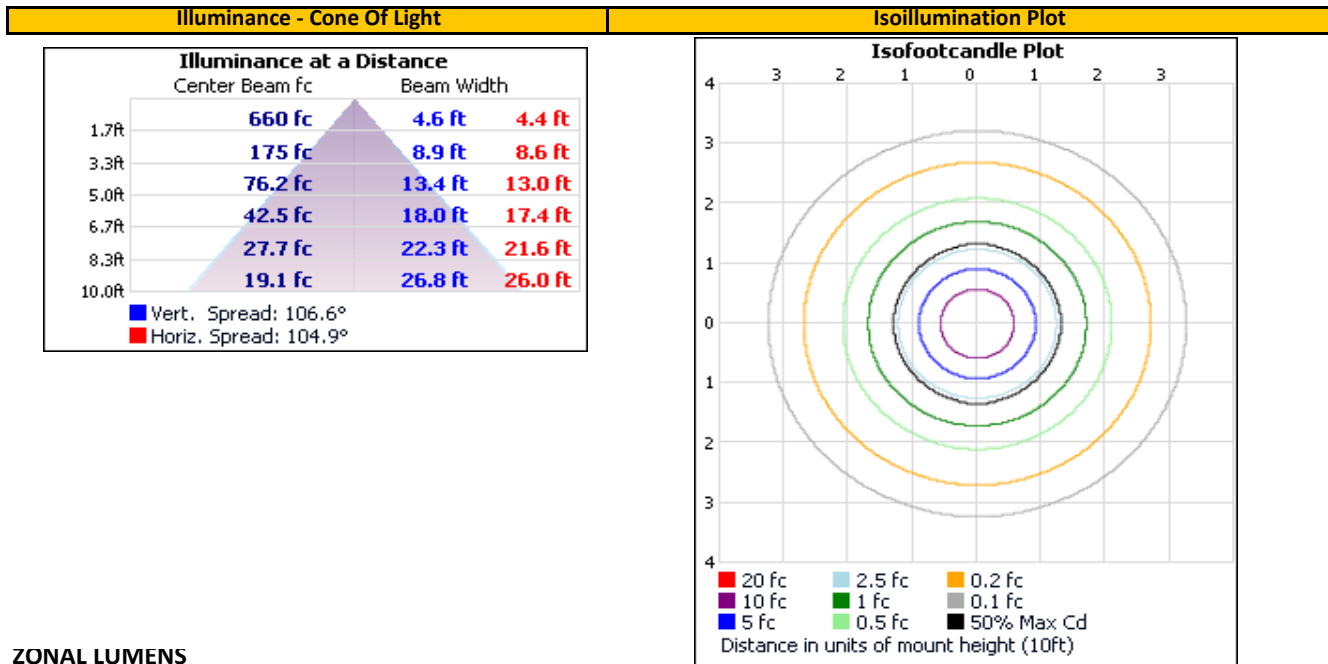
Test Distance (ft)
29.2

PHOTOMETRIC CENTER OF DUT



REPORT NO. 105471856CRT-003

ILLUMINANCE SUMMARY



ZONAL LUMENS

Zonal Lumen Summary					
Zone (°)	Lumens	Luminaire	Zone (°)	Lumens	Total
0-30	1,444.0	28.3%	0-10	179.7	3.5%
0-40	2,332.4	45.8%	10-20	508.9	10.0%
0-60	4,031.5	79.1%	20-30	755.5	14.8%
60-90	1,063.8	20.9%	30-40	888.4	17.4%
70-100	461.9	9.1%	40-50	899.9	17.7%
90-120	0.0	0.0%	50-60	799.1	15.7%
0-90	5,095.3	100.0%	60-70	602.0	11.8%
90-180	0.0	0.0%	70-80	351.4	6.9%
0-180	5,095.3	100.0%	80-90	110.5	2.2%
			90-100	0.0	0.0%
			100-110	0.0	0.0%
			110-120	0.0	0.0%
			120-130	0.0	0.0%
			130-140	0.0	0.0%
			140-150	0.0	0.0%
			150-160	0.0	0.0%
			160-170	0.0	0.0%
			170-180	0.0	0.0%

UNIFIED GLARE RATING (UGR) SUMMARY

Reflectances					
Ceiling Cavity	70	70	50	50	30
Walls	50	30	50	30	30
Floor Cavity	20	20	20	20	20

Room Size	
X=2H	Y=2H
	3H
	4H
	6H
	8H
	12H

UGR Viewed Crosswise				
20.9	22.6	21.3	22.9	23.2
22.7	24.2	23.1	24.5	24.9
23.4	24.8	23.8	25.1	25.5
23.8	25.1	24.2	25.5	25.9
24.0	25.2	24.4	25.6	26.0
24.0	25.2	24.4	25.6	26.0

4H	2H
	3H
	4H
	6H
	8H
	12H

21.6	22.9	22.0	23.3	23.7
23.5	24.7	24.0	25.1	25.5
24.3	25.4	24.8	25.8	26.2
24.9	25.8	25.4	26.3	26.7
25.1	25.9	25.5	26.4	26.9
25.2	26.0	25.7	26.4	26.9

8H	4H
	6H
	8H
	12H

24.6	25.5	25.1	26.0	26.4
25.4	26.1	25.8	26.6	27.0
25.6	26.3	26.1	26.8	27.3
25.8	26.4	26.3	26.9	27.4

12H	4H
	6H
	8H

24.7	25.5	25.2	25.9	26.4
25.5	26.1	26.0	26.6	27.1
25.7	26.3	26.2	26.8	27.4

Room Size	
X=2H	Y=2H
	3H
	4H
	6H
	8H
	12H

UGR Viewed Endwise				
20.9	22.5	21.2	22.8	23.1
22.7	24.2	23.1	24.5	24.9
23.4	24.8	23.8	25.1	25.5
24.0	25.3	24.4	25.7	26.0
24.2	25.5	24.7	25.9	26.3
24.4	25.6	24.8	26.0	26.4

4H	2H
	3H
	4H
	6H
	8H
	12H

21.5	22.9	21.9	23.2	23.6
23.5	24.7	24.0	25.1	25.5
24.4	25.5	24.8	25.9	26.3
25.1	26.1	25.6	26.5	27.0
25.4	26.3	25.9	26.7	27.2
25.7	26.5	26.2	26.9	27.4

8H	4H
	6H
	8H
	12H

24.7	25.6	25.2	26.0	26.5
25.6	26.3	26.1	26.8	27.3
26.0	26.6	26.5	27.1	27.6
26.3	26.9	26.8	27.4	28.0

12H	4H
	6H
	8H

24.7	25.5	25.2	26.0	26.5
25.7	26.3	26.2	26.8	27.3
26.1	26.7	26.6	27.2	27.7

Maximum UGR
28.0

INTEGRATING SPHERE TESTING

REPORT NO. 105471856CRT-003

Test Configuration	Tested Model No.	Pass/Fail/NA
1	SIPR-44R4-Y48W-D1MV-30K	NA

PHOTOMETRIC, RADIOMETRIC, COLORIMETRIC, AND ELECTRICAL MEASUREMENTS

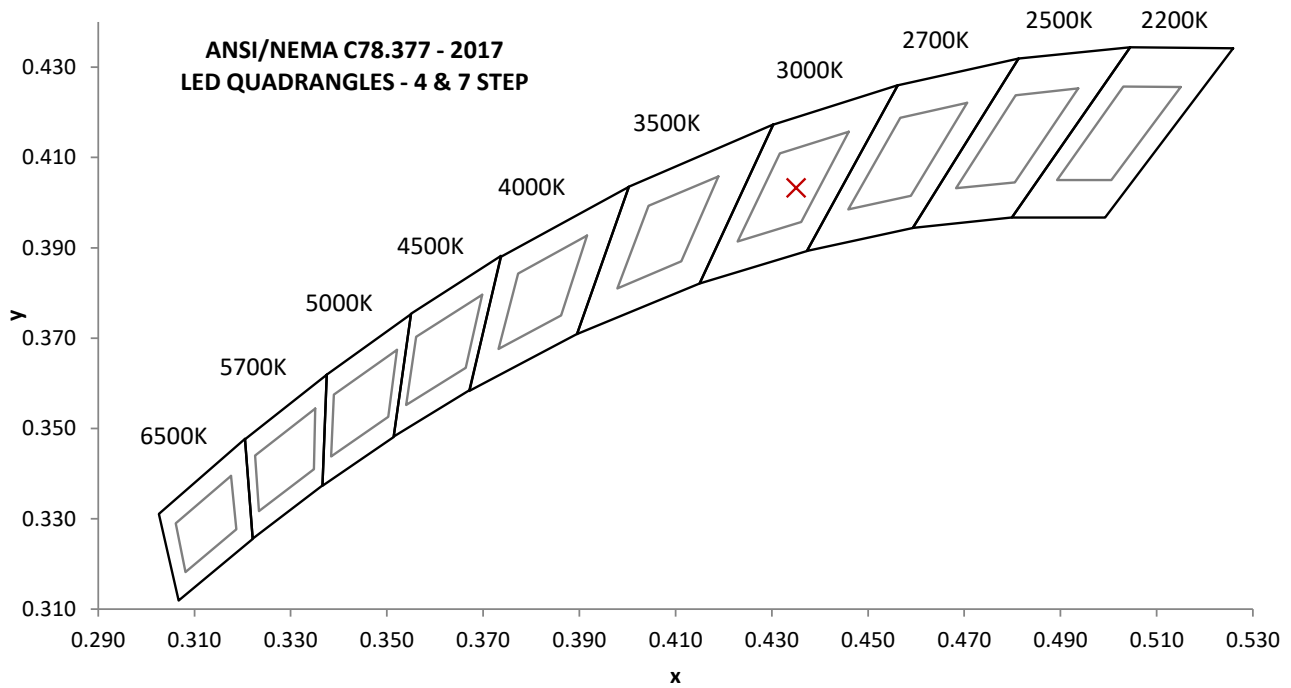
Base Orientation
Up

Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor ()	Input ATHD (%)
120.03	420.4	49.75	0.986	7.74

Measured at 120.03(Vac)

Light Output (lm)	Efficacy (lm/W)	CCT (K)	CRI - Ra ()	CRI - R9 ()
4969.3	99.9	3025	82.6	5.5

Duv ()	1931 Chrom (x)	1931 Chrom (y)	1976 Chrom (u')	1976 Chrom (v')
-0.0001	0.435	0.403	0.250	0.521

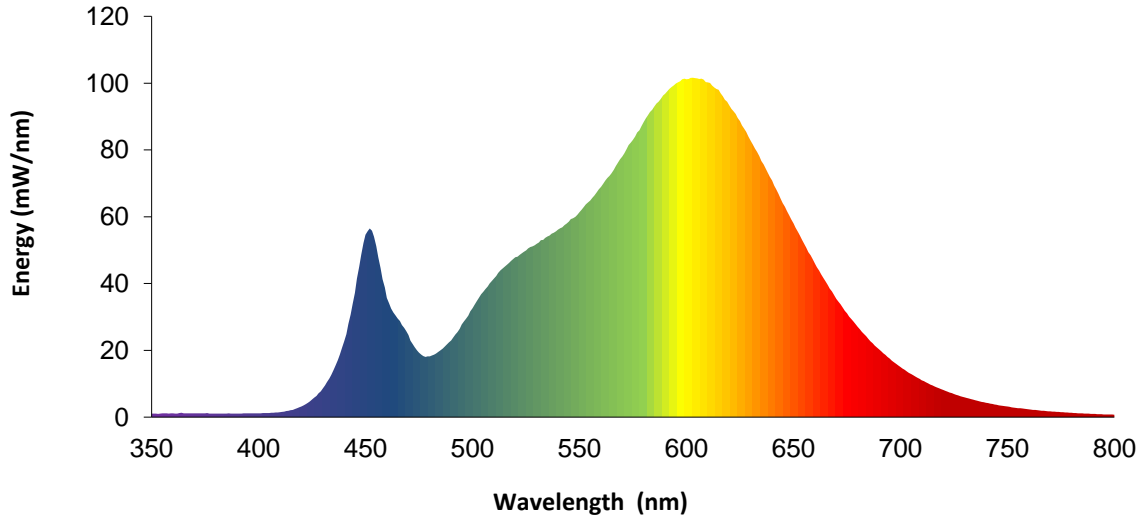


REPORT NO. 105471856CRT-003

SPECTRAL POWER DISTRIBUTION

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
350	1.1	460	35.7	570	78.0	680	27.1
355	1.1	465	29.5	575	83.0	685	23.4
360	1.1	470	24.6	580	88.4	690	20.3
365	1.2	475	19.3	585	92.9	695	17.5
370	1.2	480	18.2	590	96.8	700	15.0
375	1.2	485	20.0	595	99.8	705	12.9
380	1.1	490	22.9	600	101.2	710	11.0
385	1.0	495	27.7	605	101.4	715	9.5
390	1.1	500	32.6	610	100.2	720	8.1
395	1.1	505	37.5	615	98.0	725	6.9
400	1.1	510	41.5	620	93.4	730	5.9
405	1.3	515	45.1	625	88.6	735	5.0
410	1.5	520	47.9	630	82.8	740	4.3
415	2.1	525	49.9	635	76.7	745	3.7
420	3.2	530	51.9	640	70.8	750	3.2
425	5.3	535	54.1	645	64.1	755	2.7
430	8.6	540	56.1	650	58.0	760	2.3
435	14.1	545	58.5	655	51.9	765	2.0
440	22.6	550	61.4	660	46.0	770	1.7
445	37.2	555	64.8	665	40.7	775	1.5
450	54.6	560	68.9	670	35.5	780	1.3
455	51.2	565	73.1	675	31.1	---	---

Spectral radiant flux was measured by 1nm increments. 1nm data is on file.



Portrayed color in graphic is estimated by wavelength (nm) and may not be exact - it is a visual representation only

EQUIPMENT LIST

REPORT NO. 105471856CRT-003

#	Equipment	Model No	Control No.	Last Cal	Cal Due
1	Elgar AC Power Supply	CW1251	---	VBU	VBU
2	Sorenson DC Power Supply	XFR 150-8	---	VBU	VBU
3	Traceable Thermometer	4800	L204	3/7/2023	3/7/2024
4	Yokogawa Power Analyzer	WT1600	E473	8/24/2022	8/24/2023
5	Fluke Thermometer	53 II	N1324	6/28/2023	6/28/2024
6	Current Monitor	411	A197	8/26/2021	8/26/2024
7	3M Integrating Sphere Spectrometer System	CDS 2600	L231	6/29/2023	9/29/2023
8	Fisher Scientific Stopwatch	14-649-9	N1132	8/22/2022	8/22/2023
9	LSI Type C Goniophotometer System	6440	---	5/3/2023	8/3/2023
10	Elgar AC Power Supply	CW1251	---	VBU	VBU
11	Yokogawa Power Analyzer	WT210	E464	6/21/2023	6/21/2024
12	Omega Thermometer	DPi8-C24	M263	3/9/2023	3/9/2024
13	Bosch Distance Laser	Pro GLM 20	L210	4/12/2023	4/12/2024
14	Tape Measure	Crescent	---	9/21/2021	9/21/2024
15	Traceable Hygrothermometer	4800	L206	3/7/2023	3/7/2024

The AC power supplies used for testing have a crest factor capable of 0-3.5

REVISION HISTORY

#	Revision Date	Updated By	Reviewed By	Description of Change
---	None	---	---	---
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