



Report No.: 80239581-47
Project No.: 80239581
Client: Vista Professional Outdoor Lighting

PHOTOMETRIC TESTING & EVALUATION TO IES LM-79-19

Sample Tested

1052YM-X-AS-RGBW-FL-MV-DMX-With Filter-BLUE Output

Prepared for:

Vista Professional Outdoor Lighting

1625 Surveyor Ave
Simi Valley, CA 93063

Technical Report Number

80239581-47

March 20, 2025

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Program Description

Photometric and electrical testing of a 1052YM-X-AS-RGBW-FL-MV-DMX-With Filter-BLUE Output Type C LED Luminaire to IES LM-79-19.

Executive Summary

Sample Tested = 1052YM-X-AS-RGBW-FL-MV-DMX-With Filter-BLUE Output

Sample Number = 44003367

Driver = ELDOLED PW50U-M4Z0X1

LED Module = LUMILEDS LUXEON 3528 RGB

Test Condition = The sample features Red, Green, Blue, and White light settings. It was tested with only the Blue light turned on. The color settings were adjusted using an ENTTEC DMX USB PRO DMX512 controller. Candela values are scaled to calculate the same output of the sphere measurement.

Luminous Efficacy (Lumens/Watt)	Luminous Flux (Lumens)	Input Power (Watts)	Power Factor	ATHD (%)
12.09	242.18	20.03	0.9682	14.57

CCT(K)	CRI	R9	Rcs,h1	Rf / Rg
N.A.	N.A.	N.A.	N.A.	N.A.

* The above results are recorded / derived from measurements made using an Integrating Sphere

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Test Sample Pictures

The following sample was submitted for evaluation:



Vista Professional Outdoor Lighting : 1052YM-X-AS-RGBW-FL-MV-DMX-With Filter-BLUE Output

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Test Result

The following results were measured after stabilization of the sample in the Integrating Sphere (unless otherwise stated). Stability shall be achieved when the variation (Maximum to minimum) of at least three readings of the light output and electrical power consumption, taken at a maximum of 10 minute intervals over a period of 20 minutes and divided by the last of these measurements chronologically, is less than 0.5%.

Key Photometric Results	Sample Reference
	1052YM-X-AS-RGBW-FL-MV-DMX-With Filter-BLUE Output
	Integrating Sphere
Luminous Efficacy (Lumens/Watt)	12.09
Total Luminous Flux (Lumens)	242.18
Total Radiant Flux (Watts)	3.70
Correlated Color Temperature (CCT)	N.A.
Color Rendering Index (CRI)(Ra)	N.A.
R9 Value	N.A.
IES R _f / IES R _g	N.A.
Local Chroma Shift R _{cs,h1}	N.A.
Chromaticity (Chroma x/Chroma y)	0.1351 / 0.0562
Chromaticity (Chroma u/Chroma v)	0.1587 / 0.099
Chromaticity (Chroma u'/Chroma v')	0.1587 / 0.1486
Duv Value	0.1798
Stabilization Time (Light and Power)	30 minutes
Total Run Time (Integrating Sphere)	35 minutes
Scotopic/Photopic ratio $\Phi(v')/\Phi(v)$	16.53

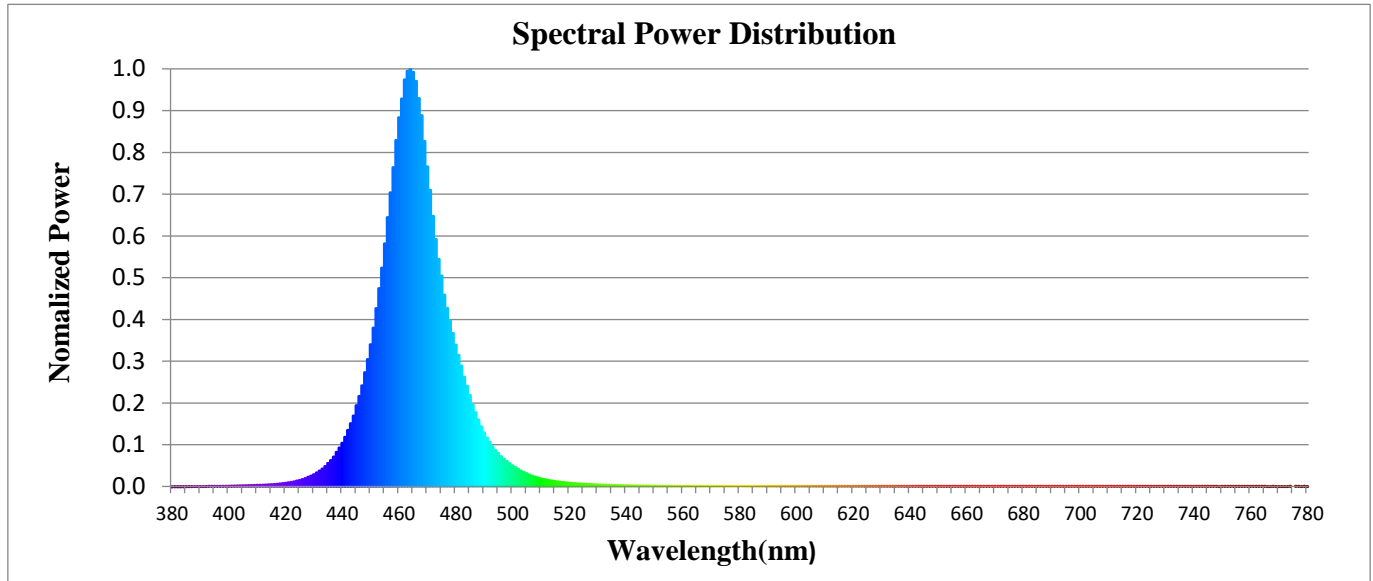
Electrical Input Results:	Sample Reference
	1052YM-X-AS-RGBW-FL-MV-DMX-With Filter-BLUE Output
Input Power (Watts)	20.03
Input Voltage (Volts AC)	120.02
Input Current (Amps)	0.17
Input Frequency (Hertz)	60.0
Power Factor	0.9682
Total Harmonic Distortion (THD V,A)%	0.11, 14.57

Additional Information	Sample Reference
	1052YM-X-AS-RGBW-FL-MV-DMX-With Filter-BLUE Output
Ambient Temperature	25.2°C
Integrating Sphere Detector	CDS 2600 Spectroradiometer
Absorption Correction Used?	Yes
Date Tested	3/18/2025

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Spectral Flux

The following graph shows the spectral response curve of the radiant flux for the sample:

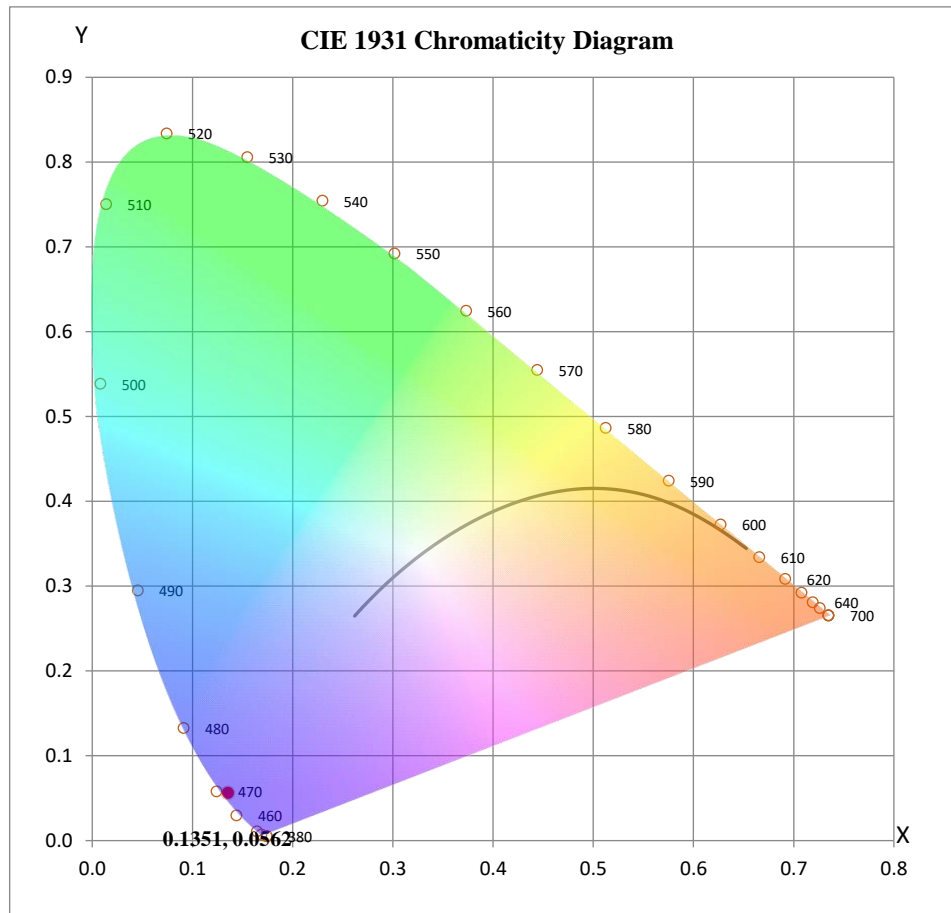


Spectral response of the Radiant Flux
 (380nm to 780nm - calibrated range of the Spectroradiometer)

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Chromaticity Diagram

The following image shows the chromaticity diagram for the sample:



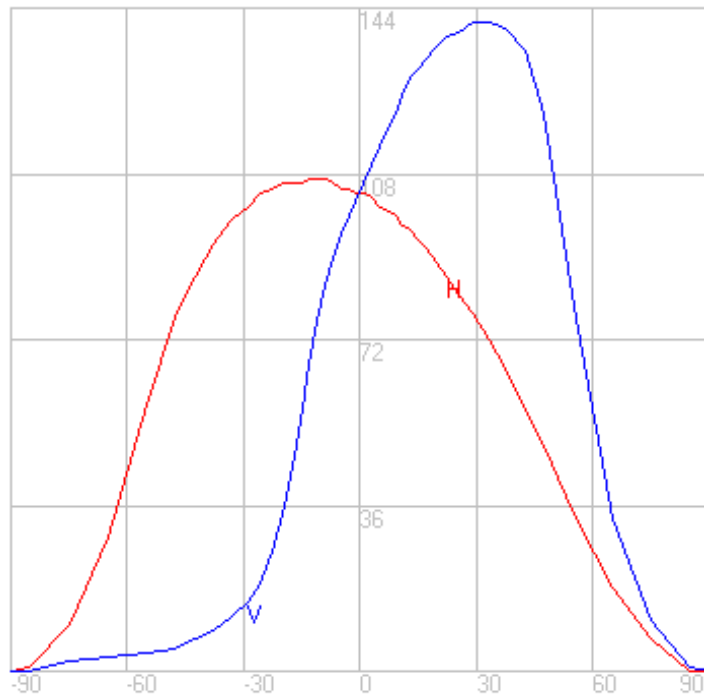
$x = 0.1351$ $y = 0.0562$

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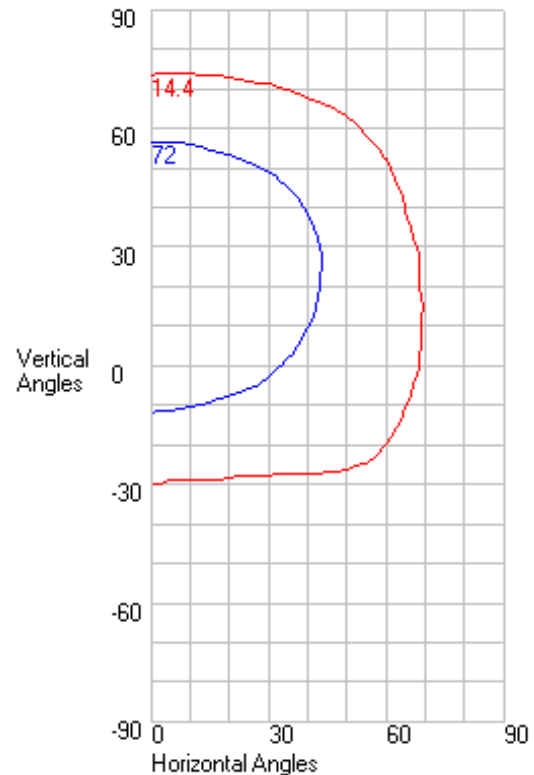
Photometric Test Results

Characteristics	
NEMA Type	7 H x 6 V
Maximum Candela	144.00
Maximum Candela Angle	-15 H 29 V
Horizontal Beam Angle (50%)	93.60
Vertical Beam Angle (50%)	68.00
Horizontal Field Angle (10%)	138.00
Vertical Field Angle (10%)	103.30
Beam Lumens	166.00
Field Lumens	229

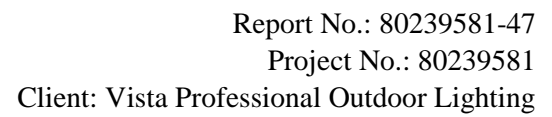
Axial Candela Display



Isocandela Curves



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Vertical Angle

34 Bunsen
Irvine, California 92618
www.csagroup.com

Fax: 949-733-4320

Version 1.0

	0	3	5	8	10	13	15	18	20	23	25	28	30	33	35	38	40	43	45	48	50	53	55	58	60	63	65	68	70	73	75	78	80	83	85	88	90
185	104	100	94	88	79	69	56	44	34	26	20	16	14	12	10	9	8	7	6	5	4	4	4	3	3	3	3	3	2	2	2	1	1	0	0	0	0
190	104	99	94	88	79	69	57	45	34	26	21	16	14	12	10	9	8	7	6	5	4	4	4	3	3	3	3	3	2	2	2	1	1	0	0	0	0
195	104	100	94	88	80	69	58	46	35	26	21	17	14	12	10	9	8	7	6	5	4	4	4	4	3	3	3	3	2	2	2	1	1	0	0	0	0
200	104	100	94	88	80	70	59	47	36	28	22	17	14	12	11	9	8	7	6	5	5	4	4	4	3	3	3	3	2	2	2	1	1	0	0	0	0
205	104	100	94	89	81	71	60	49	38	29	23	18	15	13	11	10	8	7	6	6	5	4	4	4	4	3	3	3	3	2	2	1	1	0	0	0	0
210	104	100	95	89	82	73	63	51	41	32	25	20	16	14	12	10	9	8	7	6	5	5	4	4	4	4	3	3	3	2	2	1	1	0	0	0	0
215	104	100	95	90	83	75	65	55	44	35	28	22	18	15	13	11	9	8	7	6	6	5	5	4	4	4	4	3	3	2	2	1	1	0	0	0	0
220	104	100	95	90	84	77	68	58	48	39	31	25	20	16	14	12	10	9	8	7	6	6	5	5	4	4	4	4	3	3	2	1	1	0	0	0	0
225	104	100	96	91	85	79	71	62	52	43	35	28	23	19	16	13	12	10	9	8	7	6	6	5	5	5	4	4	3	3	2	2	1	0	0	0	0
230	104	100	96	92	87	81	74	66	57	48	40	33	27	22	19	16	13	12	10	9	8	7	7	6	6	5	5	4	4	3	2	2	1	1	0	0	0
235	104	101	97	93	88	83	77	70	62	54	46	39	32	27	22	19	16	14	12	11	10	9	8	7	6	6	5	5	4	3	3	2	1	1	0	0	0
240	104	101	97	94	89	85	80	74	67	60	53	46	39	33	28	24	20	17	15	13	12	10	9	8	7	7	6	5	5	4	3	2	1	1	0	0	0
245	104	101	98	94	91	87	82	77	71	65	59	52	46	40	35	30	26	22	19	17	14	13	11	10	9	8	7	6	5	4	3	2	2	1	0	0	0
250	104	101	98	95	92	89	85	80	76	71	65	59	54	48	42	37	32	28	24	21	19	16	14	12	11	10	8	7	6	5	4	3	2	1	0	0	0
255	104	102	99	97	94	91	87	84	80	75	71	66	61	56	50	45	40	36	31	27	24	21	18	16	14	12	10	9	7	6	4	3	2	1	0	0	0
260	104	102	100	98	95	92	89	86	83	79	76	72	67	63	58	53	48	44	39	35	30	27	23	20	17	15	12	10	8	7	5	4	2	1	0	0	0
265	104	102	101	99	97	94	91	89	86	83	79	76	72	68	64	60	56	51	46	42	37	33	29	25	21	18	15	12	10	8	6	4	3	1	0	0	0
270	104	103	101	100	98	96	94	91	89	86	83	80	77	73	69	66	62	57	53	49	44	39	34	30	25	21	18	14	11	9	7	5	3	2	0	0	0
275	104	103	102	101	99	98	96	94	91	89	86	84	81	78	74	71	67	63	59	55	50	45	40	35	29	24	20	16	13	10	7	5	3	2	0	0	0
280	104	104	103	102	101	100	99	97	95	93	91	88	86	83	79	76	73	69	65	60	56	50	45	39	33	28	23	18	14	11	8	6	3	2	0	0	0
285	104	104	104	103	103	102	101	100	98	97	95	93	90	88	85	81	78	74	70	66	61	56	50	43	37	30	25	20	15	12	9	6	4	2	1	0	0
290	104	104	104	104	104	104	103	102	101	100	99	97	95	92	90	86	83	79	75	71	66	60	54	47	40	33	27	21	17	13	9	6	4	2	1	0	0
295	104	104	105	105	106	106	106	105	105	104	103	101	99	97	94	91	88	84	81	76	71	65	58	51	43	35	29	23	18	13	10	7	4	2	1	0	0
300	104	104	105	107	107	108	108	108	108	108	107	106	104	102	99	97	93	90	86	81	76	70	62	54	45	37	30	24	18	14	10	7	4	2	1	0	0
305	104	105	106	108	109	110	111	111	112	111	111	110	108	106	104	101	98	94	91	86	81	74	65	56	47	38	31	24	19	14	11	7	4	2	1	0	0
310	104	105	107	109	111	112	113	114	115	115	114	113	112	110	108	106	103	99	96	91	85	77	68	58	49	40	32	25	19	15	11	7	5	2	1	0	0
315	104	105	108	110	112	114	116	117	118	118	118	117	116	114	112	110	107	104	101	96	89	81	71	60	50	40	32	26	20	15	11	8	5	3	1	0	0
320	104	106	109	111	114	116	118	120	121	121	121	121	120	118	117	114	112	109	105	100	93	83	73	61	51	41	33	26	20	15	11	8	5	3	1	0	0
325	104	106	109	112	115	118	120	122	123	124	124	124	123	122	120	118	116	113	109	104	96	86	74	62	51	41	33	26	20	15	11	8	5	3	1	0	0
330	104	107	110	114	117	120	122	125	126	127	127	127	126	125	124	122	120	117	113	107	98	88	75	63	52	42	33	26	20	15	11	8	5	3	1	0	0
335	104	107	110	114	118	121	124	126	128	129	129	129	129	128	127	126	124	121	116	110	101	90	76	64	52	42	33	26	20	16	11	8	5	3	1	0	0
340	104	107	111	115	119	122	126	128	130	131	132	132	132	131	130	129	127	124	120	113	103	91	77	64	52	42	33	26	20	16	12	8	5	3	1	0	0
345	104	107	112	116	120	124	127	130	132	133	134	134	134	134	133	132	130	127	123	115	105	92	78	65	53	42	34	26	21	16	12	8	5	3	1	0	0
350	104	107	112	116	121	125	128	131	133	135	136	136	136	136	136	135	133	130	125	117	107	94	79	65	53	42	33	27	21	16	12	8	5	3	1	0	0
355	104	108	113	117	122	126	130	132	135	136	137	138	138	138	138	137	136	133	128	120	108	95	80	66	53	43	34	27	21	16	12	8	5	3	1	0	0
360	104	109	114	119	123	128	131	134	137	138	139	140	141	141	141	140	138	135	129	121	108	94	79	65	52	42	33	26	20	15	11	8	5	2	1	0	0

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Photometric Testing Information

The sample was evaluated for photometric and electrical characteristics using an integrating sphere and a goniophotometer, each located in purpose-built, temperature and humidity-controlled, draft free environments

The integrating sphere is by Labsphere which exhibits a “4 π geometry” configuration according to IES LM-79-19 and is applicable for all types of LED products (directional and non-directional light projections). Its spectroradiometer is an array-type detector manufactured and calibrated by Labsphere.

The integrating sphere uses self-absorption correction to eliminate errors due to mismatches between the standard reference lamp and the test samples being measured. The auxiliary lamp used to perform this task is a halogen type lamp powered by a calibrated Lamp Power Supply manufactured and calibrated by Labsphere. Ambient temperature (for photometric analysis) is measured using a “J-Type” thermocouple located inside the integrating sphere at the same height as the sample under test and not more than 1 meter in horizontal distance away from the sample. The thermocouple is located behind the baffle of the photo detector in order to eliminate any direct optical radiation from the sample under test.

Luminaire Stabilization.

The sample was placed inside the integrating sphere and powered by a regulated and conditioned Voltage alternating current supply. The correlated color temperature, color rendering index, chromaticity coordinates and electrical power measurements contained in this report are the numeric averages of the three readings upon which stabilization is verified. The stabilization times shown on the results pages of this report denote the time of the 1st measurement (of the 3 consecutive readings) since this is the minimum time that the sample is assumed to have taken to reach stabilization.

The integrating sphere is calibrated using a quartzline halogen lamp with the following specifications:
(Calibrated by Labsphere – NIST traceable).

Lamp ID	J178	L177	A178
Manufacture	Donar	Donar	Donar
Model Number	SCL-1400-J178	SCL-1400-L177	SCL-1400-A178
Part ID	SCL-1400	SCL-1400	SCL-1400
Current (A)	2.679	2.679	2.679
Wattage (W)	75.0	75.0	75.0
Voltage (VDC)	28.0	28.0	28.0
Luminous Flux	1306	1417	1343
Calibration Date	6/21/2021	2/16/2021	6/21/2021

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Photometric Testing Information (Continued)

The goniophotometer Mayer Engineering Type C is calibrated using a frosted tungsten filament FDS/DZE lamp with the following specifications:

Manufacturer: GE
Part Number: DZE
Bulb Number: 106-A
Voltage: 16.93 Volts DC reference
Calibration Current: 4.863 Amperes
Luminous Intensity: 168.8 Candelas
Calibration Date: 4/25/12 (NIST traceable)

Manufacturer: GE
Part Number: DZE
Bulb Number: 106-B
Voltage: 16.45 Volts DC reference
Calibration Current: 4.79 Amperes
Luminous Intensity: 145.3 Candelas
Calibration Date: 4/25/12 (NIST traceable)

Manufacturer: GE
Part Number: DZE
Bulb Number: 106-C
Voltage: 16.57 Volts DC reference
Calibration Current: 4.829 Amperes
Luminous Intensity: 157.0 Candelas
Calibration Date: 4/25/12 (NIST traceable)

A Yokogawa WT210 Power Analyzer was used to measure all electrical characteristics of the sample.

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Equipment List: Goniophotometer Type C

Description	Manufacturer and Model Number	CSA Instrument Reference Number	Calibration Due Date
Optometer	Gigahertz Optik P9801	OPT400	N/A
Programmable DC Power Supply	Chroma Instruments 62012P-80-60	DCP300	N/A
Regulated Power Supply	Chroma Instruments 61602	AC301	N/A
Power Analyzer	Yokogawa WT210	Z00019641	10/28/2025

Equipment List: Sphere D Equipment

Description	Manufacturer and Model Number	CSA Instrument Reference Number	Calibration Due Date
Integrating Sphere 118"	Labsphere LMS-3M	Z00029788	N/A
Spectroradiometer	Labsphere CDS2600	N/A	N/A
Auxiliary Lamp PSU	Labsphere LPS525	N/A	N/A
Power Analyzer	Yokogawa WT310E	Z00025875	5/14/2025
Programmable AC Power Supply	Chroma Instruments 61605	Z00023974	N/A

* All equipment is calibrated to ISO / IEC 17025-2017 guidelines.

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