

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

Lumentra

3730 Laird Road, Unit B

Mississauga L5L 5Z7

Canada

Dr. Venkat Venkataramanan

Phone: 416 978 7082 Fax: 4169783936

Email: venkat@lumentra.com

<http://www.lumentra.com>

ENERGY EFFICIENT LIGHTING PRODUCTS

NVLAP LAB CODE 500084-0

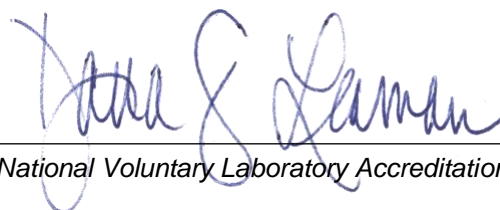
Lamps

Color Measurements

<u>Code</u>	<u>Designation</u>	<u>Description</u>
22/C02a	IES LM-58:2013	Spectroradiometric Measurements
22/C02b	ANSI/IES LM-58:2020	Spectroradiometric Measurement Methods for Light Sources
22/C03	CIE Pub. 13.3:1995	Method of Measuring and Specifying Color Rendering of Light Sources
22/C05	CIE Pub. 15:2004	Colorimetry
22/C05a	CIE Pub. 15:2018	Colorimetry, 4th Edition
22/C06	ANSI C78.376:2001	Electric Lamps - Specification for the Chromaticity of Fluorescent Lamps
22/C06a	ANSI C78.376:2014	Electric Lamps - Specification for the Chromaticity of Fluorescent Lamps
22/C06b	ANSI C78.376:2014 (R2021)	Electric Lamps - Specification for the Chromaticity of Fluorescent Lamps

Electrical Measurements

<u>Code</u>	<u>Designation</u>	<u>Description</u>
-------------	--------------------	--------------------



For the National Voluntary Laboratory Accreditation Program

ENERGY EFFICIENT LIGHTING PRODUCTS

NVLAP LAB CODE 500084-0

22/E11a	IES LM-9:2009	Fluorescent Lamps - Electrical Measurements <i>Testing also conducted at 160 Frobisher Dr. Unit 5, Waterloo, ON N2V 2B1.</i>
22/E11b	ANSI/IES LM-9:2020	Electrical and Photometric Measurement of Fluorescent Lamps - Electrical Methods
22/E13c	ANSI/IES LM-45:2020	Electrical and Photometric Measurement of General Service Incandescent Filament Lamps - Electrical Measurements
22/E18a	ANSI C78.375:2014	Fluorescent Lamps - Electrical Measurements <i>Testing also conducted at 160 Frobisher Dr. Unit 5, Waterloo, ON N2V 2B1.</i>
22/E26	ANSI C82.2:2002	Ballast for Fluorescent Lamps - Methods of Measurement <i>Testing also conducted at 160 Frobisher Dr. Unit 5, Waterloo, ON N2V 2B1.</i>
22/E34	IEC 62301:2011	Household Electrical Appliances - Measurement of Standby Power <i>Testing also conducted at 160 Frobisher Dr. Unit 5, Waterloo, ON N2V 2B1.</i>

Life Tests

<u>Code</u>	<u>Designation</u>	<u>Description</u>
22/L10a	IES LM-65:2010	Single-Ended Compact Fluorescent Lamps - LifeTest Performance
22/L10b	IES LM-65:2014	Single-Ended Compact Fluorescent Lamps - LifeTest Performance

Photometric Measurements

<u>Code</u>	<u>Designation</u>	<u>Description</u>
22/P07c	IES LM-9:2009	Fluorescent Lamps - Total Flux Measurements <i>Testing also conducted at 160 Frobisher Dr. Unit 5, Waterloo, ON N2V 2B1.</i>
22/P07d	IES LM-9:2009	Fluorescent Lamps - Intensity Measurements <i>Testing also conducted at 160 Frobisher Dr. Unit 5, Waterloo, ON N2V 2B1.</i>

Luminaires

<u>Code</u>	<u>Designation</u>	<u>Description</u>
22/F06	IES LM-10:1996	Photometric Testing of Outdoor Fluorescent Luminaires <i>Testing also conducted at 160 Frobisher Dr. Unit 5, Waterloo, ON N2V 2B1.</i>

ENERGY EFFICIENT LIGHTING PRODUCTS

NVLAP LAB CODE 500084-0

22/F07	IES LM-31:1995	Photometric Testing of Roadway Luminaires <i>Testing also conducted at 160 Frobisher Dr. Unit 5, Waterloo, ON N2V 2B1.</i>
22/F08	IES LM-35:2002	Photometric Testing of Floodlights Using Incandescent Filament or Discharge Lamps <i>Testing also conducted at 160 Frobisher Dr. Unit 5, Waterloo, ON N2V 2B1.</i>
22/F08a	ANSI/IES LM-35:2020	Photometric Testing of Floodlights Using High Intensity Discharge or Incandescent Lamps
22/F09a	IES LM-41:2014	Photometric Testing of Indoor Fluorescent Luminaires <i>Testing also conducted at 160 Frobisher Dr. Unit 5, Waterloo, ON N2V 2B1.</i>
22/F09b	ANSI/IES LM-41:2020	Photometric Testing of Indoor Fluorescent Luminaires <i>Testing also conducted at 160 Frobisher Dr. Unit 5, Waterloo, ON N2V 2B1.</i>
22/F10	IES LM-46:2004	Photometric Testing of Indoor Luminaires Using High Intensity Discharge or Incandescent Filament Lamps <i>Testing also conducted at 160 Frobisher Dr. Unit 5, Waterloo, ON N2V 2B1.</i>

Solid State Lighting

<u>Code</u>	<u>Designation</u>	<u>Description</u>
22/S30	10 CFR 430 Appendix BB to Subpart B	Uniform Test Method for Measuring the Input Power, Lumen Output, Lamp Efficacy, Correlated Color Temperature (CCT), Color Rendering Index (CRI), Power Factor, Time to Failure, and Standby Mode Power of Integrated Light-Emitting Diode (LED) Lamps
22/S32	81 FR 43403	Energy Conservation Program: Test Procedures for Integrated Light-Emitting Diode Lamps

SSL Color Measurements

<u>Code</u>	<u>Designation</u>	<u>Description</u>
22/S01a	IES LM-58:2013	Spectroradiometric Measurements
22/S02	CIE Pub. 13.3:1995	Method of Measuring and Specifying Color Rendering of Light Sources
22/S04	IES LM-16:1993	Practical Guide to Colorimetry of Light Sources
22/S05	CIE Pub. 15:2004	Colorimetry
22/S05a	CIE Pub. 15:2018	Colorimetry, 4th Edition

ENERGY EFFICIENT LIGHTING PRODUCTS

NVLAP LAB CODE 500084-0

22/S23	ANSI C78.377:2011	Specifications for the Chromaticity of Solid State Lighting Products
22/S23a	ANSI C78.377:2015	Specifications for the Chromaticity of Solid State Lighting Products
22/S23b	ANSI C78.377:2017	Specifications for the Chromaticity of Solid State Lighting Products

SSL Electrical Measurements

<u>Code</u>	<u>Designation</u>	<u>Description</u>
22/S06	ANSI C82.2:2002	Ballast for Fluorescent Lamps - Methods of Measurement <i>Testing also conducted at 160 Frobisher Dr. Unit 5, Waterloo, ON N2V 2B1.</i>
22/S07	ANSI C82.77:2002	Harmonic Emission Limits - Related Power Quality Requirements for Lighting Equipment <i>Testing also conducted at 160 Frobisher Dr. Unit 5, Waterloo, ON N2V 2B1.</i>
22/S07a	ANSI C82.77-10:2014	Harmonic Emission Limits - Related Power Quality Requirements for Lighting Equipment - Solid State <i>Testing also conducted at 160 Frobisher Dr. Unit 5, Waterloo, ON N2V 2B1.</i>
22/S07b	ANSI C82.77-10:2020	Harmonic Emission Limits - Related Power Quality Requirements for Lighting Equipment - Solid State
22/S07c	ANSI C82.77-10:2021	Lighting Equipment - Harmonic Emission Limits - Related Power Quality Requirements - Solid State
22/S28	IEC 62301:2011	Household Electrical Appliances - Measurement of Standby Power <i>Testing also conducted at 160 Frobisher Dr. Unit 5, Waterloo, ON N2V 2B1.</i>
22/S38	ANSI/IES LM-79:2019 (Sec. 5)	Optical and Electrical Measurements of Solid-State Lighting Products - Electrical Test Conditions

SSL Life Tests

<u>Code</u>	<u>Designation</u>	<u>Description</u>
22/S18	EPA Lamps v. 1.0	Ambient Temperature Life Testing
22/S18a	ENERGY STAR® Ambient Temperature Life: September 2015	Ambient Temperature Life Test Method
22/S19	EPA Lamps v. 1.0	Elevated Temperature Life Testing

ENERGY EFFICIENT LIGHTING PRODUCTS

NVLAP LAB CODE 500084-0

22/S19a	ENERGY STAR® Elevated Temperature Life: September 2015	Elevated Temperature Life Test Method
22/S25	IES LM-84:2014	Approved Method for Measuring Luminous Flux and Color Maintenance of LED Lamps, Light Engines, and Luminaires
22/S25a	ANSI/IES LM-84:2020	Measuring Optical Radiation Maintenance of LED Lamps, Light Engines, and Luminaires

SSL Photometric Measurements

<u>Code</u>	<u>Designation</u>	<u>Description</u>
22/S09	IES LM-79:2008 (Sec. 9)	Solid State Lighting Luminaires - Total Flux Measurements (Luminous Efficacy)
22/S09a	ANSI/IES LM-79:2019 (Sec. 7)	Optical and Electrical Measurements of Solid-State Lighting Products - Total Luminous Flux and Integrated Optical Measurements
22/S10	IES LM-79:2008 (Sec. 10)	Solid State Lighting Luminaires - Luminous Intensity Measurements <i>Testing also conducted at 160 Frobisher Dr. Unit 5, Waterloo, ON N2V 2B1.</i>
22/S10a	ANSI/IES LM-79:2019 (Sec. 8)	Optical and Electrical Measurements of Solid-State Lighting Products - Luminous Intensity or Optical Angular Distribution Measurement <i>Testing also conducted at 160 Frobisher Dr. Unit 5, Waterloo, ON N2V 2B1.</i>
22/S13	IES LM-82-12	Characterization of LED Light Engines and LED Lamps for Electrical and Photometric Properties as a Function of Temperature
22/S13a	ANSI/IES LM-82:2020	Characterization of Optical and Electrical Properties of Solid-State Lighting Products as a Function of Temperature
22/S20	EPA Lamps v. 1.0	Elevated Temperature Light Output Ratio
22/S20a	ENERGY STAR® Elevated Temperature Light Output Ratio: September 2015	Elevated Temperature Light Output Ratio Test Method
22/S21	EPA Lamps v. 1.0	Start Time
22/S21a	ENERGY STAR® Start Time: September 2015	Start Time Test Method
22/S21b	ENERGY STAR® Start Time: October 2017	Start Time Test Method
22/S35	NEMA 77:2017	Temporal Light Artifacts: Test Methods and Guidance for Accepted Criteria

ENERGY EFFICIENT LIGHTING PRODUCTS

NVLAP LAB CODE 500084-0

22/S39 ANSI/IES LM-90:2020 Measuring Luminous Flux Waveforms for Use in Temporal Light Artifact (TLA) Calculations

SSL Temperature Measurement

<u>Code</u>	<u>Designation</u>	<u>Description</u>
22/S15	ANSI/UL 153:2002 (Secs. 124-128A)	Standard for Portable Electric Luminaires <i>Testing also conducted at 160 Frobisher Dr. Unit 5, Waterloo, ON N2V 2B1.</i>
22/S16	ANSI/UL 1574:2004 (Sec. 54)	Standard for Track Lighting Systems <i>Testing also conducted at 160 Frobisher Dr. Unit 5, Waterloo, ON N2V 2B1.</i>
22/S17	ANSI/UL 1598:2008 (Secs. 19.7, 19.10-16)	Luminaires <i>Testing also conducted at 160 Frobisher Dr. Unit 5, Waterloo, ON N2V 2B1.</i>
22/S17a	ANSI/UL 1598C	Light-Emitting Diode (LED) Retrofit Luminaire Conversion Kits <i>Testing also conducted at 160 Frobisher Dr. Unit 5, Waterloo, ON N2V 2B1.</i>