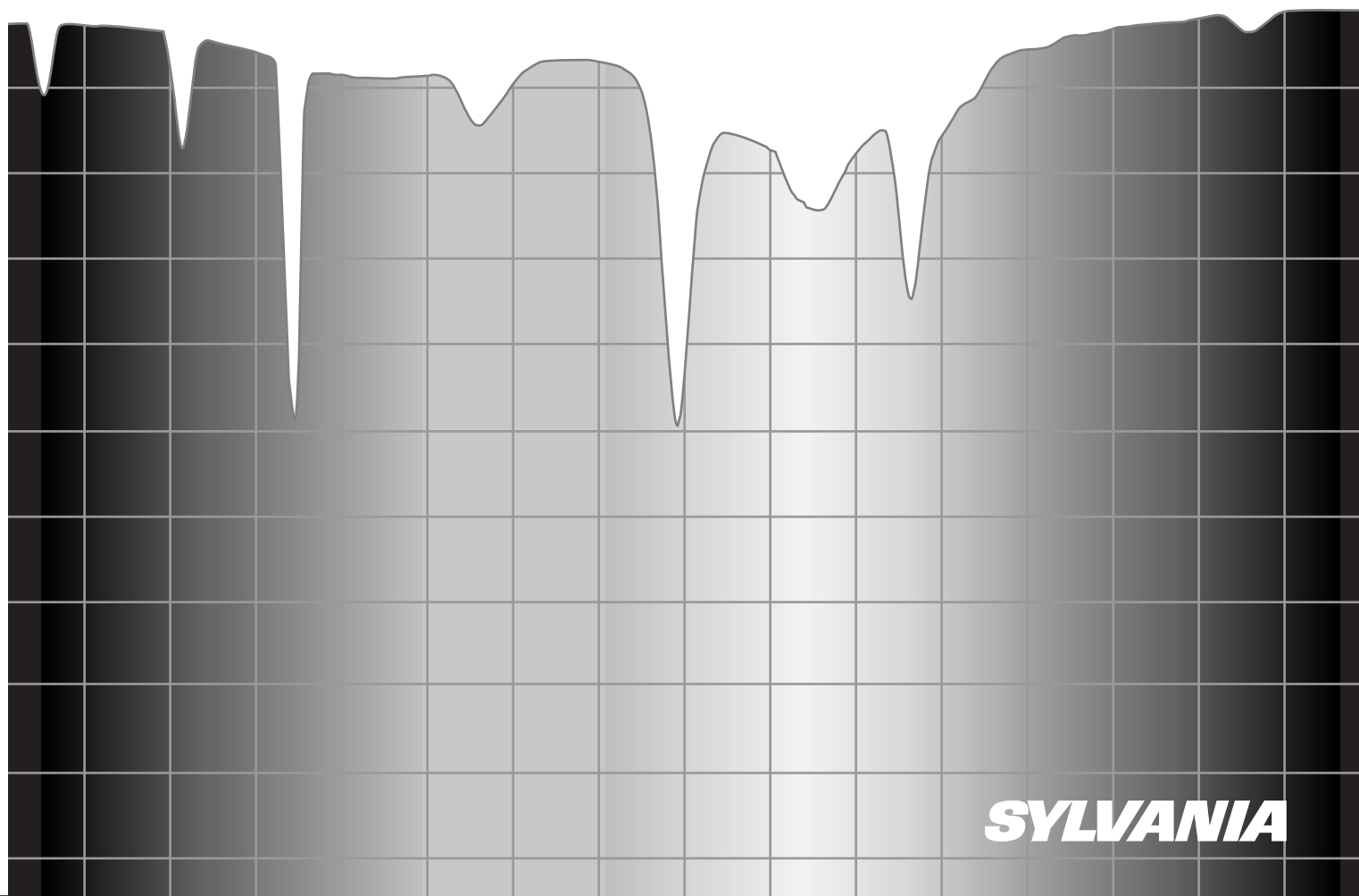
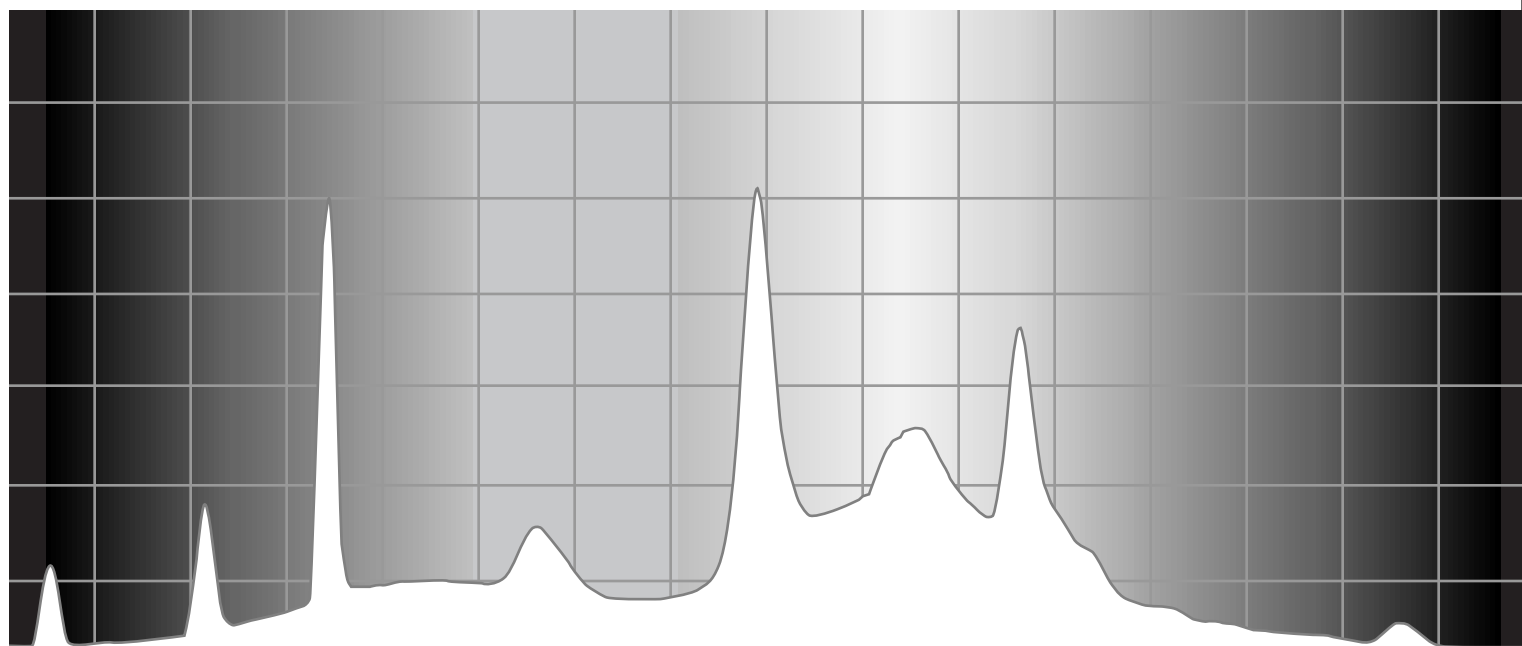


Spectral Power Distributions of SYLVANIA Fluorescent Lamps



Introduction

The spectral emission from a fluorescent lamp is a combination of two forms: (1) the continuous spectrum emitted by the phosphor coating on the inside of the bulb wall, and (2) the spectral lines emitted by the mercury arc itself. In the following spectral power distribution (SPD) diagrams, the normalized power (in units of watts per nanometer per 1000 lumens) is shown plotted against wavelength.

For convenience and by convention, the power in each mercury line is shown as a peak with finite width centered about the actual wavelength of the line. The area under a finite width peak is the power in that mercury line. The principal mercury lines are near 365 nm,

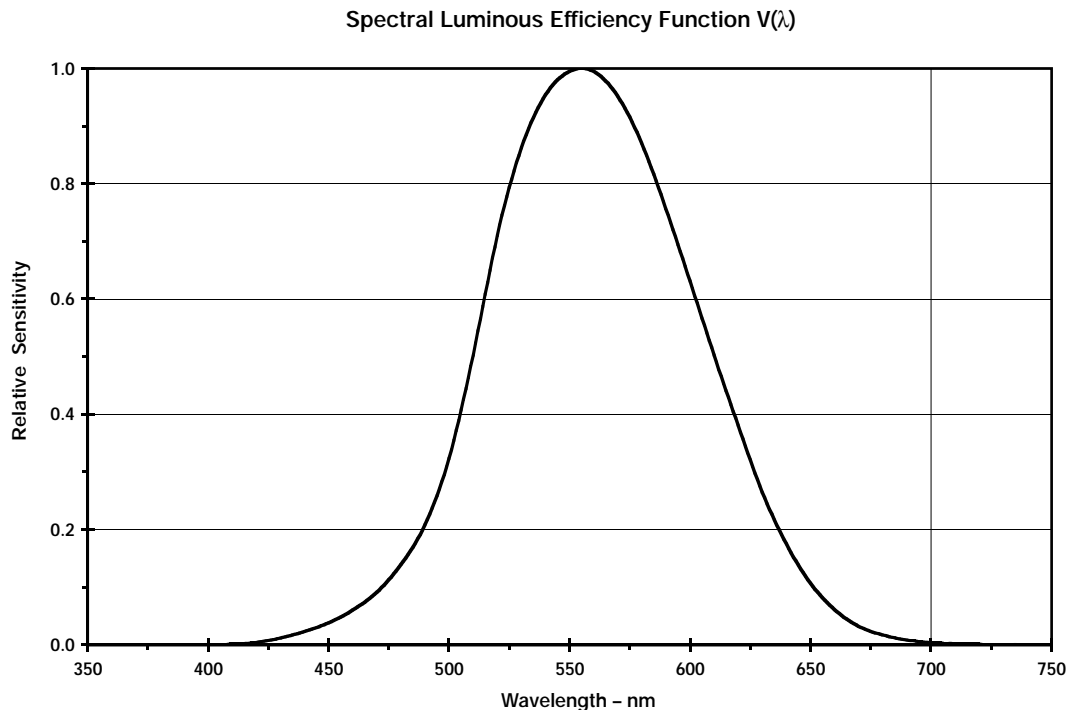
405 nm, 436 nm, 546 nm, and 578 nm. It should be noted that power from the mercury lines in the visible spectrum represents only a few percent of the lumen output from the lamp.

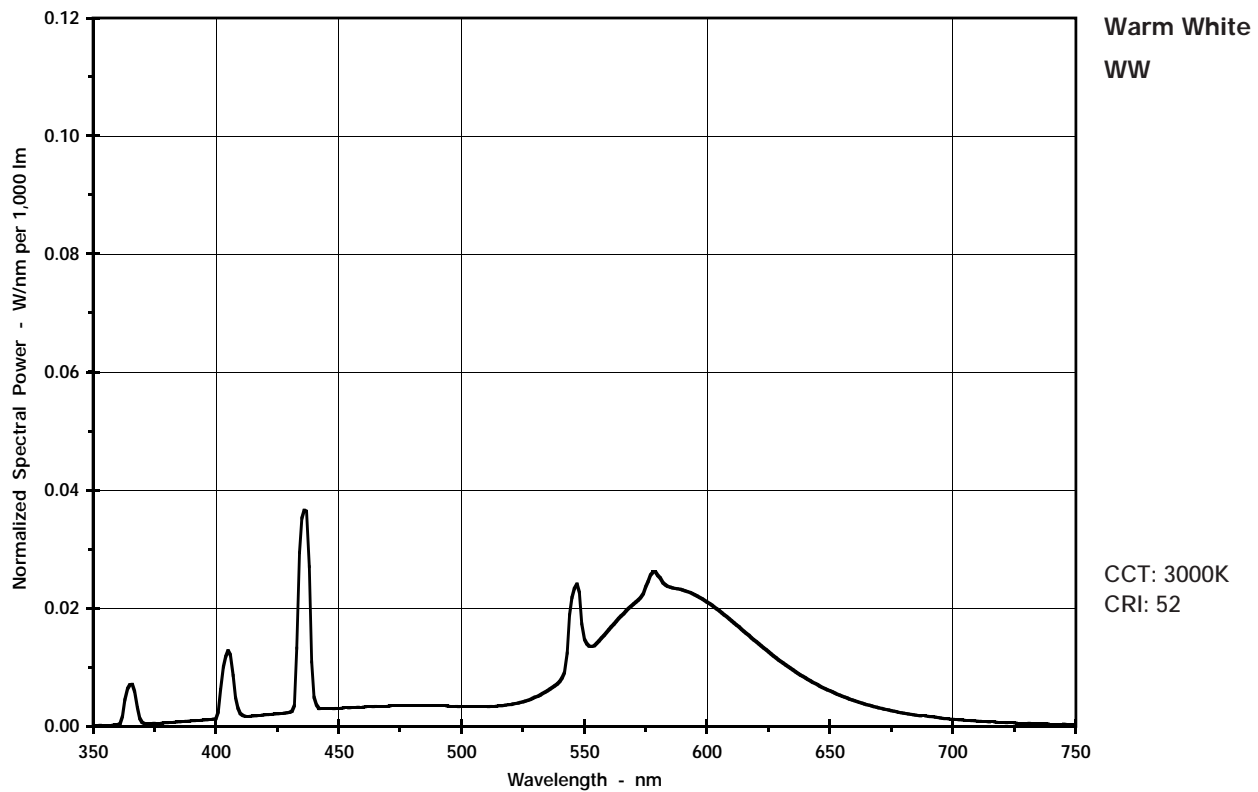
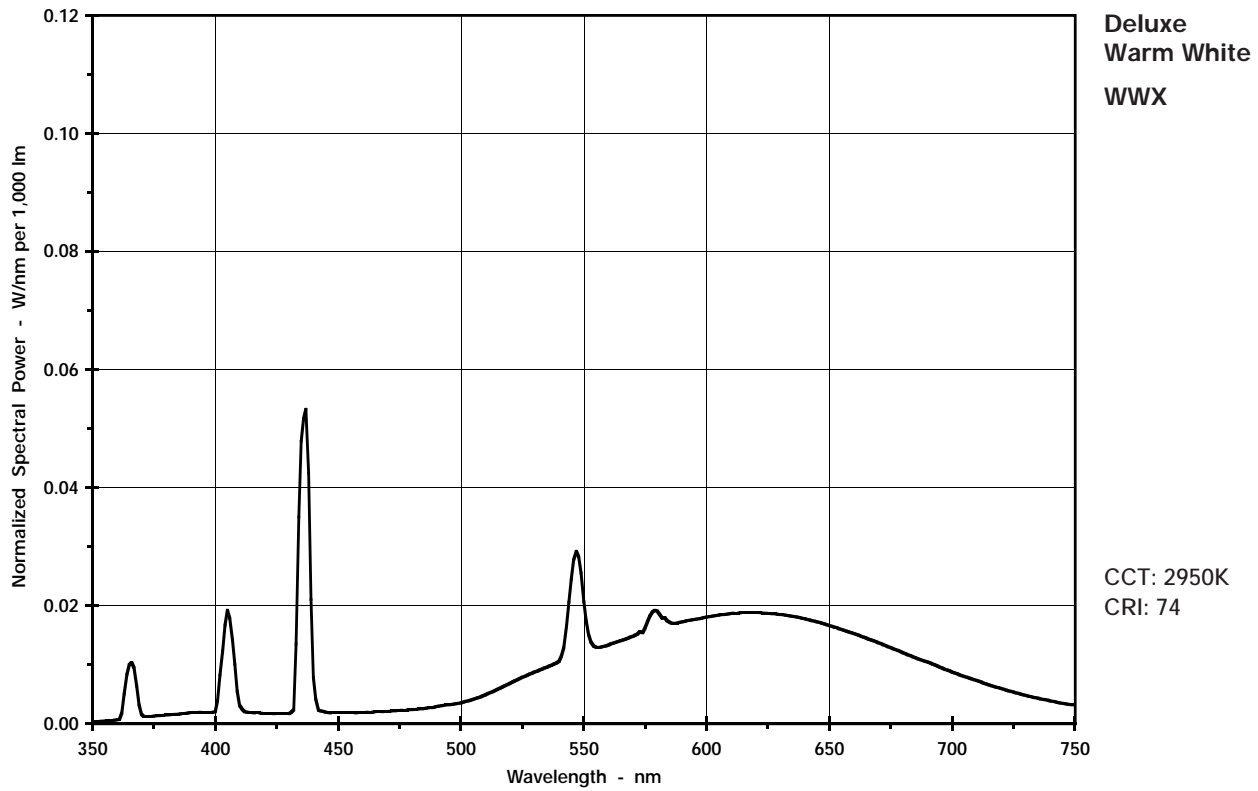
The areas under the curves represent the total power output of the lamps between 350 nm to 750 nm (in units of watts per 1000 lumens). These curves do not directly represent what the human eye sees because the eye is more sensitive to some wavelengths than to others. The diagram below shows the photopic spectral luminous efficiency function $V(\lambda)$, i.e., the sensitivity of the human eye at the various wavelengths. If at each wavelength the SPD value were multiplied by the $V(\lambda)$ value at that same

wavelength, the area under the new curve would be proportional to lumens.

Tables, page 23, summarize the power in various arbitrary wavelength bands (in units of watts per 1000 lumens). Both the curves and tabular values can be adjusted to a lamp of any wattage. Divide lamp lumens by 1000 to find the correction factor. Then multiply the curve values or tabular values by this factor. The units are watts per nanometer for the curve values and watts for the tabular values.

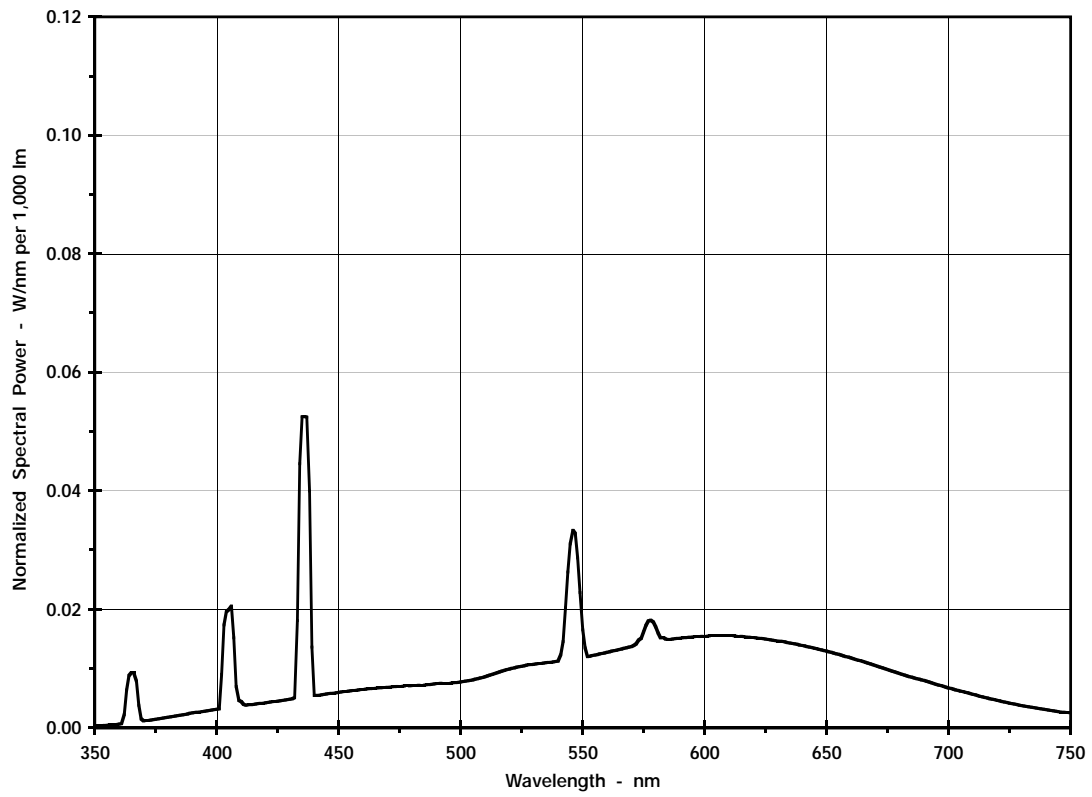
The SPD curves and the summary tables are based on measurements of representative lamps and do not constitute lamp performance specifications.





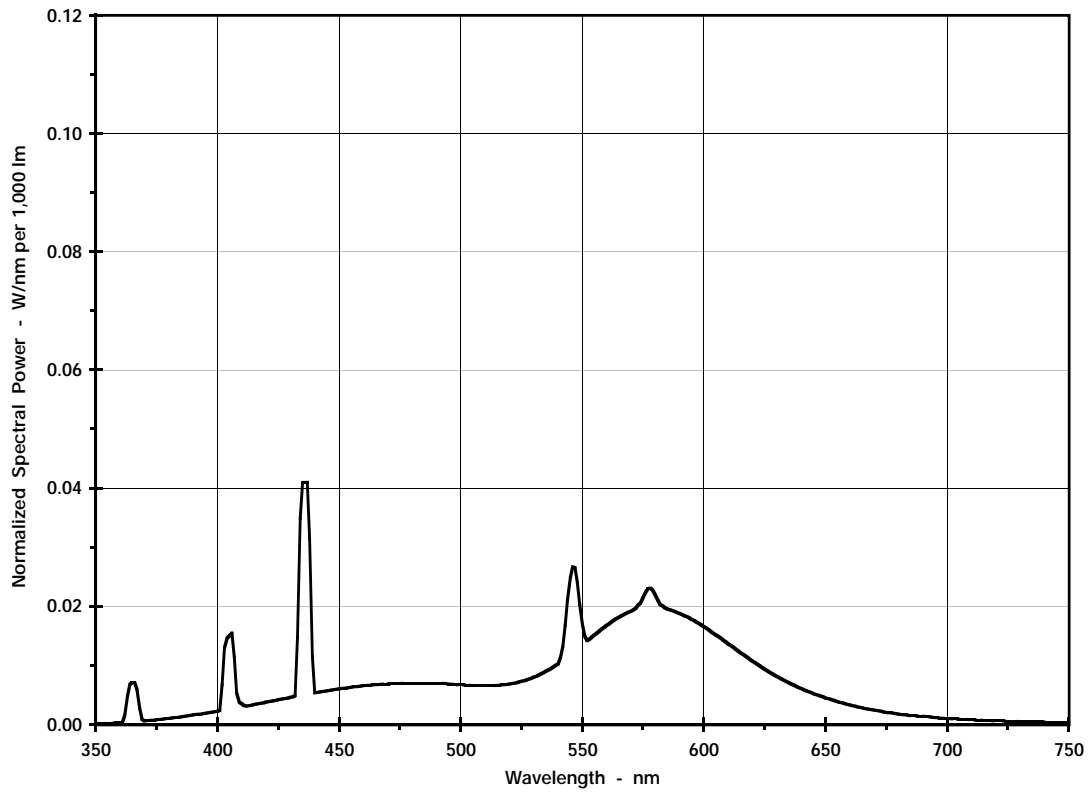
**Deluxe
Cool White
CWX**

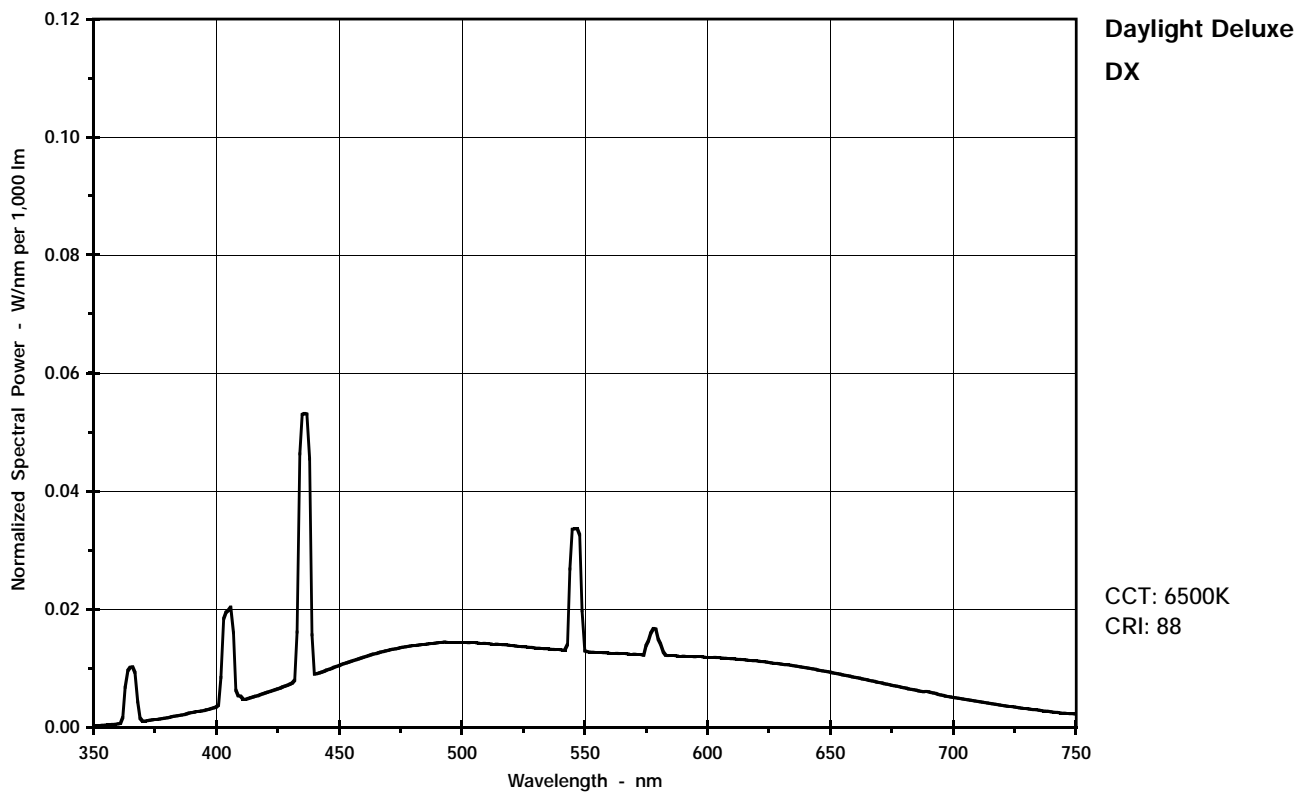
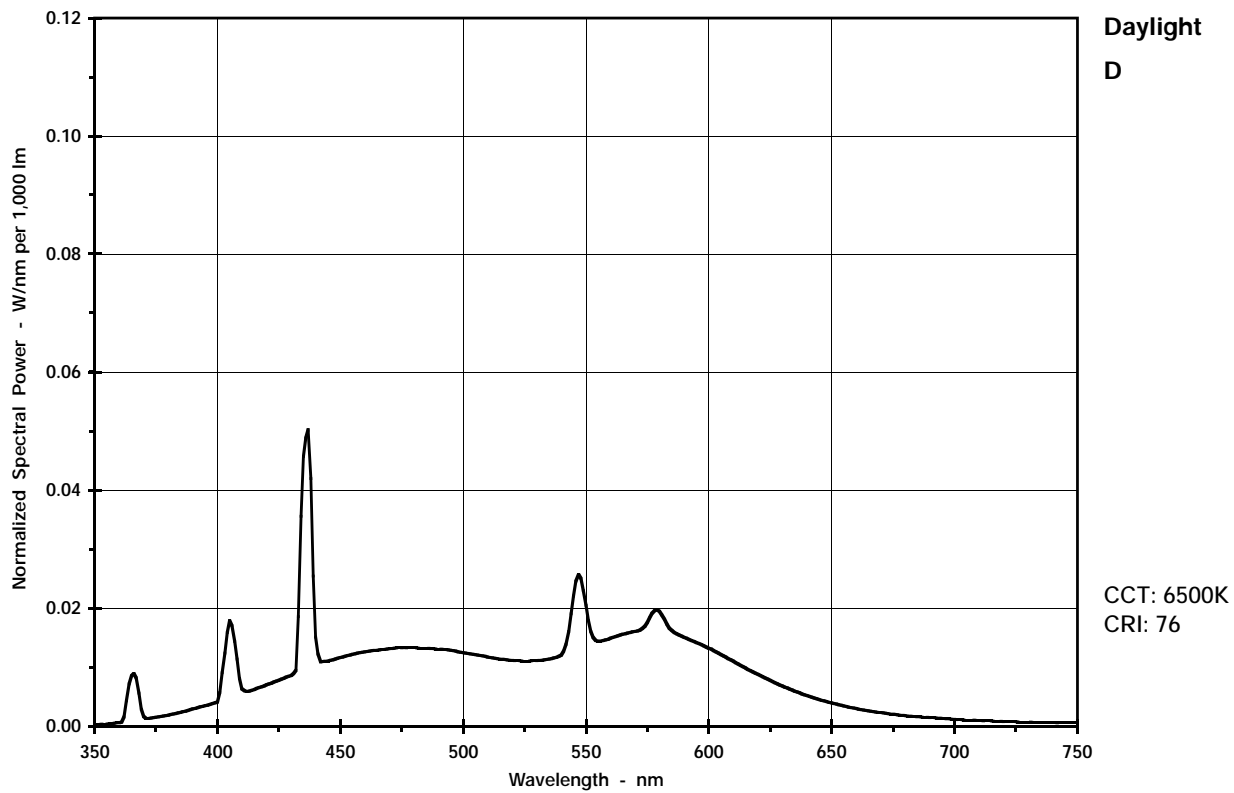
CCT: 4100K
CRI: 87



**Cool White
CW**

CCT: 4100K
CRI: 62



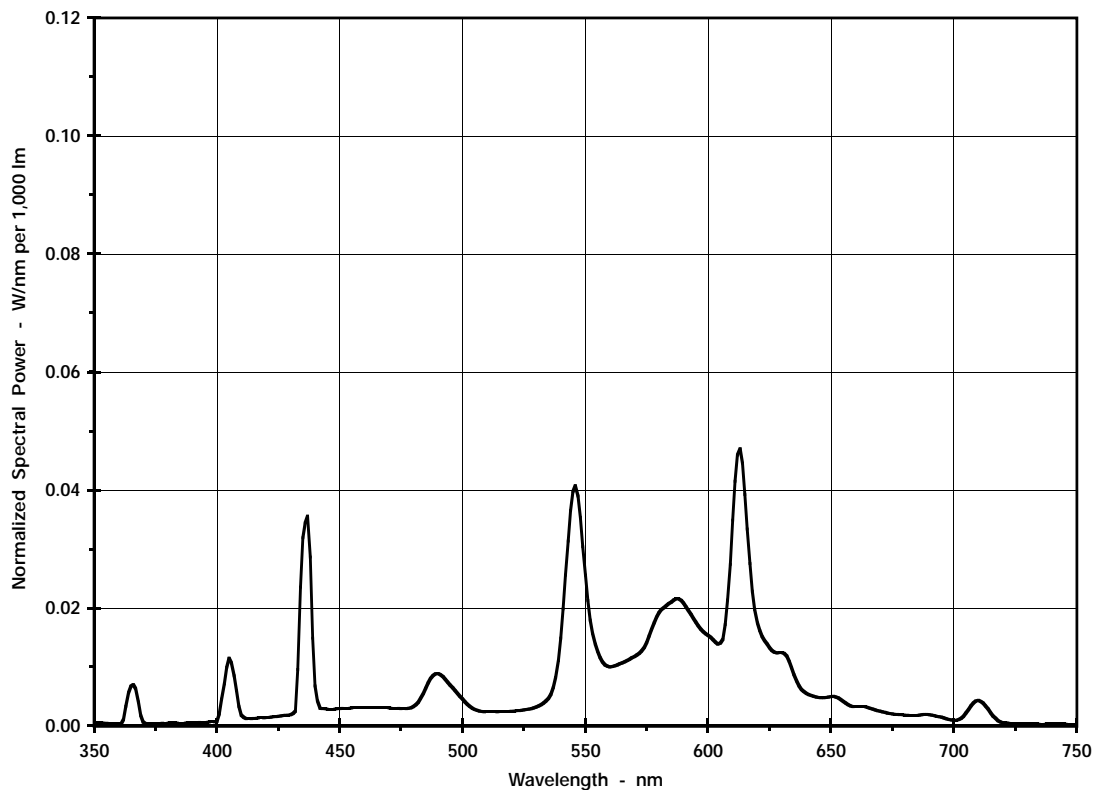


Designer®
Warm White
DWW

Designer® 3000
D30

Designer® 730
D730

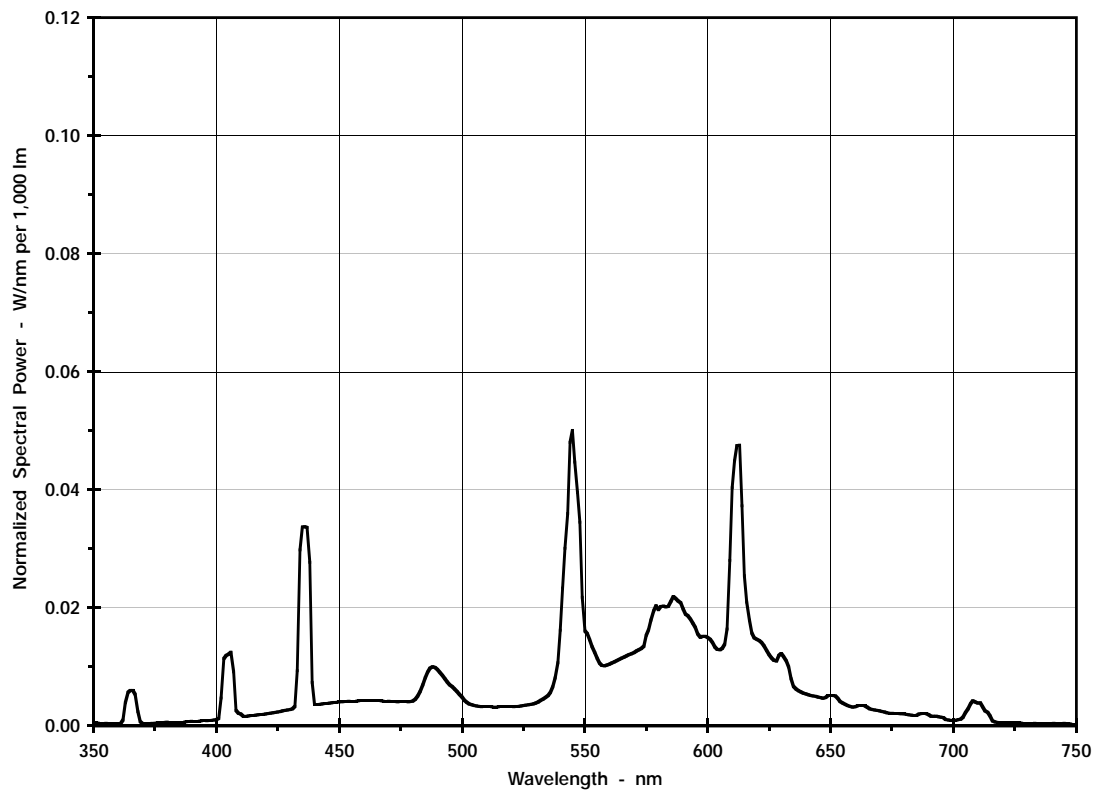
CCT: 3000K
CRI: 70

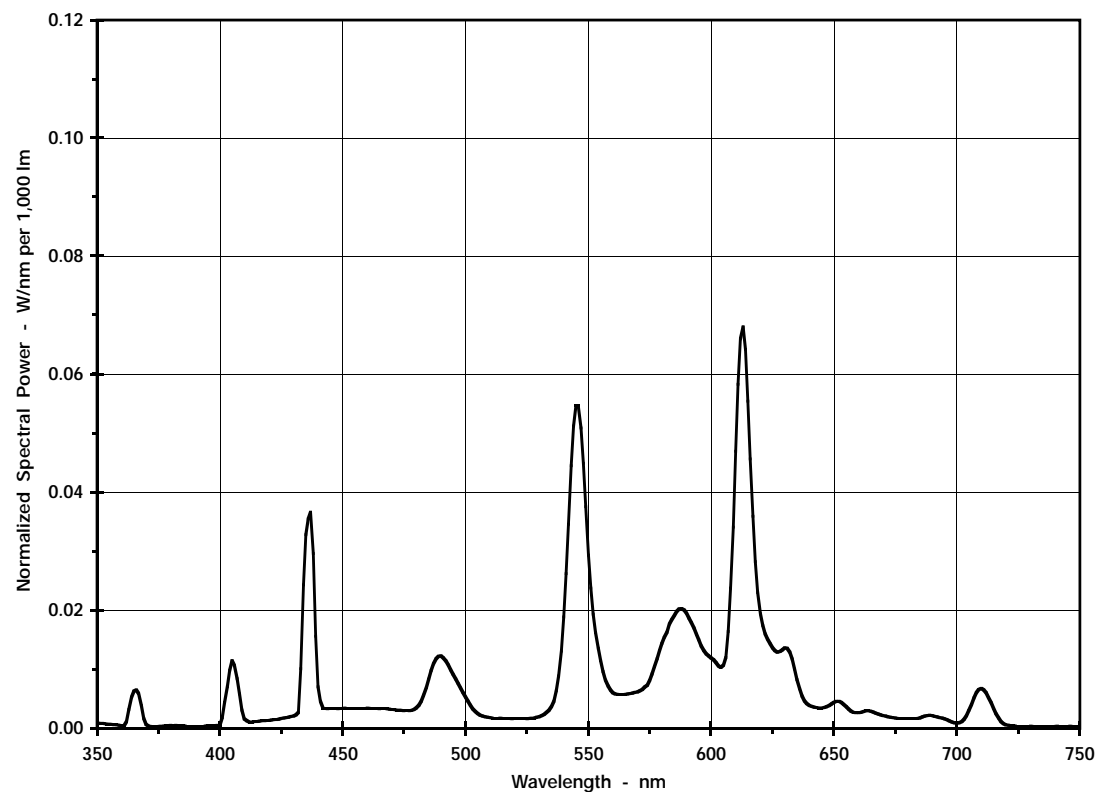
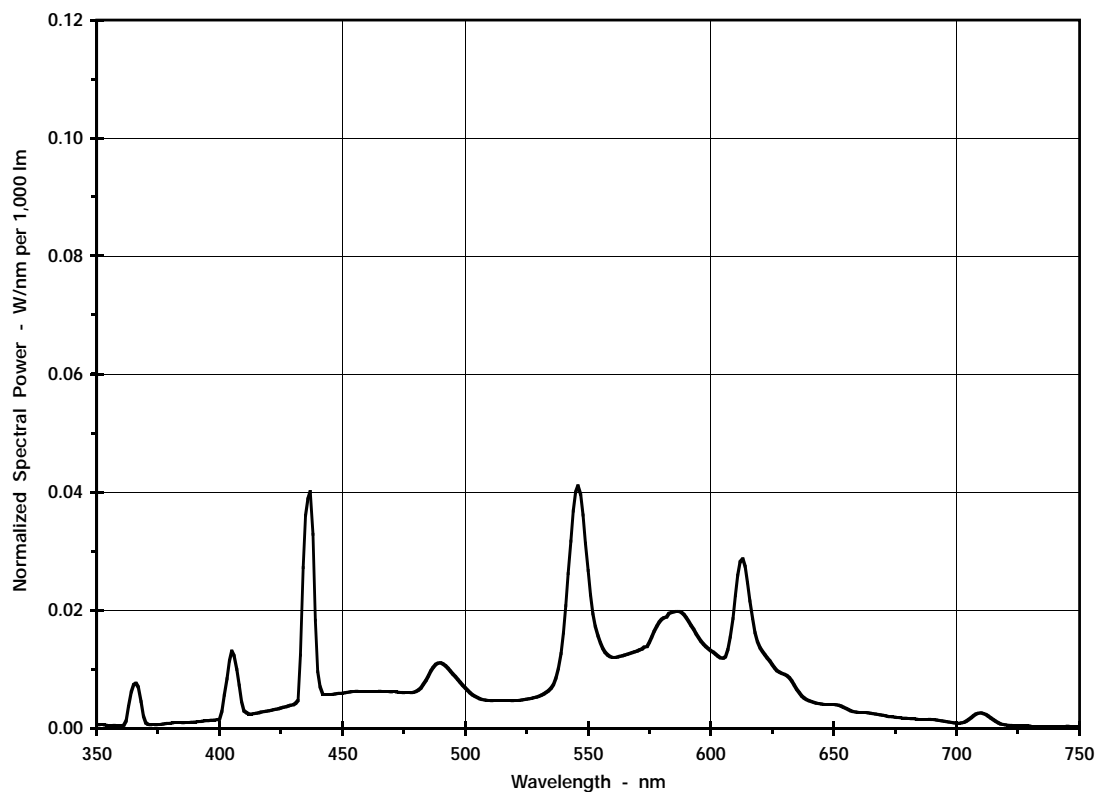


Designer® 3500
D35

Designer® 735
D735

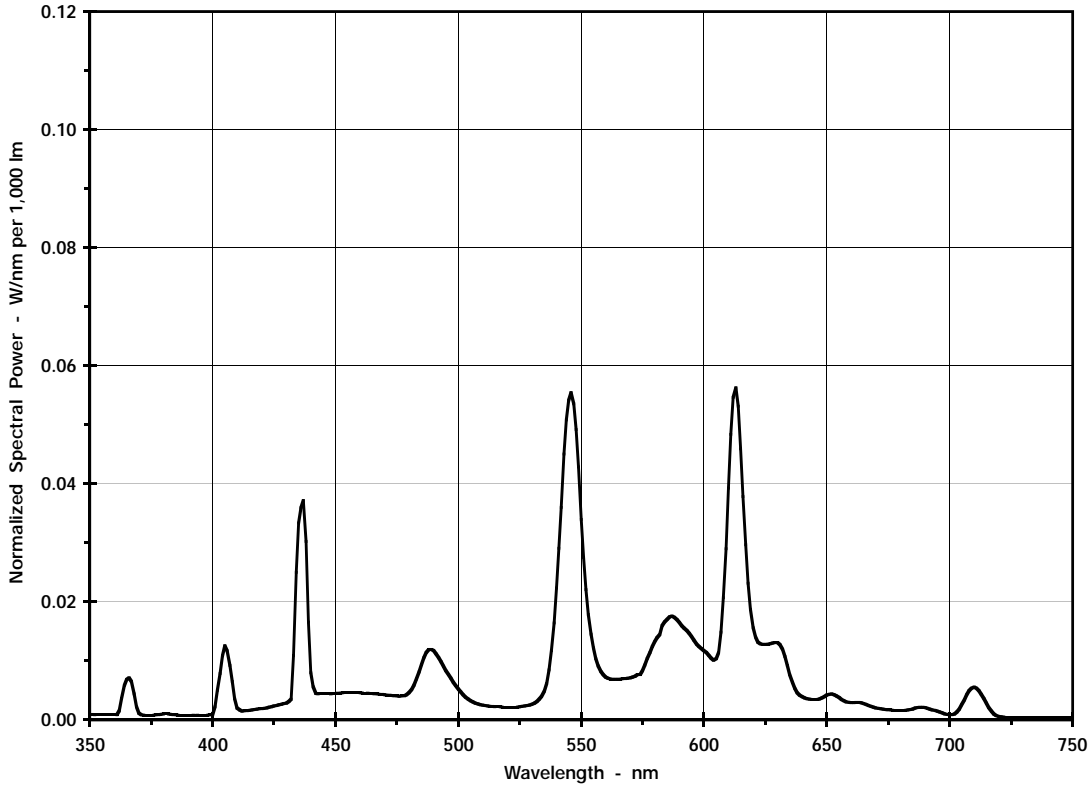
CCT: 3500K
CRI: 70





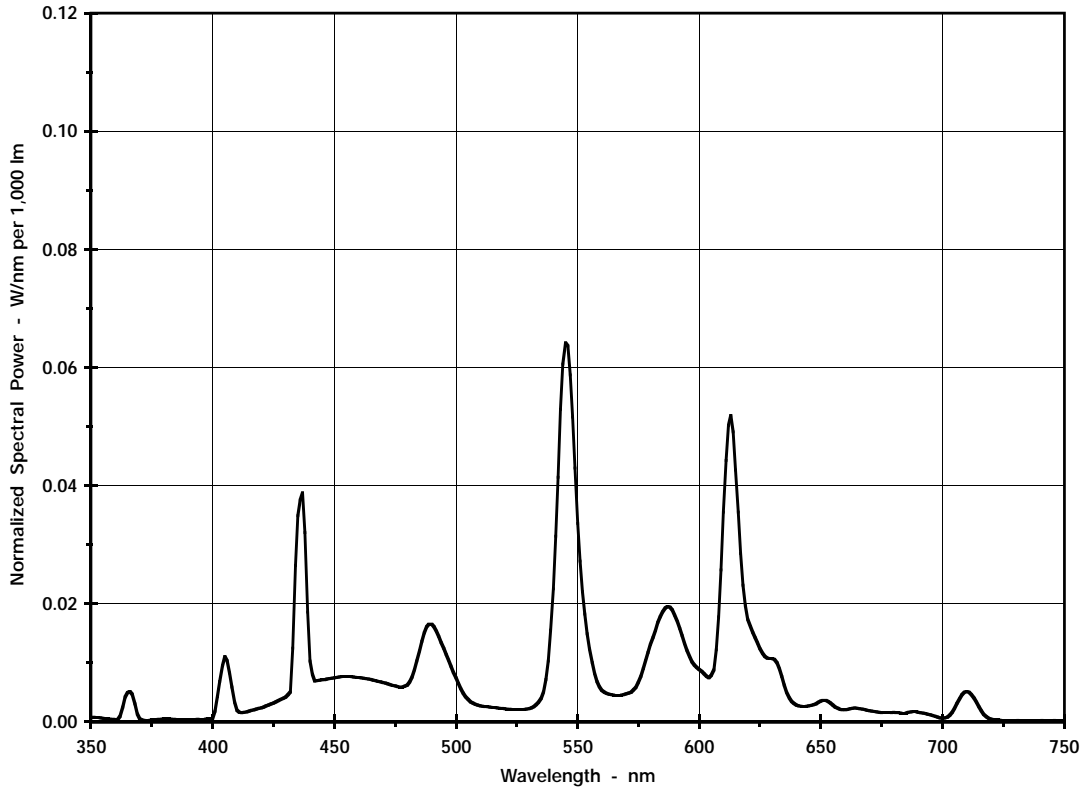
Designer® 835
D835

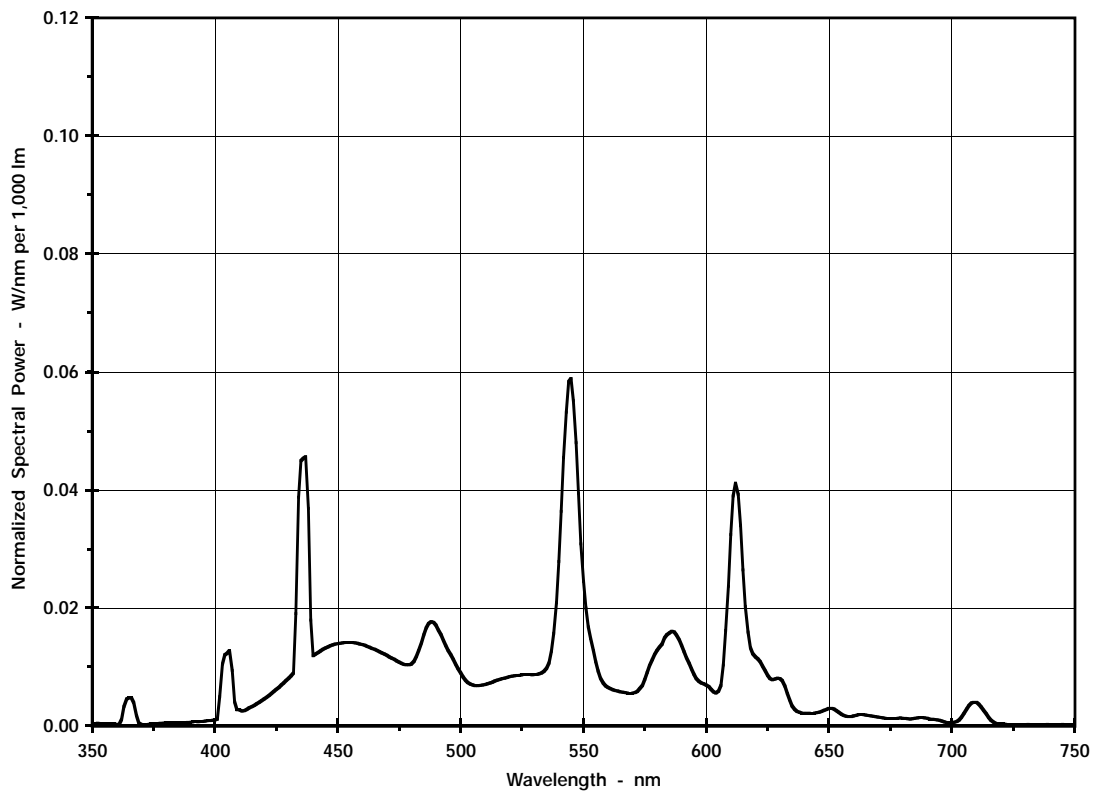
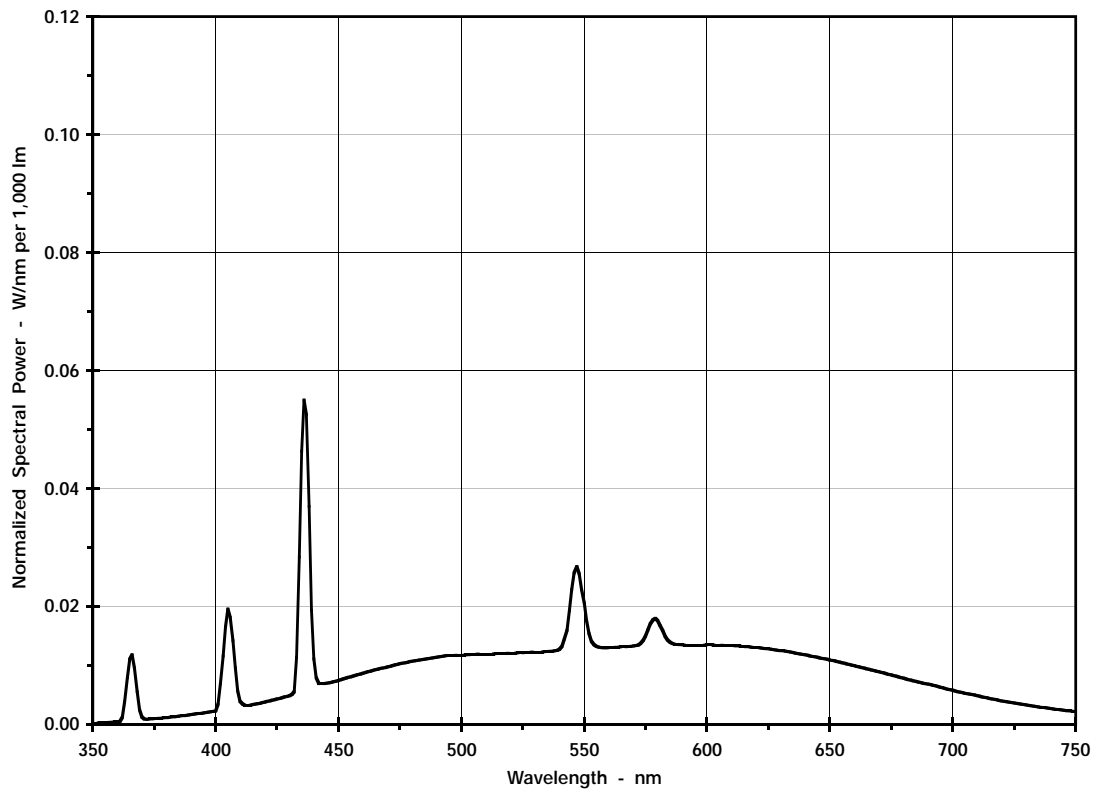
CCT: 3500K
CRI: 80



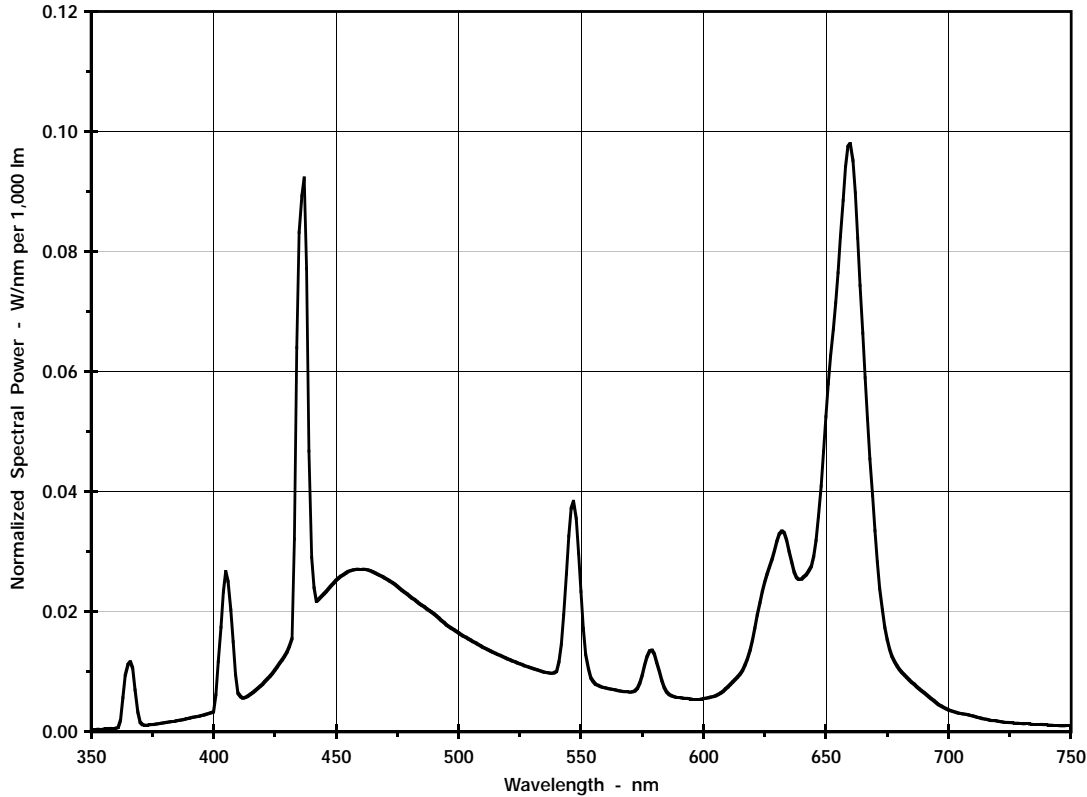
Designer® 841
D841

CCT: 4100K
CRI: 80

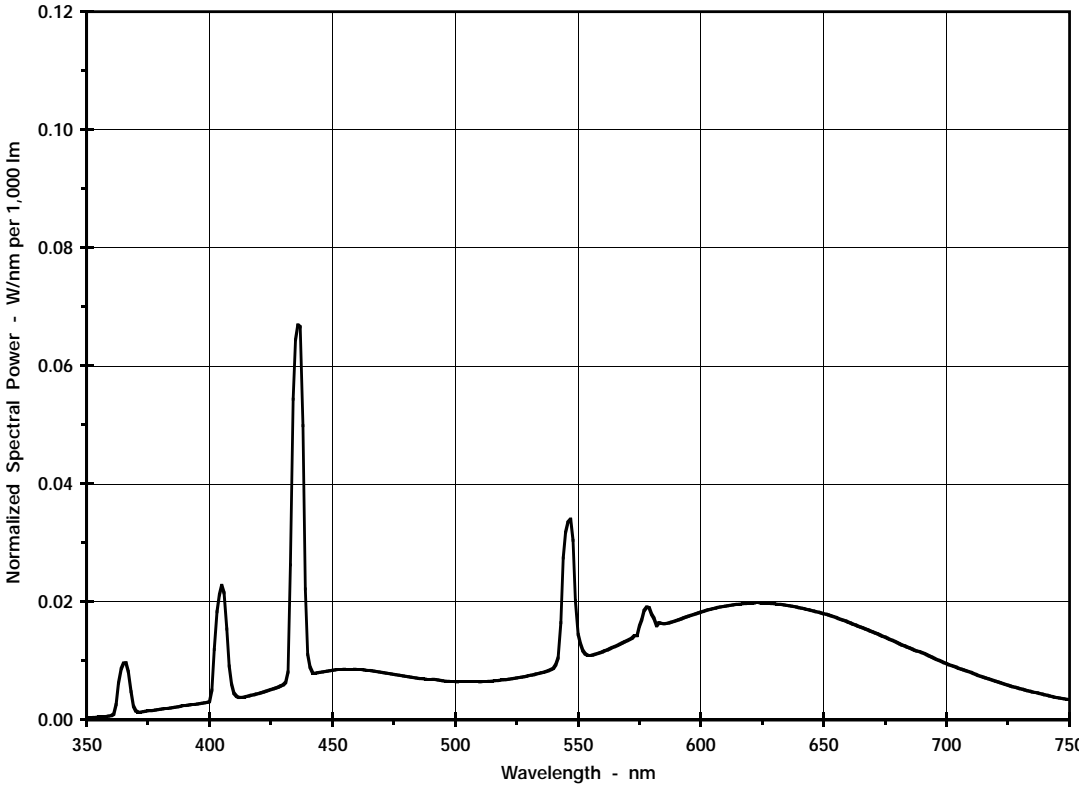




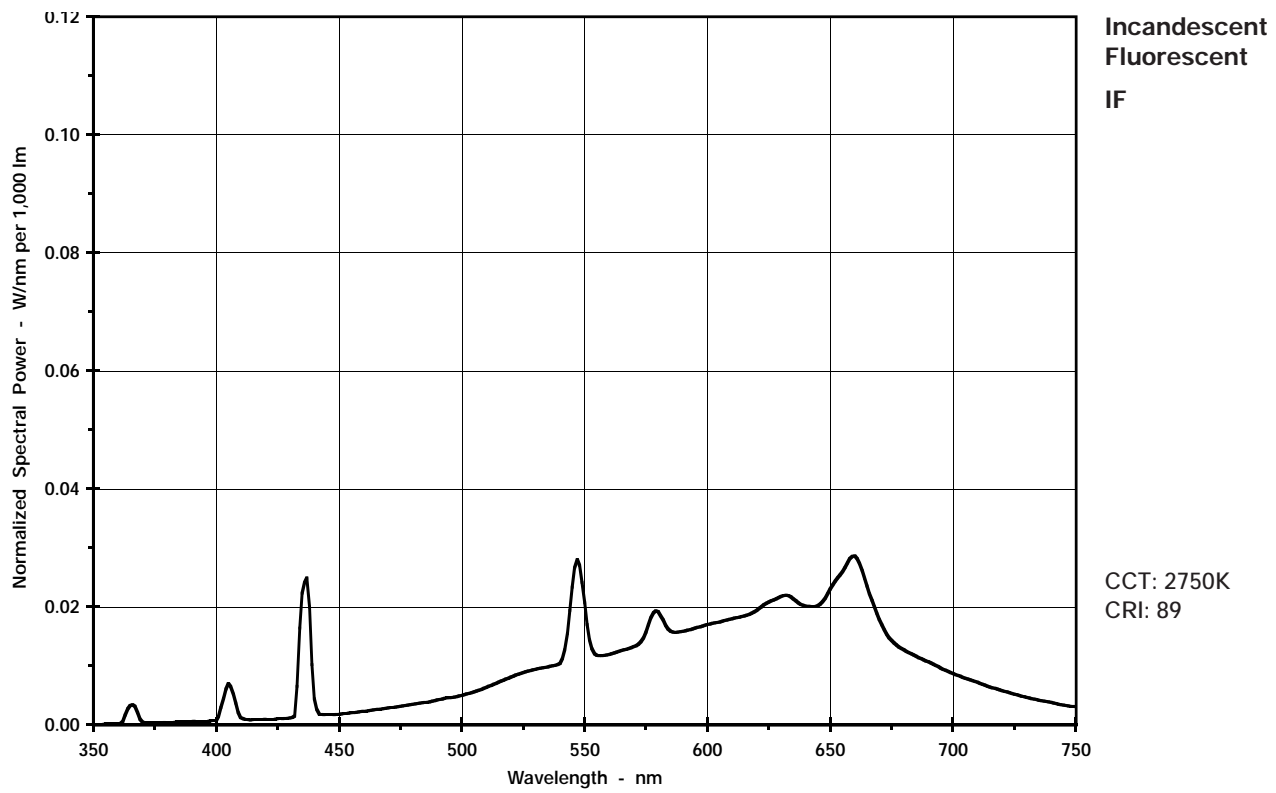
Gro-Lux®
GRO



Gro-Lux®
GRO/WS

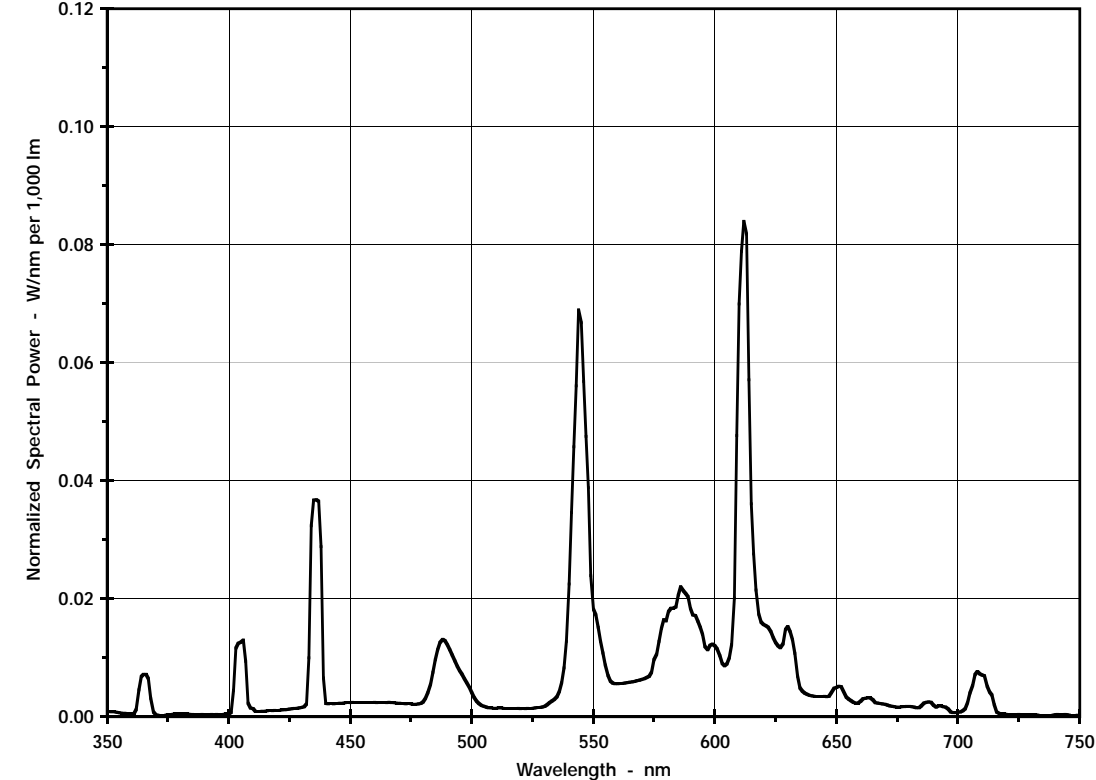


CCT: 3400K
CRI: 89



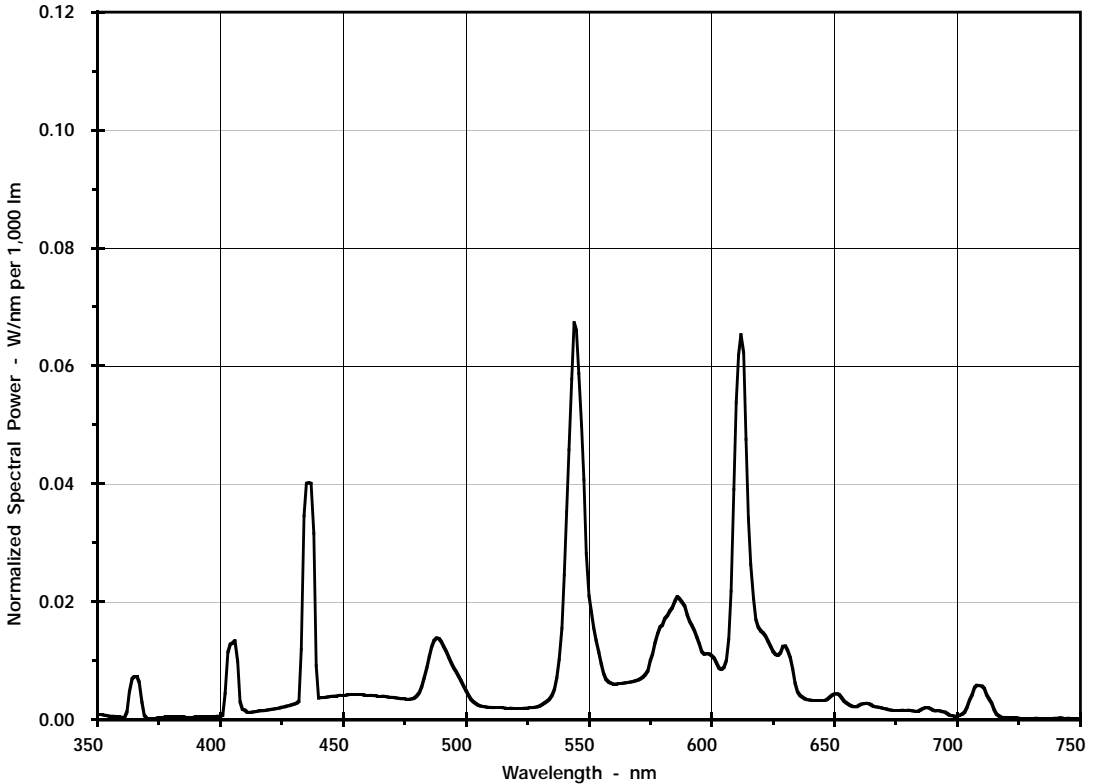
Octron® 730

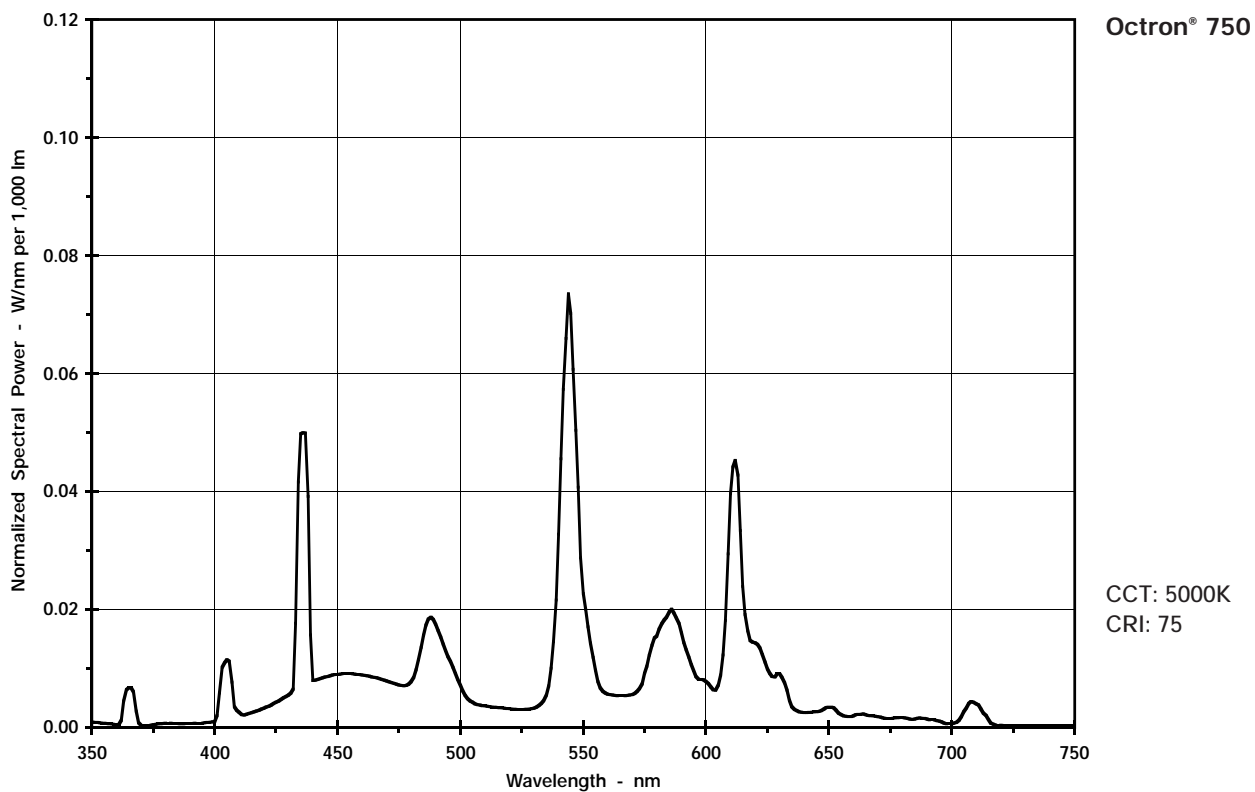
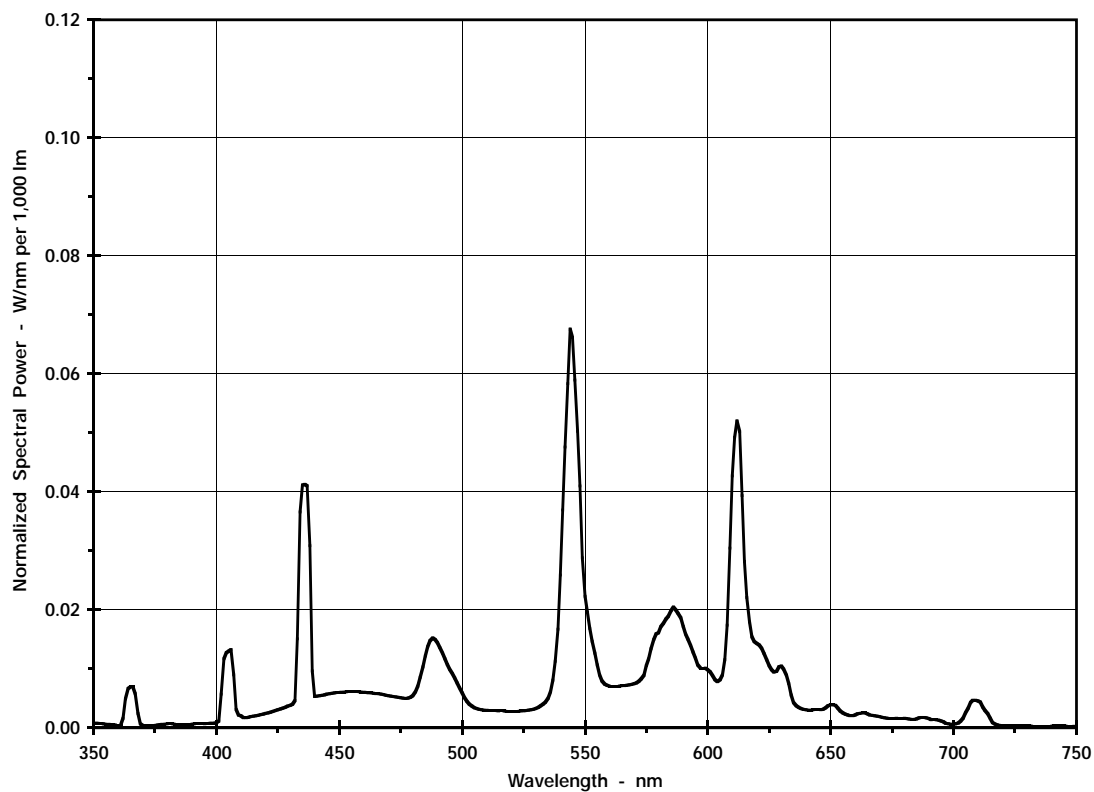
CCT: 3000K
CRI: 75



Octron® 735

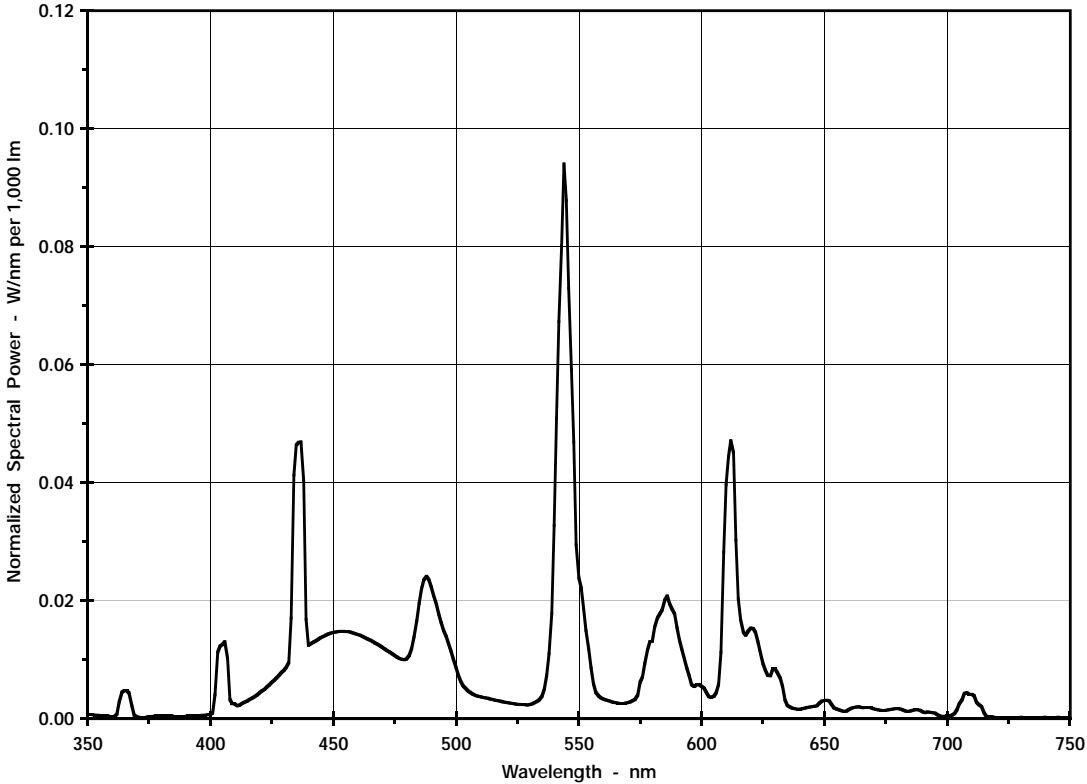
CCT: 3500K
CRI: 75





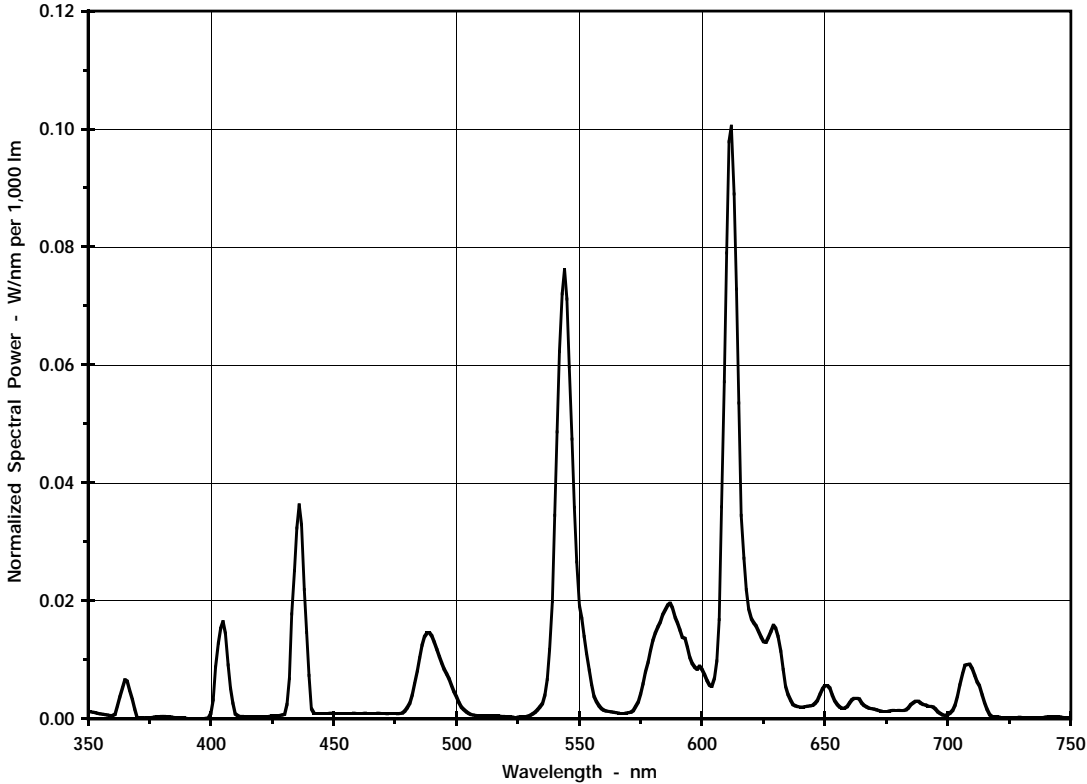
Octron® 765

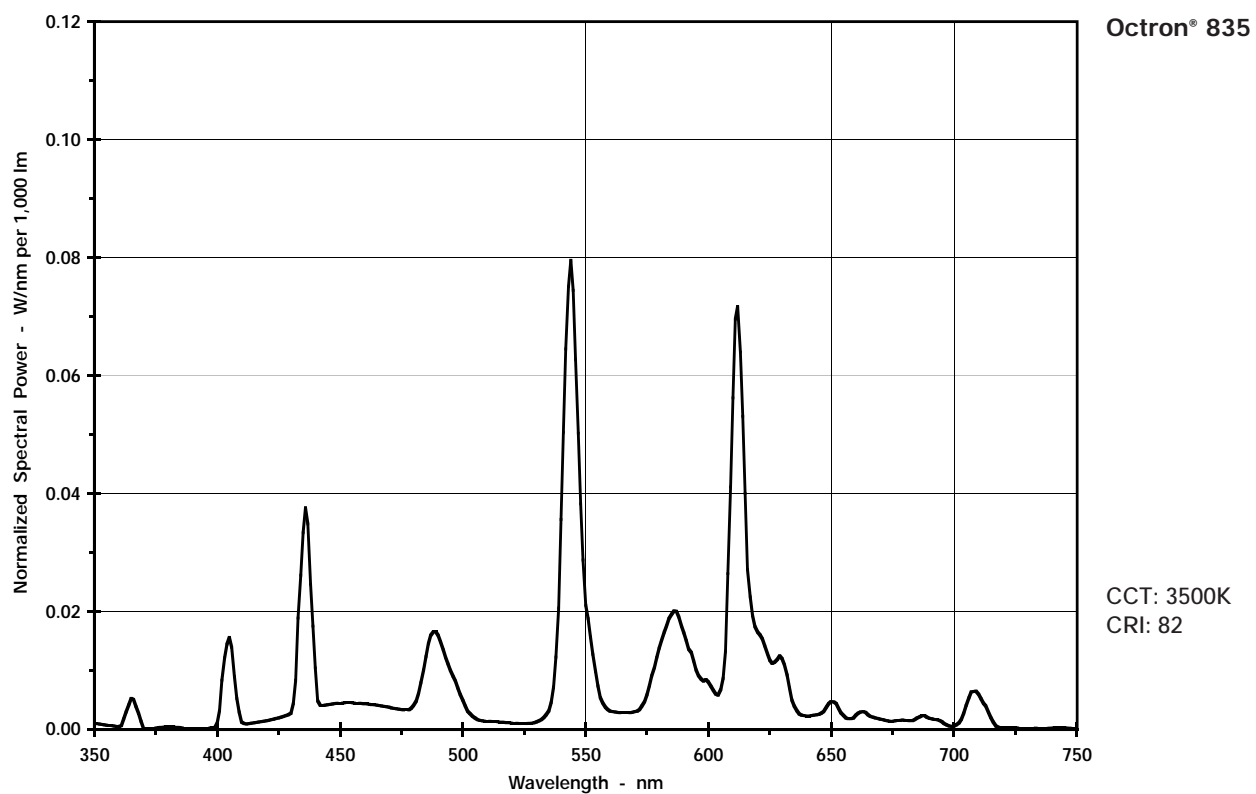
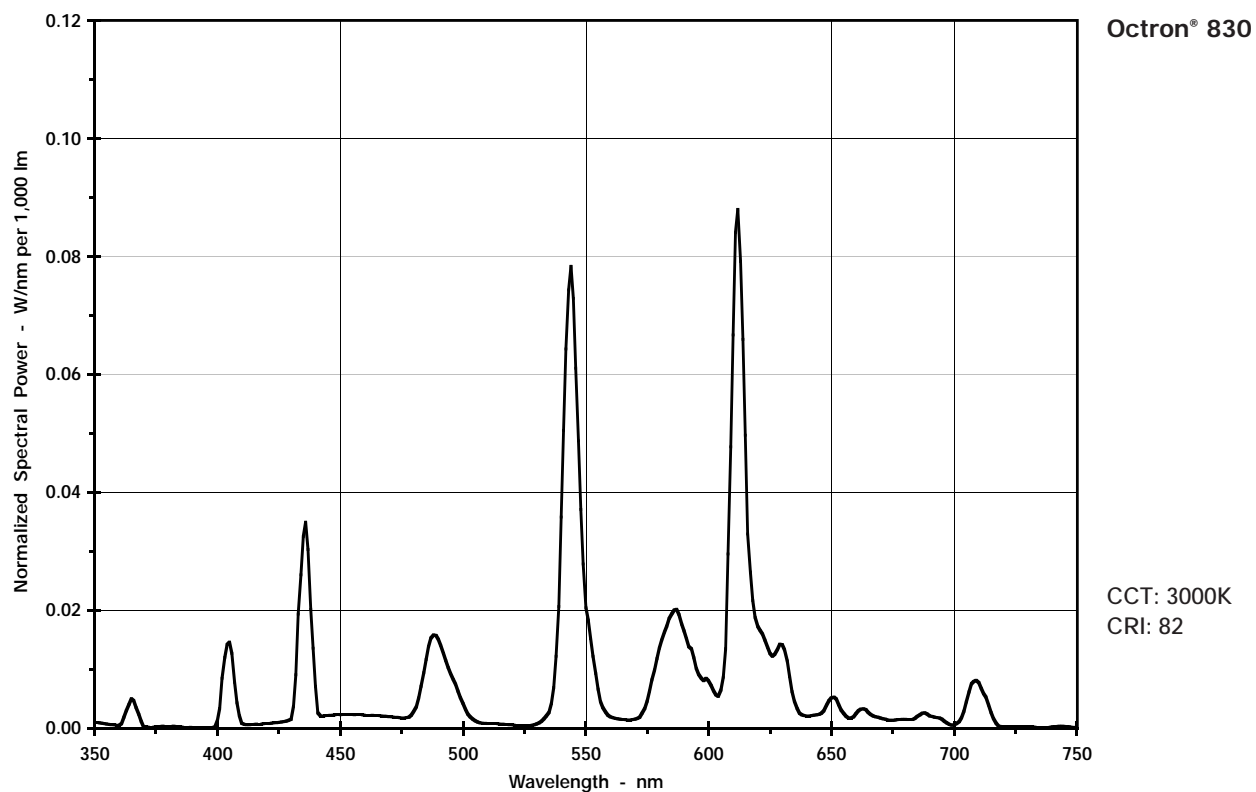
CCT: 6500K
CRI: 75



Octron® 827

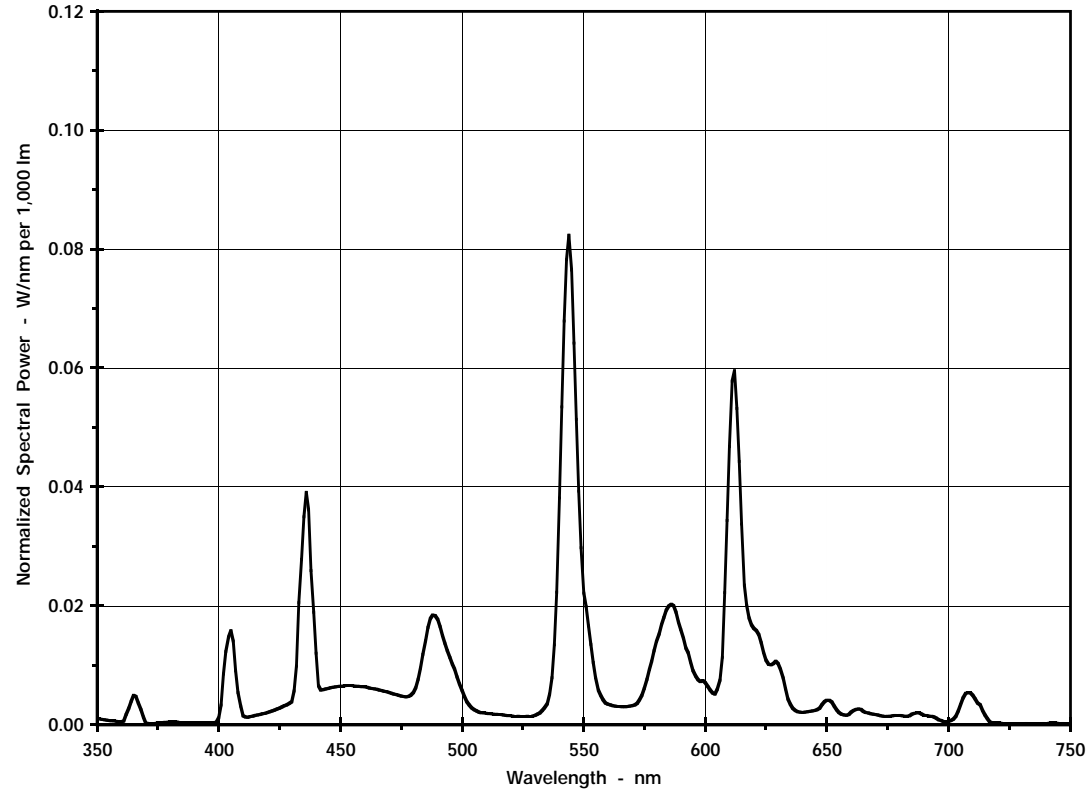
CCT: 2700K
CRI: 84





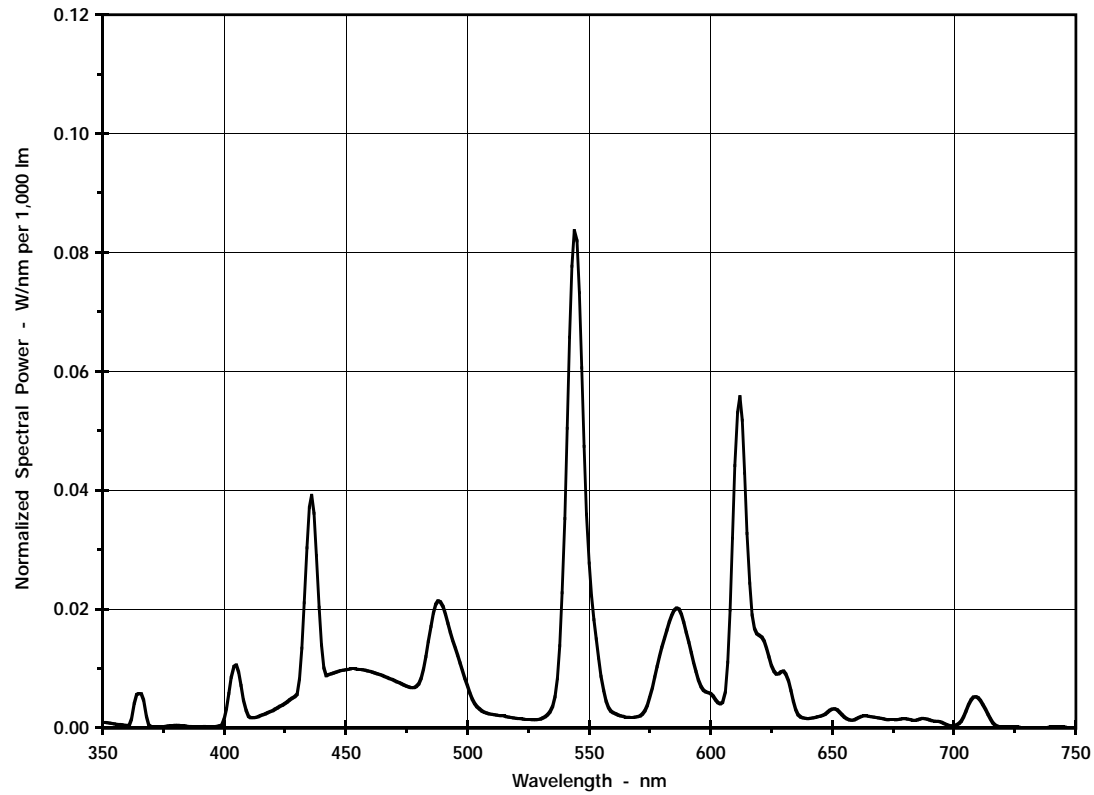
Octron® 841

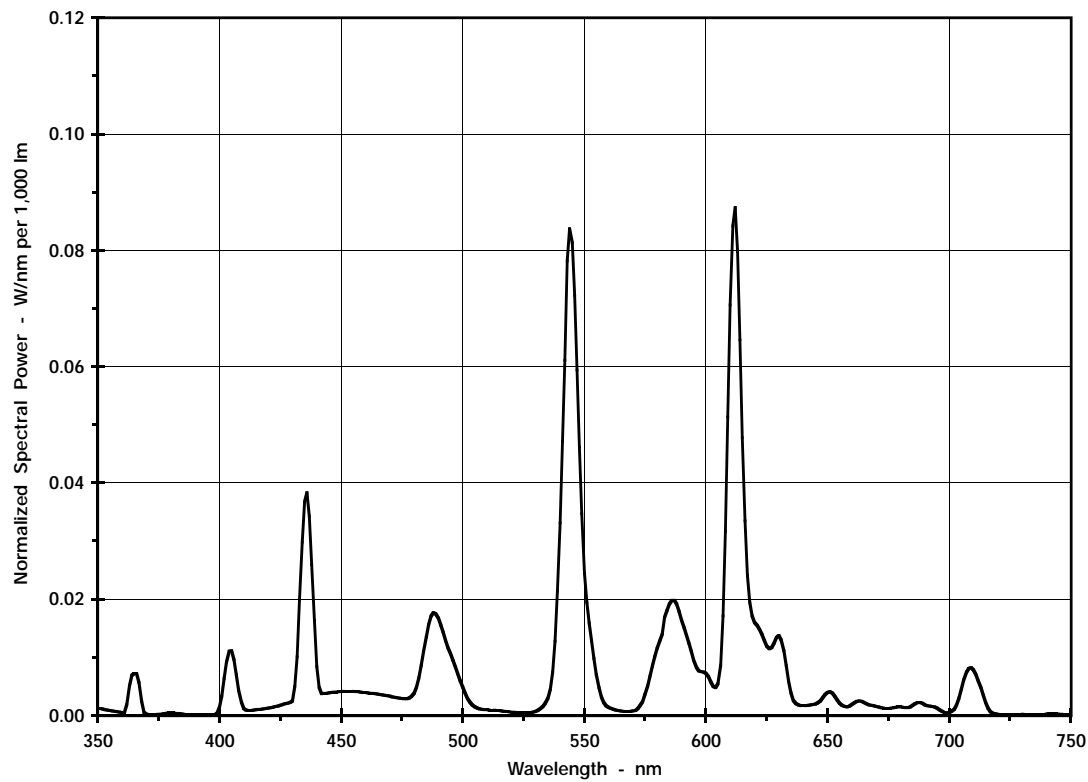
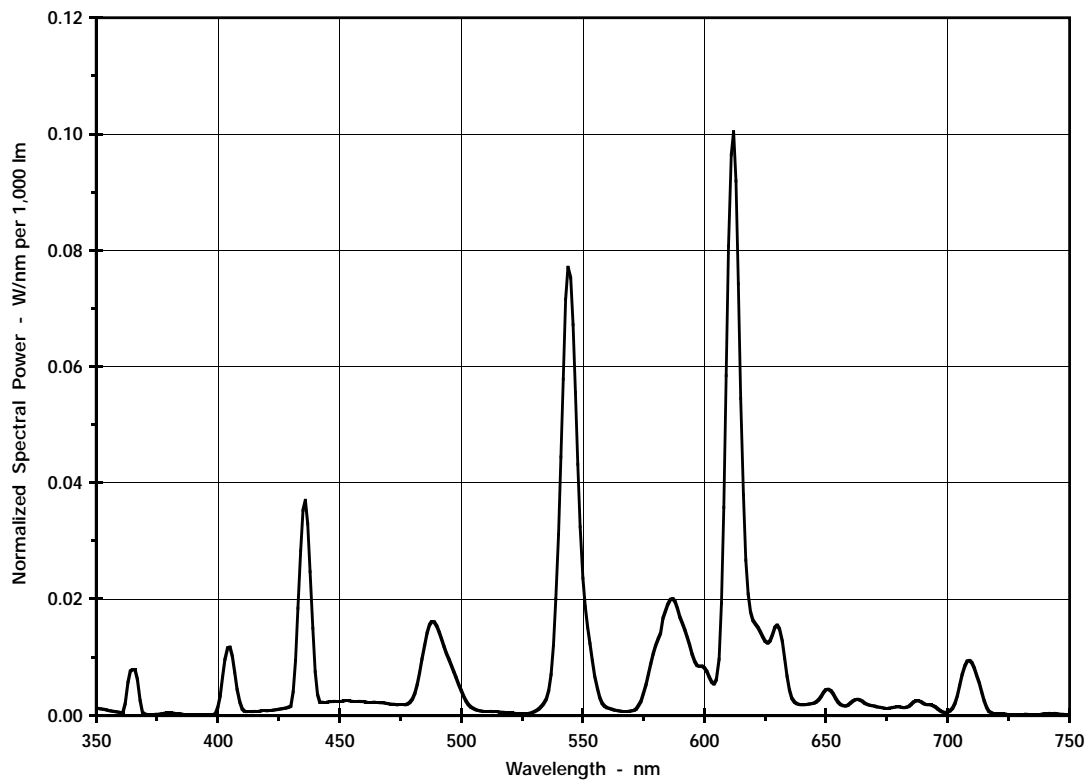
CCT: 4100K
CRI: 82



Octron® 850

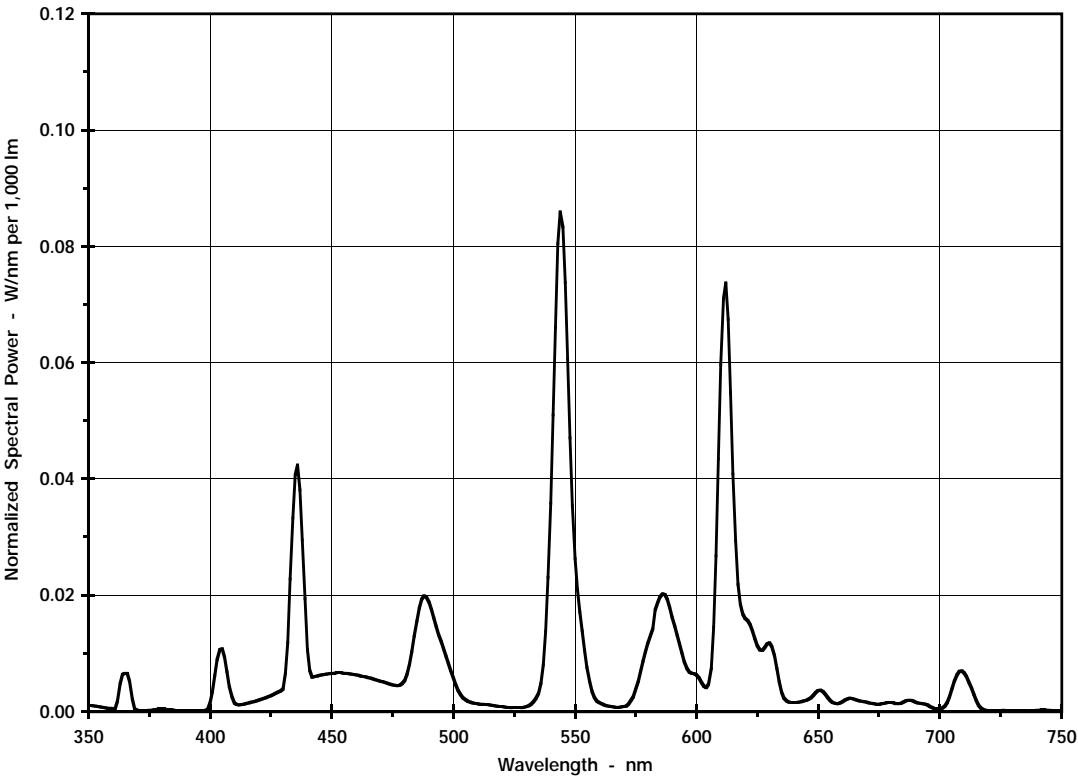
CCT: 5000K
CRI: 80





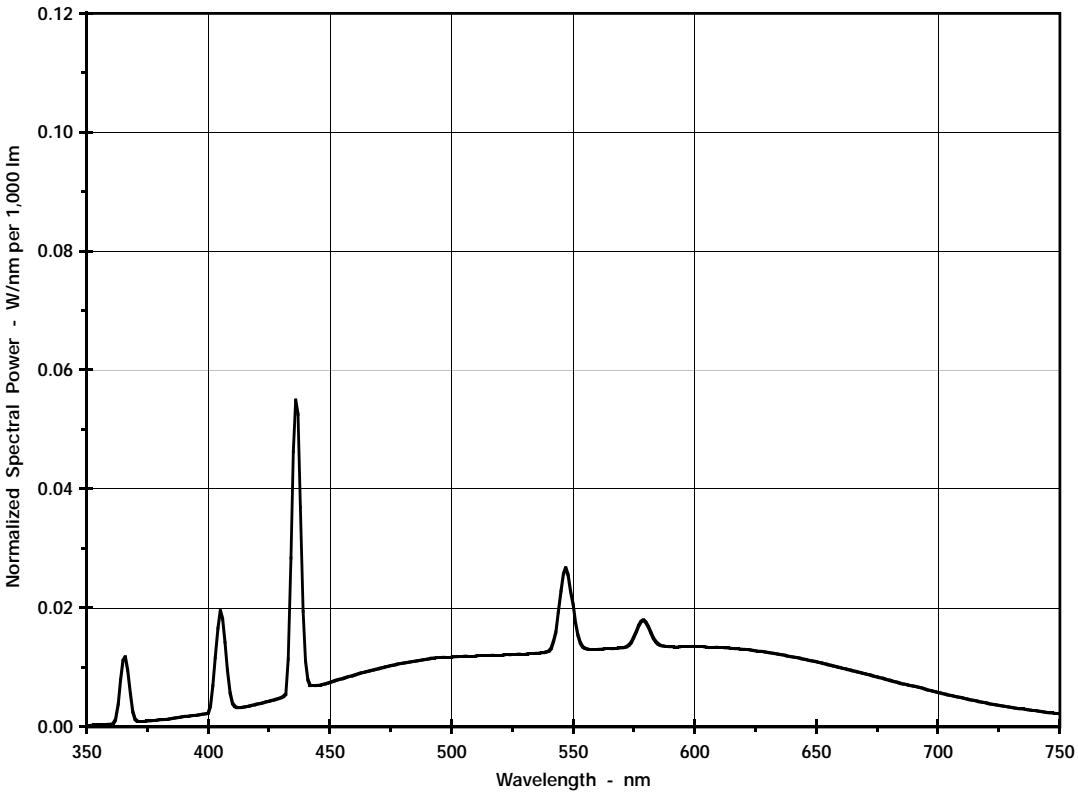
Octron® 841/XP

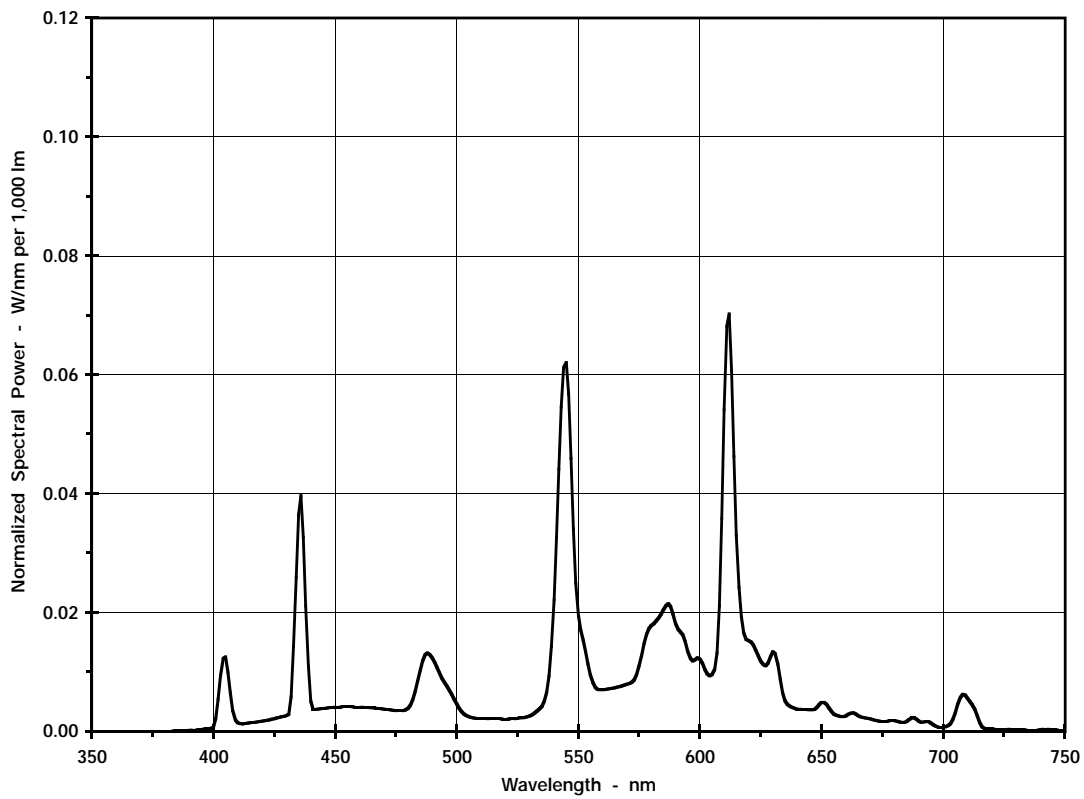
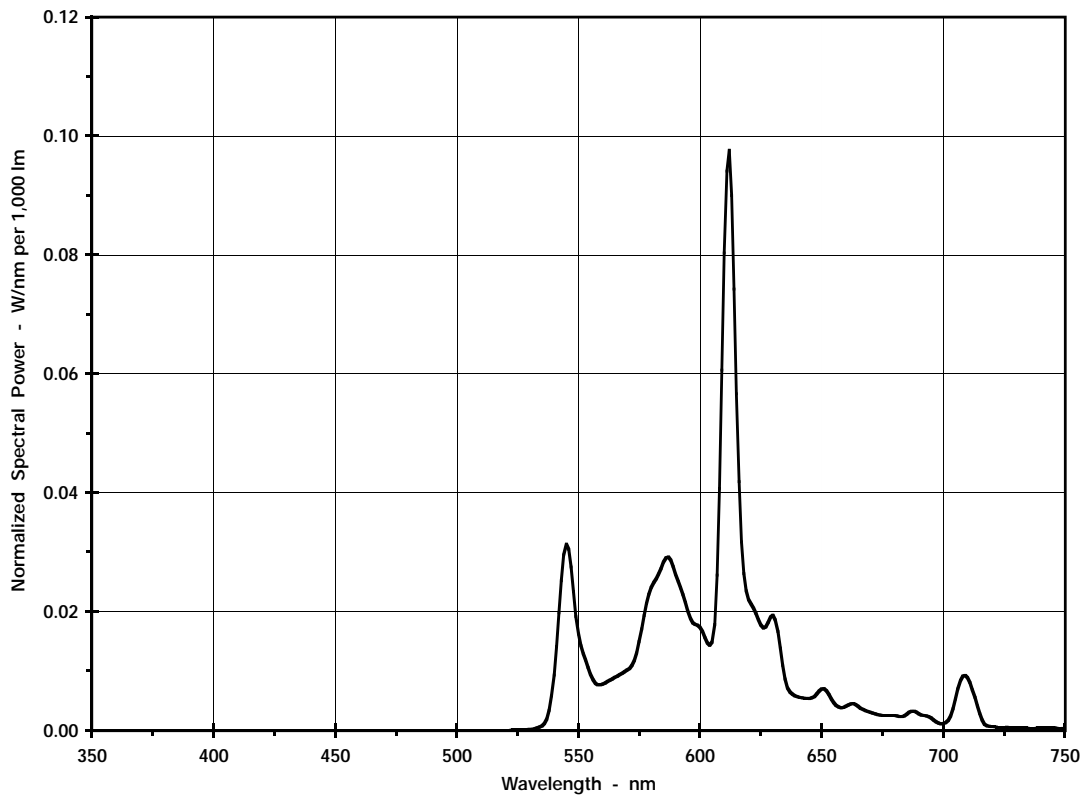
CCT: 4100K
CRI: 85



Octron® 950

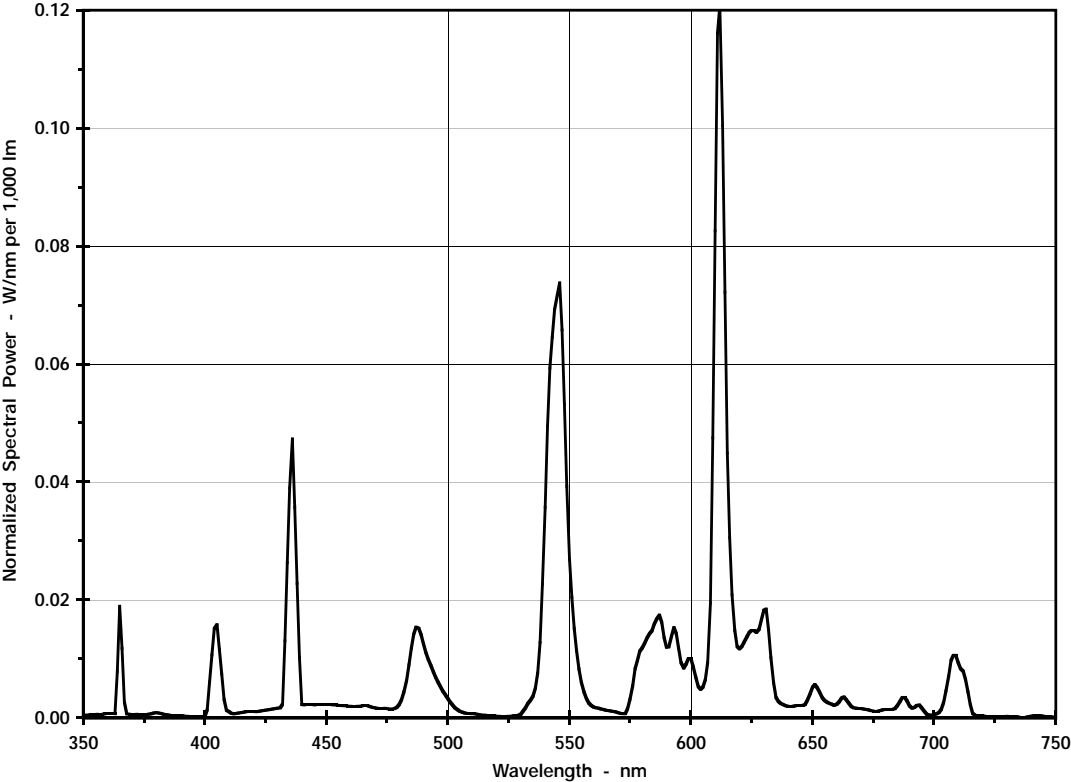
CCT: 5000K
CRI: 90





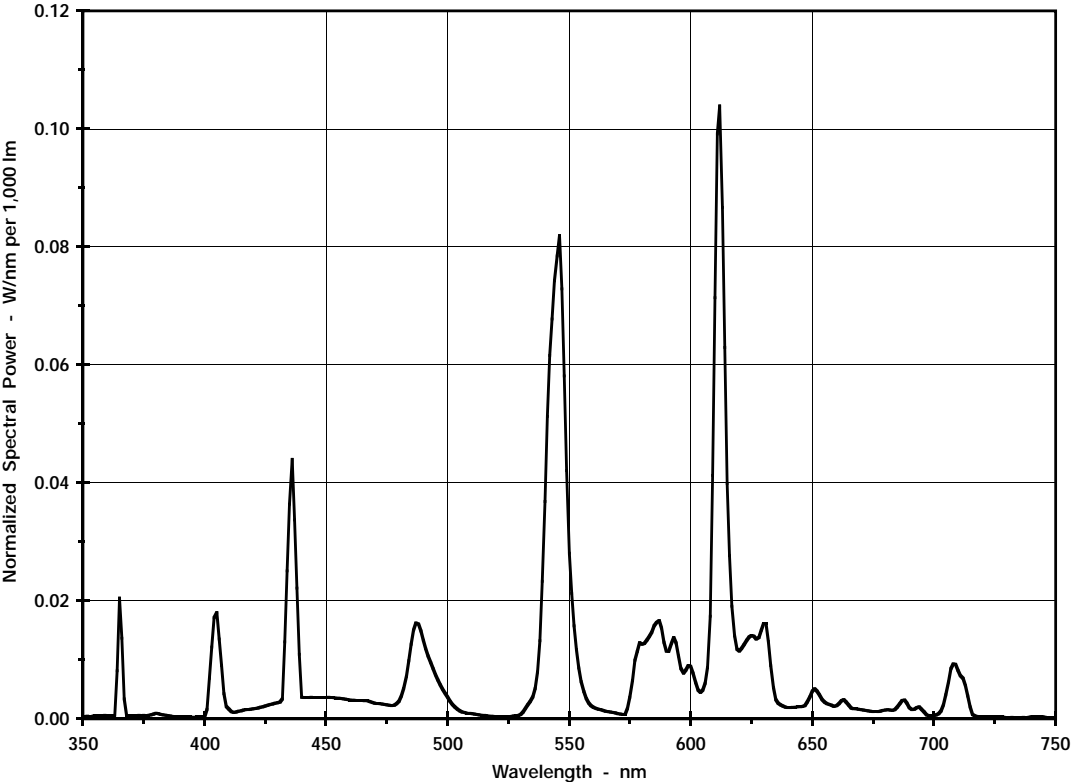
Pentron® 830

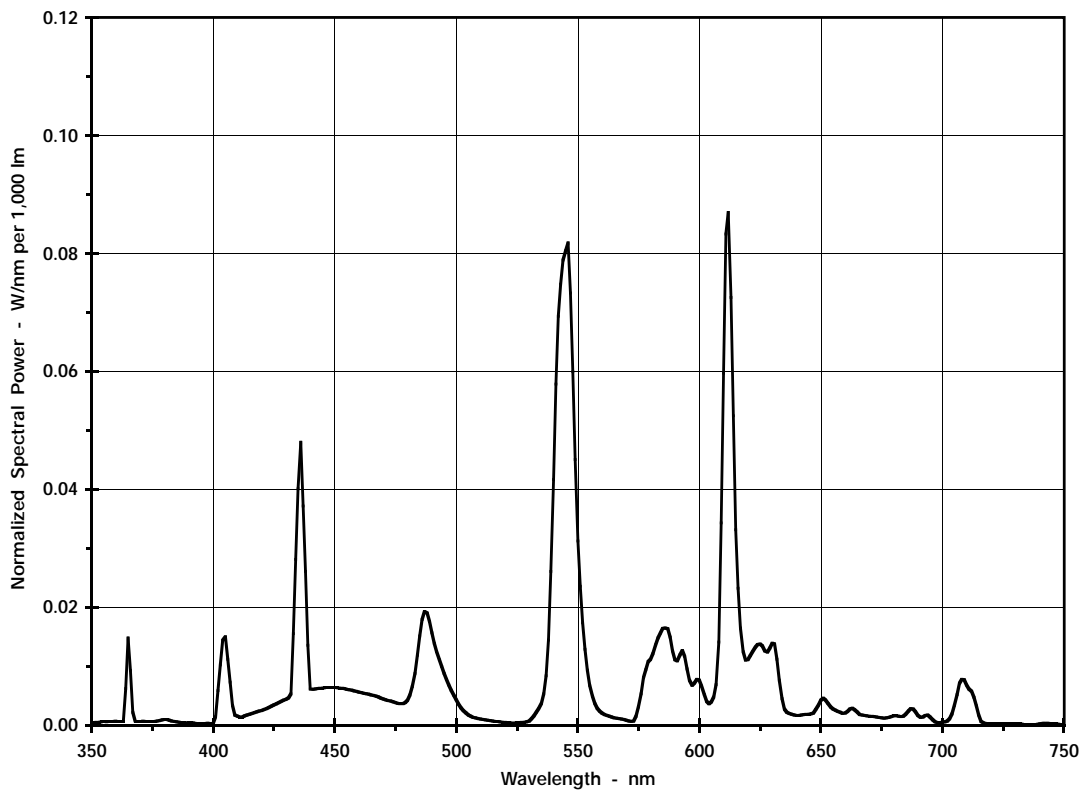
CCT: 3000K
CRI: 82



Pentron® 835

CCT: 3500K
CRI: 82





Pentron® 841

CCT: 4100K
CRI: 82

Fluorescent Lamps – Watts per 1,000 lumens

Wavelength Bands – nm Nominal Color	380-440 Violet	440-480 Blue	480-500 Blue-Green	500-530 Green	530-570 Yellow-Green	570-585 Yellow	585-620 Orange	620-750 Red	380-760 Visible	<400 Ultraviolet
WWX	0.45	0.09	0.06	0.17	0.59	0.26	0.63	1.47	3.71	0.09
WW	0.32	0.13	0.07	0.11	0.55	0.36	0.70	0.47	2.71	0.10
CWX	0.54	0.25	0.15	0.28	0.60	0.24	0.54	1.14	3.74	0.14
CW	0.43	0.26	0.14	0.21	0.62	0.31	0.55	0.37	2.88	0.11
D	0.61	0.50	0.26	0.35	0.62	0.27	0.44	0.33	3.37	0.16
DX	0.59	0.46	0.28	0.42	0.62	0.21	0.41	0.85	3.84	0.14
DWW, D30, D730	0.29	0.12	0.13	0.08	0.62	0.24	0.81	0.47	2.78	0.11
D35, D735	0.31	0.16	0.15	0.10	0.64	0.25	0.74	0.44	2.79	0.11
DCW, D41, D741	0.38	0.25	0.18	0.15	0.68	0.24	0.62	0.37	2.87	0.13
D830	0.29	0.14	0.17	0.06	0.67	0.17	0.90	0.47	2.86	0.12
D835	0.32	0.18	0.17	0.08	0.73	0.16	0.78	0.43	2.86	0.12
D841	0.34	0.29	0.24	0.09	0.75	0.15	0.72	0.39	2.97	0.10
DSGN50* *	0.48	0.35	0.23	0.36	0.60	0.23	0.47	0.97	3.69	0.13
D865	0.45	0.51	0.28	0.24	0.76	0.15	0.54	0.29	3.21	0.08
GRO	0.89	1.01	0.39	0.40	0.54	0.15	0.24	2.72	6.34	0.14
GRO/WS	0.64	0.33	0.14	0.20	0.54	0.24	0.64	1.59	4.32	0.14
IF	0.20	0.10	0.08	0.21	0.56	0.25	0.60	1.76	3.76	0.04

Octron® Fluorescent Lamps – Watts per 1,000 lumens

Wavelength Bands – nm Nominal Color	380-440 Violet	440-480 Blue	480-500 Blue-Green	500-530 Green	530-570 Yellow-Green	570-585 Yellow	585-620 Orange	620-750 Red	380-760 Visible	<400 Ultraviolet
730	0.29	0.10	0.15	0.06	0.66	0.21	0.86	0.45	2.77	0.12
735	0.32	0.17	0.18	0.08	0.69	0.21	0.76	0.40	2.81	0.12
741	0.38	0.24	0.20	0.13	0.71	0.22	0.66	0.37	2.90	0.12
750	0.43	0.33	0.27	0.11	0.78	0.18	0.61	0.32	3.02	0.12
765	0.45	0.52	0.33	0.11	0.82	0.14	0.55	0.29	3.22	0.08
827	0.29	0.04	0.18	0.02	0.68	0.12	0.96	0.45	2.76	0.16
830	0.26	0.09	0.19	0.04	0.70	0.14	0.94	0.45	2.81	0.12
835	0.32	0.16	0.21	0.06	0.73	0.16	0.81	0.40	2.85	0.11
841	0.32	0.24	0.25	0.06	0.78	0.15	0.72	0.36	2.89	0.11
850	0.37	0.36	0.29	0.07	0.82	0.14	0.65	0.32	3.02	0.11
830/XP	0.30	0.10	0.21	0.03	0.71	0.12	0.98	0.43	2.86	0.15
835/XP	0.31	0.15	0.23	0.03	0.76	0.11	0.88	0.39	2.87	0.14
841/XP	0.36	0.24	0.26	0.05	0.80	0.12	0.77	0.36	2.95	0.12
950*	0.48	0.35	0.23	0.36	0.60	0.23	0.47	0.97	3.69	0.14
GOLD	0.00	0.00	0.00	0.00	0.44	0.28	1.21	0.63	2.56	0.00
735/GUARDED	0.29	0.15	0.18	0.07	0.68	0.21	0.80	0.41	2.80	0.00

Pentron® Fluorescent Lamps – Watts per 1,000 lumens

Wavelength Bands – nm Nominal Color	380-440 Violet	440-480 Blue	480-500 Blue-Green	500-530 Green	530-570 Yellow-Green	570-585 Yellow	585-620 Orange	620-750 Red	380-760 Visible	<400 Ultraviolet
830	0.30	0.08	0.17	0.02	0.76	0.11	0.94	0.45	2.83	0.07
835	0.32	0.12	0.19	0.03	0.80	0.12	0.83	0.41	2.82	0.07
841	0.35	0.21	0.22	0.03	0.86	0.11	0.72	0.38	2.88	0.07

Note: These values are derived from tests of typical 48 inch lamps and do not constitute specifications.

* Same as Octron® 950

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