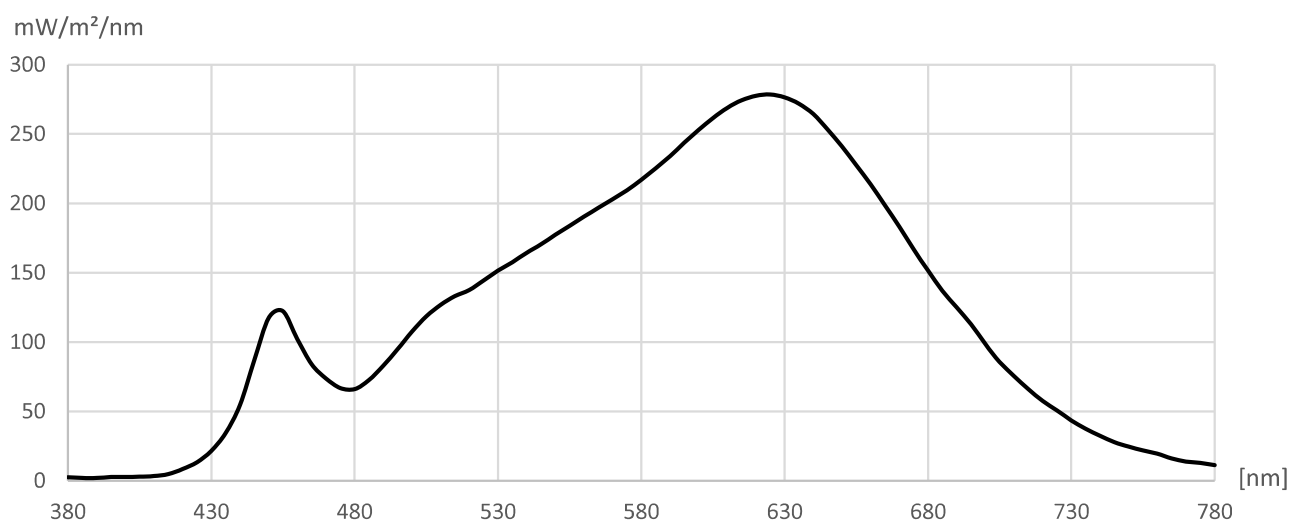


Measurement protocol

th.mann

Test object: Varytec
LED Theater Spot 100
Item 414220 / @ 1 m / Zoom narrow

Measurement file: 414220_1m_narrow.CS
Date of measurement: 07.03.2018
Time of measurement: 17:19:29



R1 = 94,0	Ra = 93,9	Illuminance	13861,03 lx	CIE1931
R2 = 97,0	Re = 91,4	Ee	48,748 W/m ²	x = 0,4392
R3 = 98,6	GAI = 55,3	LER	284,3 lm/W	y = 0,4058
R4 = 93,9				
R5 = 93,7		correlated color temperature (CCT)	2965 K	CIE1976
R6 = 96,4		Duv	0,0004	u' = 0,2513
R7 = 93,1				v' = 0,5224
R8 = 84,2		Saturation	53,5 %	
R9 = 64,7				CIE1960
R10 = 92,2		Dominant wavelength	582 nm	u = 0,2513
R11 = 94,9		Peak wavelength	625 nm	v = 0,3483
R12 = 84,0				
R13 = 94,9		Flicker frequency	10032,2 Hz	TM30
R14 = 98,7		Percent Flicker	f > 400 Hz %	Rf = 92,0
R15 = 90,3		Flicker index	f > 400 Hz	Rg = 99,0

[nm]	mW/m ² /nm	[nm]	mW/m ² /nm	[nm]	mW/m ² /nm	[nm]	mW/m ² /nm	[nm]	mW/m ² /nm	[nm]	mW/m ² /nm	[nm]	mW/m ² /nm
380	2,57	440	54,50	500	107,48	560	190,46	620	277,66	680	151,72	740	32,39
385	1,99	445	86,96	505	118,51	565	196,67	625	278,49	685	137,13	745	27,80
390	2,00	450	117,43	510	126,84	570	203,00	630	276,39	690	125,04	750	24,61
395	2,65	455	122,24	515	133,06	575	209,45	635	271,79	695	112,87	755	21,73
400	2,68	460	102,35	520	137,54	580	216,99	640	264,35	700	98,57	760	19,49
405	2,89	465	84,03	525	144,37	585	225,34	645	253,15	705	85,71	765	16,14
410	3,31	470	73,74	530	151,50	590	234,02	650	241,07	710	75,63	770	13,88
415	4,78	475	66,85	535	157,62	595	243,66	655	227,54	715	66,14	775	12,84
420	8,40	480	66,10	540	164,29	600	252,88	660	213,78	720	57,60	780	11,23
425	13,38	485	72,46	545	170,35	605	261,41	665	198,54	725	50,57		
430	21,47	490	82,94	550	177,33	610	268,91	670	183,06	730	43,60		
435	34,35	495	94,81	555	183,78	615	274,36	675	166,84	735	37,59		

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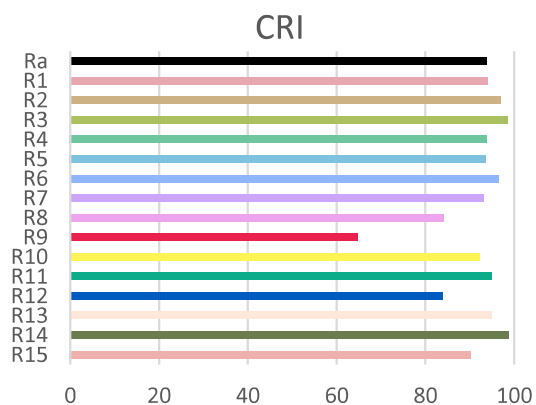
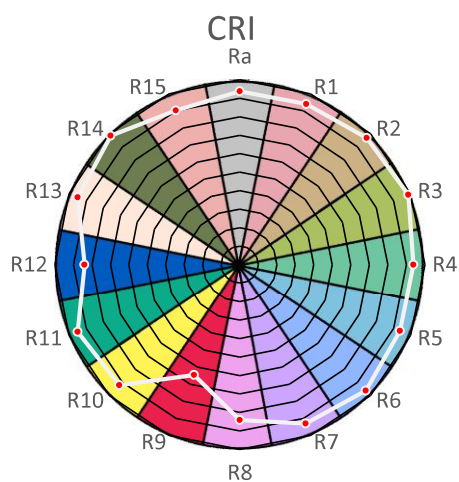
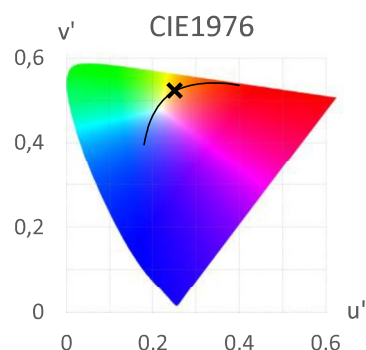
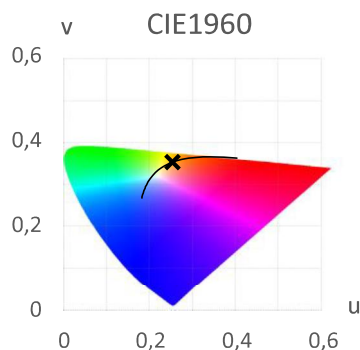
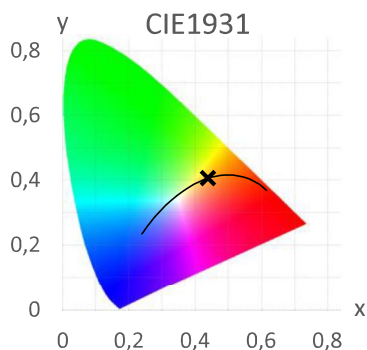
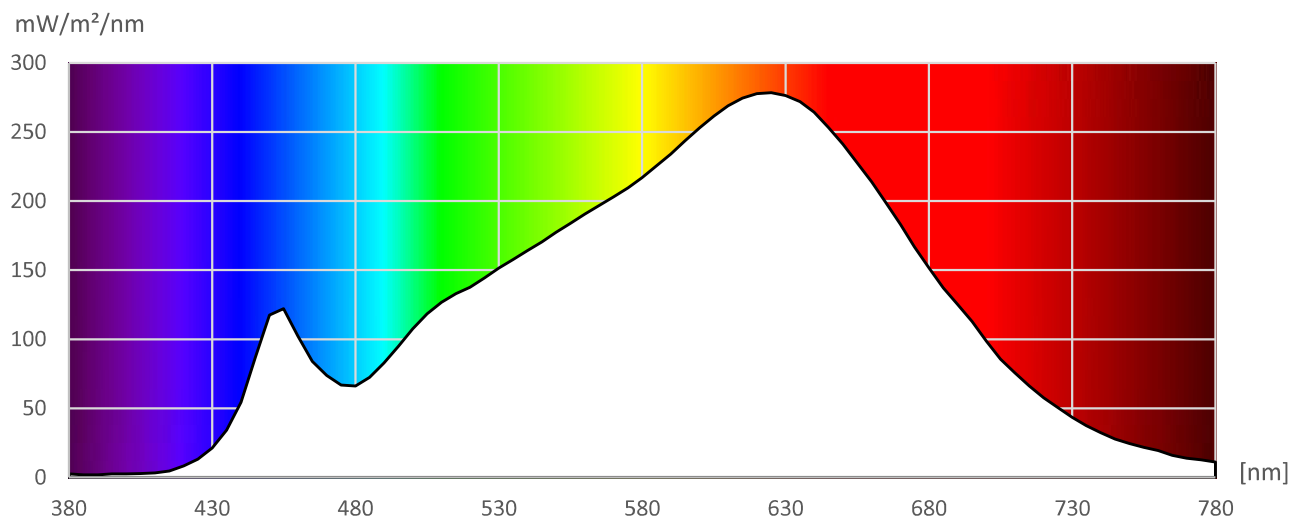
First, last name of inspector

Measurement protocol

th•mann

Test object: Varytec
LED Theater Spot 100
Item 414220 / @ 1 m / Zoom narrow

Measurement file: 414220_1m_narro
Date of measurement: 07.03.2018
Time of measurement: 17:19:29



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Burgebrach, 07.03.2018

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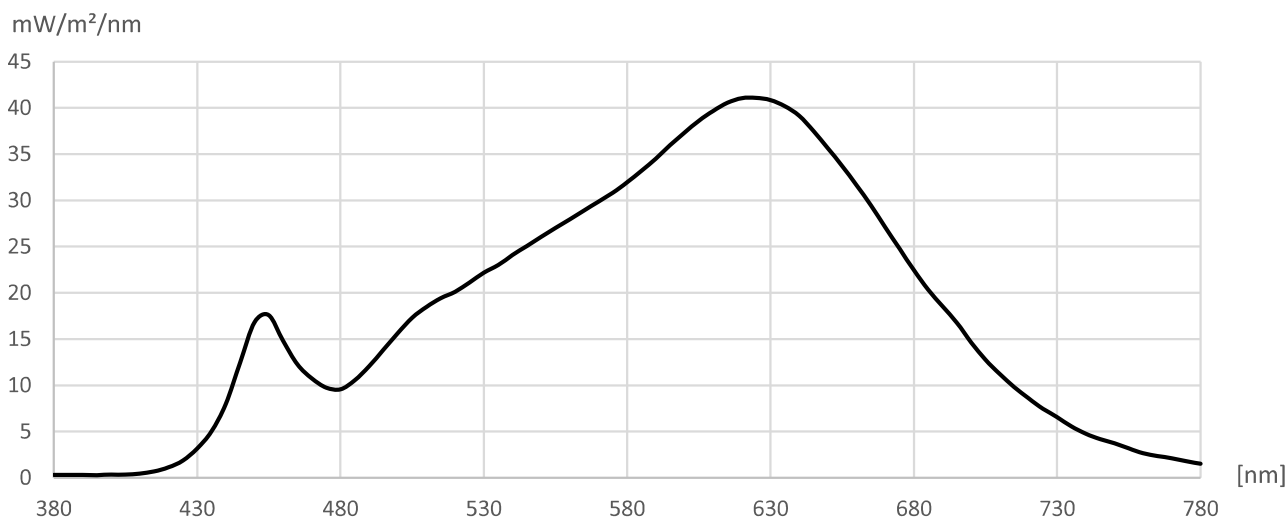
First, last name of inspector

Measurement protocol

th.mann

Test object: Varytec
LED Theater Spot 100
Item 414220 / @ 3 m / Zoom narrow

Measurement file: 414220_3m_narrow.CS
Date of measurement: 07.03.2018
Time of measurement: 17:20:06



R1 = 93,9	Ra = 93,8
R2 = 97,0	Re = 91,3
R3 = 98,6	GAI = 54,7
R4 = 93,9	
R5 = 93,6	
R6 = 96,4	
R7 = 93,1	
R8 = 84,1	
R9 = 64,5	
R10 = 92,1	
R11 = 94,8	
R12 = 84,0	
R13 = 94,8	
R14 = 98,7	
R15 = 90,3	

Illuminance	2038,3 lx
Ee	7,173 W/m ²
LER	284,2 lm/W
correlated color temperature (CCT)	2947 K
Duv	0,0004
Saturation	54,2 %
Dominant wavelength	582 nm
Peak wavelength	623 nm
Flicker frequency	100 Hz
Percent Flicker	2,7 %
Flicker index	0,007

CIE1931
x = 0,4408
y = 0,4064
CIE1976
u' = 0,2520
v' = 0,5229
CIE1960
u = 0,2520
v = 0,3486
TM30
Rf = 92,0
Rg = 98,9

[nm]	mW/m ² /nm	[nm]	mW/m ² /nm	[nm]	mW/m ² /nm	[nm]	mW/m ² /nm	[nm]	mW/m ² /nm	[nm]	mW/m ² /nm	[nm]	mW/m ² /nm
380	0,29	440	7,98	500	15,65	560	27,95	620	41,06	680	22,48	740	4,76
385	0,31	445	12,49	505	17,30	565	28,91	625	41,09	685	20,34	745	4,18
390	0,29	450	16,83	510	18,49	570	29,86	630	40,85	690	18,54	750	3,72
395	0,28	455	17,59	515	19,41	575	30,83	635	40,19	695	16,77	755	3,16
400	0,35	460	14,81	520	20,12	580	31,94	640	39,14	700	14,63	760	2,65
405	0,33	465	12,25	525	21,11	585	33,20	645	37,50	705	12,77	765	2,36
410	0,46	470	10,73	530	22,18	590	34,53	650	35,65	710	11,22	770	2,10
415	0,68	475	9,74	535	23,02	595	35,96	655	33,73	715	9,82	775	1,79
420	1,12	480	9,57	540	24,08	600	37,32	660	31,65	720	8,59	780	1,50
425	1,87	485	10,54	545	25,06	605	38,61	665	29,48	725	7,47		
430	3,15	490	12,04	550	26,03	610	39,67	670	27,09	730	6,55		
435	4,99	495	13,84	555	27,01	615	40,56	675	24,77	735	5,56		

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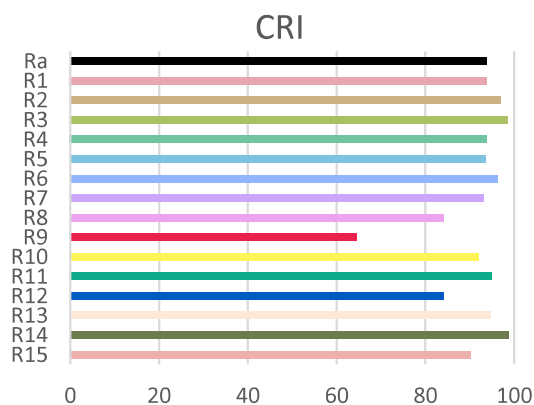
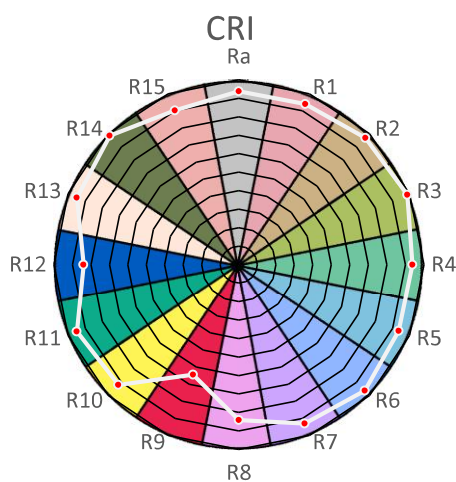
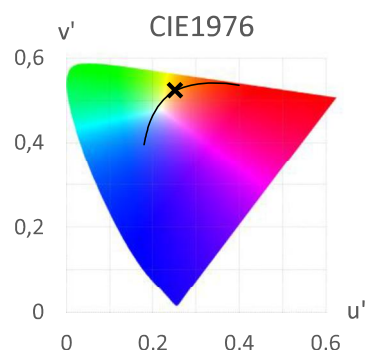
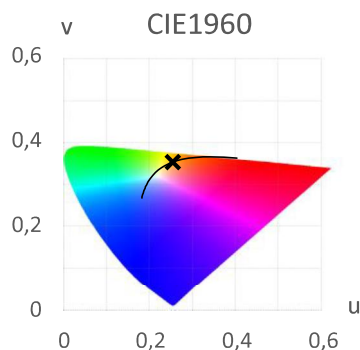
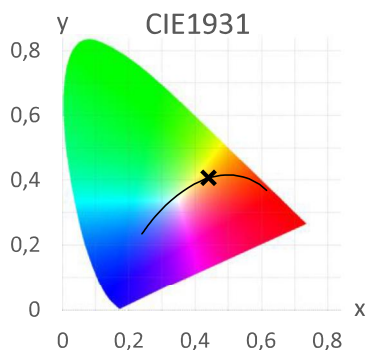
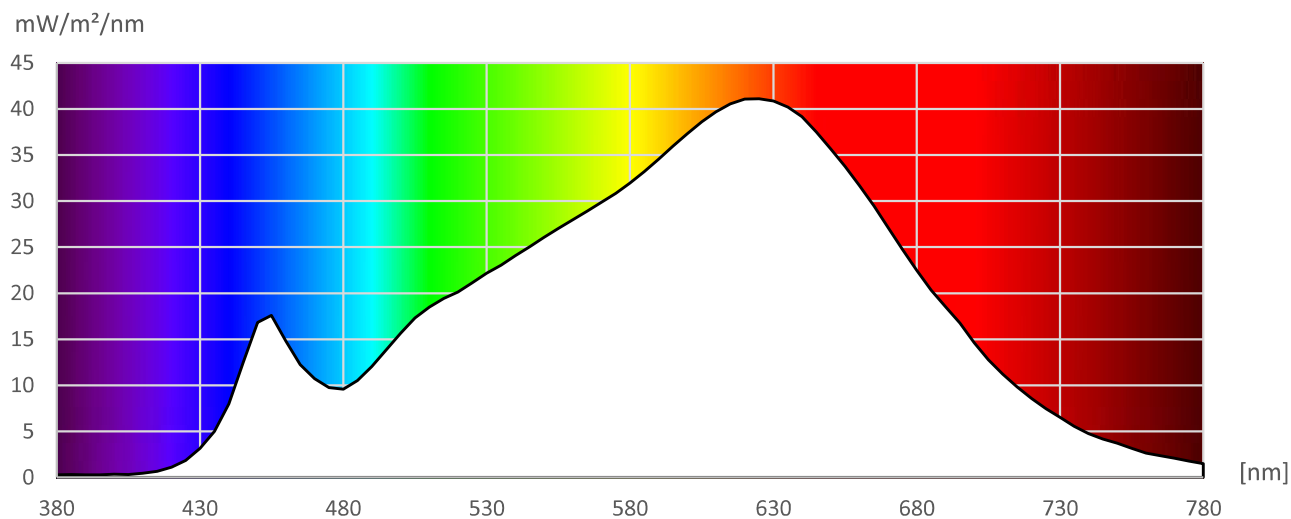
First, last name of inspector

Measurement protocol

th•mann

Test object: Varytec
LED Theater Spot 100
Item 414220 / @ 3 m / Zoom narrow

Measurement file: 414220_3m_narro
Date of measurement: 07.03.2018
Time of measurement: 17:20:06



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Burgebrach, 07.03.2018

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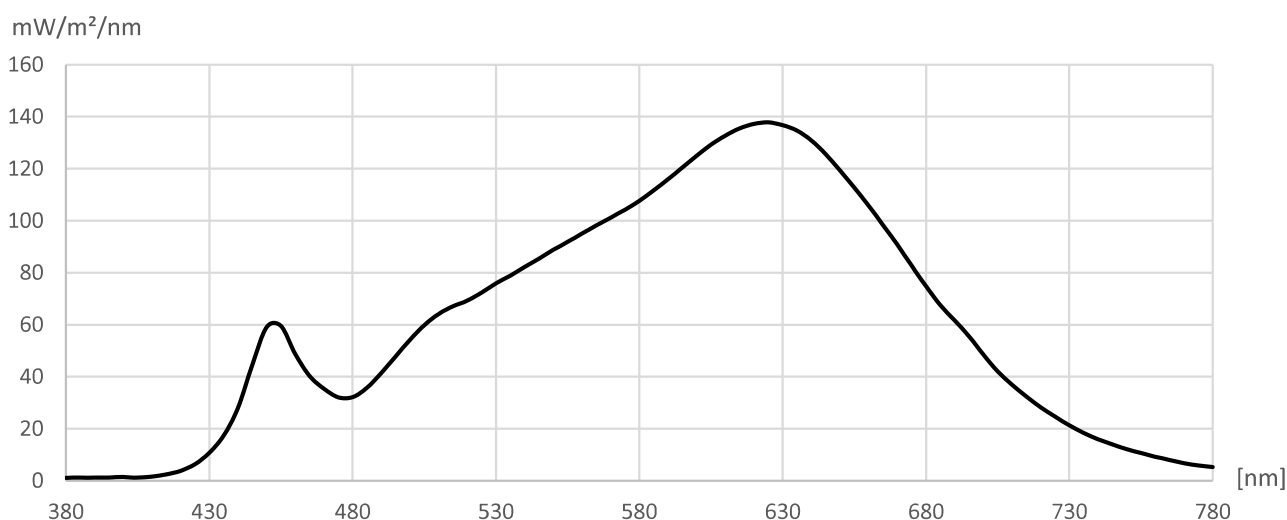
First, last name of inspector

Measurement protocol

th.mann

Test object: Varytec
LED Theater Spot 100
Item 414220 / @ 1 m / Zoom wide

Measurement file: 414220_1m_wide.CSV
Date of measurement: 07.03.2018
Time of measurement: 17:17:41



R1 = 93,8	Ra = 93,8	Illuminance	6899,11 lx	CIE1931
R2 = 96,7	Re = 91,2	Ee	24,166 W/m ²	x = 0,4387
R3 = 98,4	GAI = 54,9	LER	285,5 lm/W	y = 0,4071
R4 = 94,0				
R5 = 93,5		correlated color temperature (CCT)	2983 K	CIE1976
R6 = 96,1		Duv	0,001	u' = 0,2504
R7 = 93,5				v' = 0,5228
R8 = 84,4		Saturation	53,6 %	
R9 = 64,7				CIE1960
R10 = 91,5		Dominant wavelength	582 nm	u = 0,2504
R11 = 95,0		Peak wavelength	625 nm	v = 0,3486
R12 = 83,6				
R13 = 94,6		Flicker frequency	10023,4 Hz	TM30
R14 = 98,5		Percent Flicker	f > 400 Hz %	Rf = 92,2
R15 = 90,1		Flicker index	f > 400 Hz	Rg = 98,9

[nm]	mW/m ² /nm	[nm]	mW/m ² /nm	[nm]	mW/m ² /nm	[nm]	mW/m ² /nm	[nm]	mW/m ² /nm	[nm]	mW/m ² /nm	[nm]	mW/m ² /nm
380	1,14	440	27,98	500	54,21	560	95,03	620	137,18	680	74,89	740	15,99
385	1,17	445	44,63	505	59,87	565	98,15	625	137,80	685	67,54	745	14,01
390	1,15	450	59,08	510	64,15	570	101,14	630	136,71	690	61,64	750	12,08
395	1,23	455	59,51	515	67,08	575	104,22	635	134,65	695	55,57	755	10,63
400	1,39	460	48,73	520	69,24	580	107,61	640	130,87	700	48,51	760	9,25
405	1,18	465	40,28	525	72,40	585	111,65	645	125,55	705	42,16	765	7,98
410	1,62	470	35,32	530	75,89	590	115,91	650	119,35	710	37,00	770	6,72
415	2,45	475	32,08	535	78,92	595	120,42	655	112,73	715	32,45	775	5,86
420	3,84	480	32,17	540	82,18	600	124,91	660	105,82	720	28,27	780	5,30
425	6,37	485	35,72	545	85,36	605	129,21	665	98,33	725	24,62		
430	10,71	490	41,43	550	88,77	610	132,72	670	90,73	730	21,33		
435	17,29	495	47,82	555	91,82	615	135,50	675	82,65	735	18,46		

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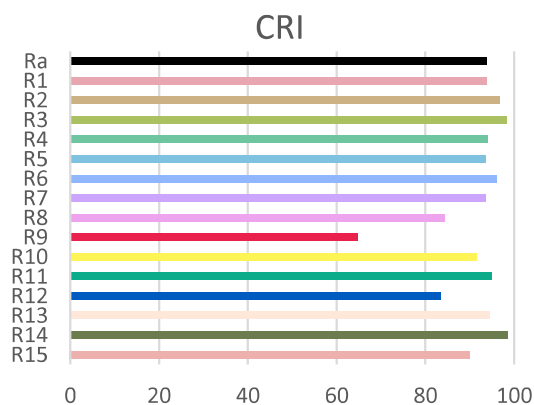
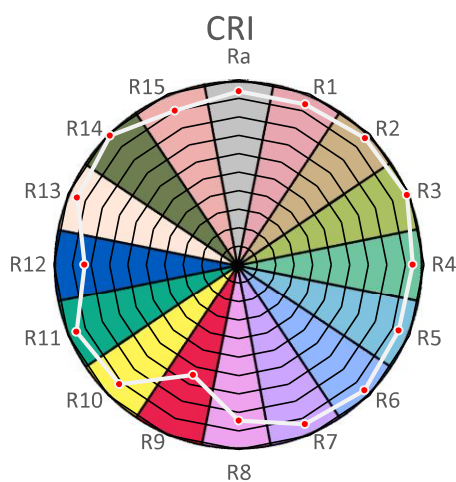
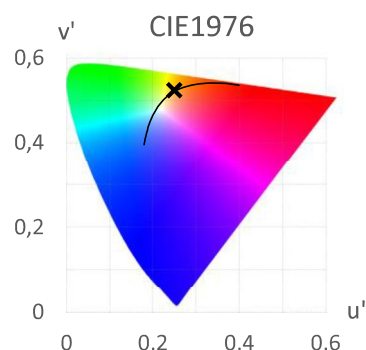
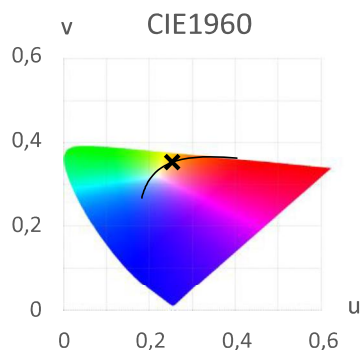
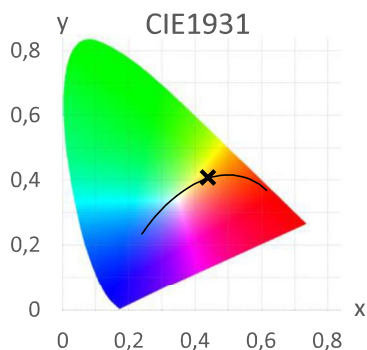
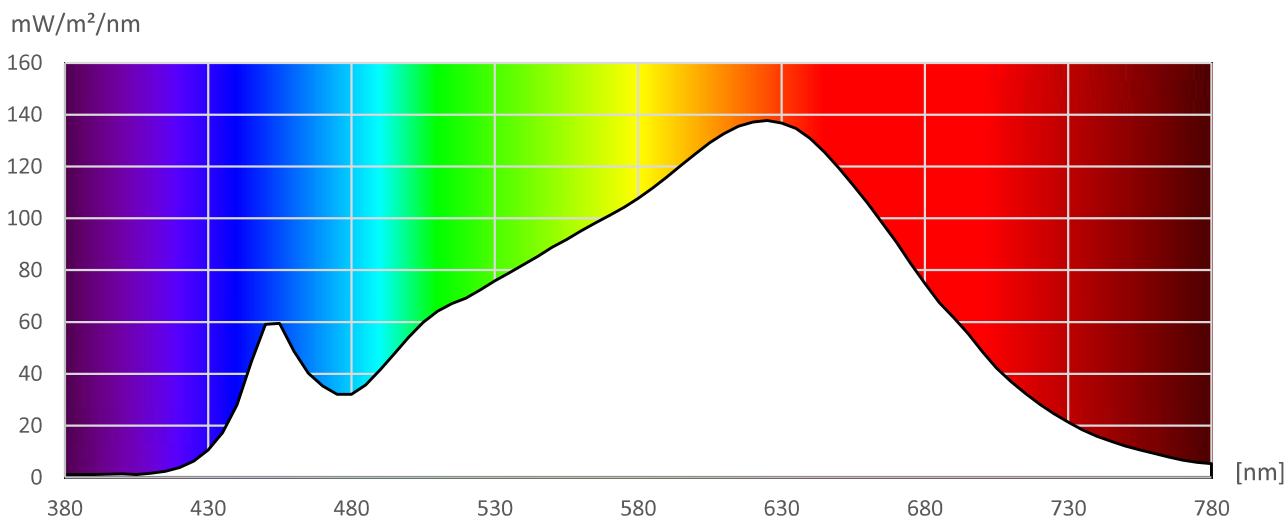
First, last name of inspector

Measurement protocol

th•mann

Test object: Varytec
LED Theater Spot 100
Item 414220 / @ 1 m / Zoom wide

Measurement file: 414220_1m_wide.
Date of measurement: 07.03.2018
Time of measurement: 17:17:41



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Burgebrach, 07.03.2018

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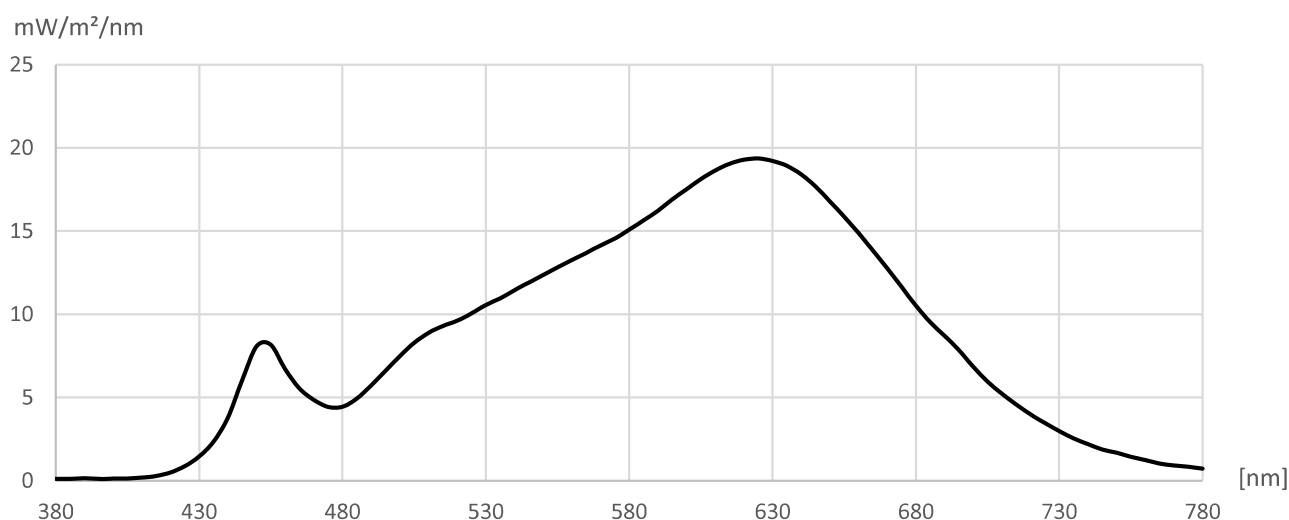
First, last name of inspector

Measurement protocol

th.mann

Test object: Varytec
LED Theater Spot 100
Item 414220 / @ 3 m / Zoom wide

Measurement file: 414220_3m_wide.CSV
Date of measurement: 07.03.2018
Time of measurement: 17:17:58



R1 = 93,8	Ra = 93,8	Illuminance	963,77 lx	CIE1931
R2 = 96,6	Re = 91,2	Ee	3,375 W/m ²	x = 0,4405
R3 = 98,4	GAI = 54,1	LER	285,5 lm/W	y = 0,4079
R4 = 94,0				
R5 = 93,4		correlated color temperature (CCT)	2961 K	CIE1976
R6 = 96,1		Duv	0,001	u' = 0,2512
R7 = 93,5				v' = 0,5234
R8 = 84,4		Saturation	54,4 %	
R9 = 64,5				CIE1960
R10 = 91,4		Dominant wavelength	582 nm	u = 0,2512
R11 = 95,0		Peak wavelength	625 nm	v = 0,3489
R12 = 83,5				
R13 = 94,5		Flicker frequency	% < 2.5 Hz	TM30
R14 = 98,5		Percent Flicker	< 2.5 %	Rf = 92,1
R15 = 90,0		Flicker index	% < 2.5	Rg = 98,8

[nm]	mW/m ² /nm	[nm]	mW/m ² /nm	[nm]	mW/m ² /nm	[nm]	mW/m ² /nm	[nm]	mW/m ² /nm	[nm]	mW/m ² /nm	[nm]	mW/m ² /nm
380	0,12	440	3,78	500	7,48	560	13,25	620	19,28	680	10,54	740	2,20
385	0,11	445	6,04	505	8,28	565	13,69	625	19,37	685	9,53	745	1,88
390	0,16	450	8,07	510	8,88	570	14,13	630	19,22	690	8,71	750	1,68
395	0,11	455	8,17	515	9,29	575	14,55	635	18,92	695	7,85	755	1,44
400	0,13	460	6,71	520	9,61	580	15,08	640	18,41	700	6,84	760	1,25
405	0,13	465	5,54	525	10,05	585	15,64	645	17,67	705	5,96	765	1,04
410	0,19	470	4,86	530	10,57	590	16,22	650	16,80	710	5,24	770	0,92
415	0,28	475	4,44	535	10,97	595	16,89	655	15,87	715	4,59	775	0,84
420	0,50	480	4,44	540	11,45	600	17,51	660	14,89	720	3,99	780	0,72
425	0,88	485	4,93	545	11,91	605	18,12	665	13,83	725	3,47		
430	1,45	490	5,72	550	12,36	610	18,64	670	12,76	730	3,00		
435	2,34	495	6,61	555	12,83	615	19,05	675	11,64	735	2,55		

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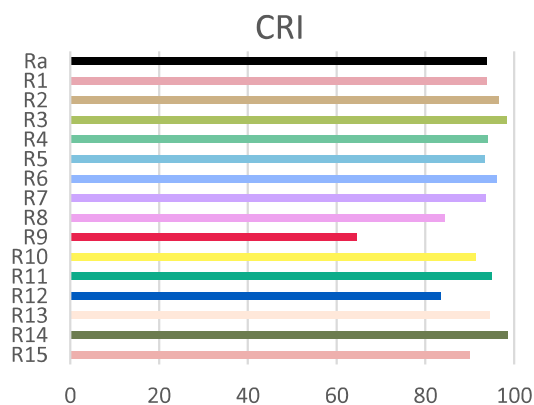
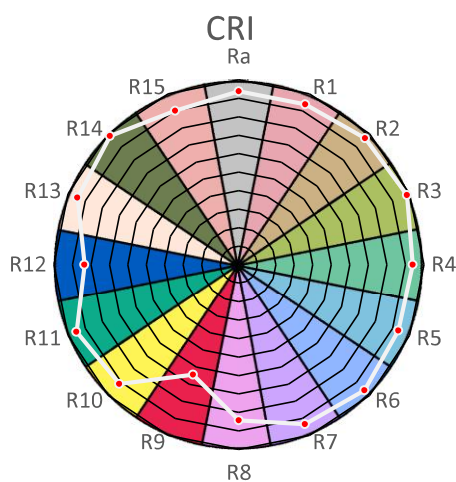
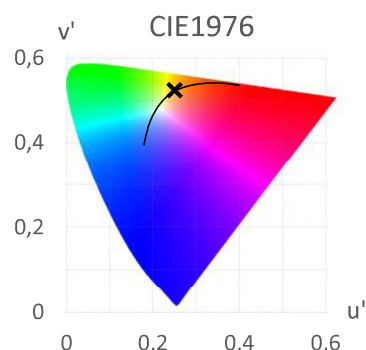
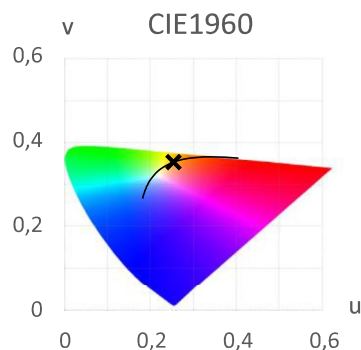
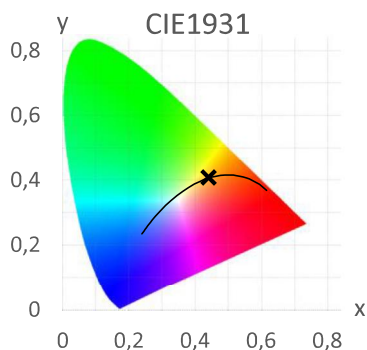
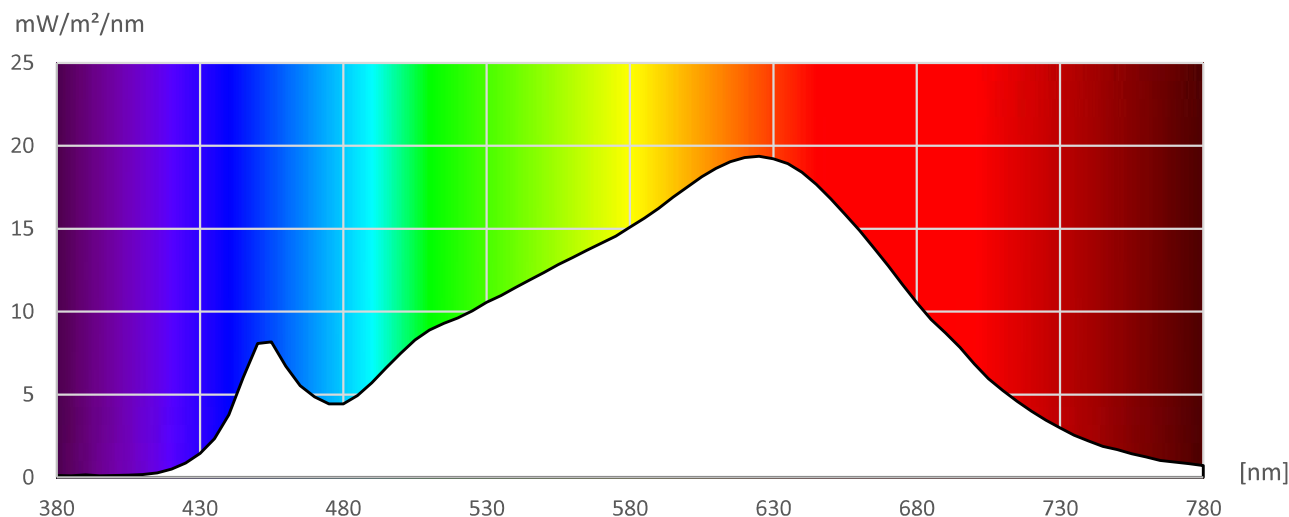
First, last name of inspector

Measurement protocol

th•mann

Test object: Varytec
LED Theater Spot 100
Item 414220 / @ 3 m / Zoom wide

Measurement file: 414220_3m_wide.
Date of measurement: 07.03.2018
Time of measurement: 17:17:58



Thomann GmbH
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Burgebrach, 07.03.2018

Sebastian Laske

First, last name of inspector