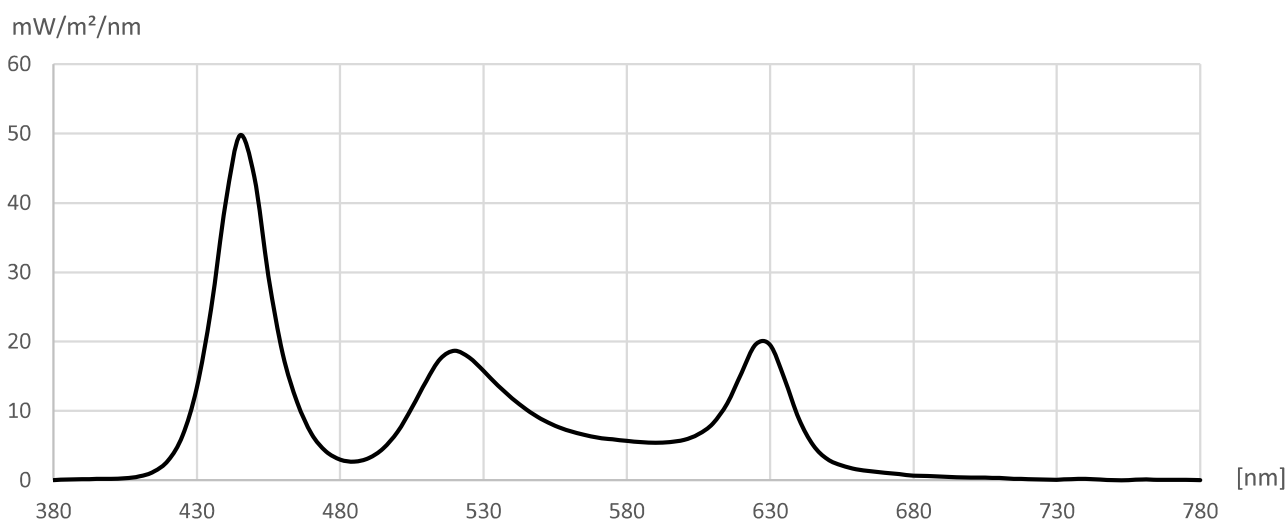


Measurement protocol

th.mann

Test object: Stairville
LED Par 46 COB RGBW 20W
Item 333906_375060 / @ 1 m / all

Measurement file: 333906_375060_all_1n
Date of measurement: 30.03.2019
Time of measurement: 16:05:20



R1 = 90,9	Ra = 80,8
R2 = 85,8	Re = 78,2
R3 = 60,1	GAI = 145,7
R4 = 80,3	
R5 = 89,8	
R6 = 74,0	
R7 = 77,7	
R8 = 87,7	
R9 = 81,2	
R10 = 51,5	
R11 = 70,4	
R12 = 68,0	
R13 = 85,3	
R14 = 78,2	
R15 = 91,9	

Illuminance	717,86 lx
Ee	2,989 W/m²
LER	240,2 lm/W
correlated color temperature (CCT)	26773 K
Duv	-0,0166
Saturation	33,7 %
Dominant wavelength	463 nm
Peak wavelength	445 nm
Flicker frequency	% < 2.5 Hz
Percent Flicker	< 2.5 %
Flicker index	% < 2.5

CIE1931
x = 0,2649
y = 0,2389
CIE1976
u' = 0,1986
v' = 0,4028
CIE1960
u = 0,1986
v = 0,2686
TM30
Rf = 0,0
Rg = #####

[nm]	mW/m²/nm	[nm]	mW/m²/nm	[nm]	mW/m²/nm	[nm]	mW/m²/nm	[nm]	mW/m²/nm	[nm]	mW/m²/nm	[nm]	mW/m²/nm
380	0,01	440	39,85	500	6,98	560	7,09	620	15,50	680	0,67	740	0,20
385	0,12	445	49,73	505	10,46	565	6,56	625	19,59	685	0,61	745	0,09
390	0,13	450	43,79	510	14,31	570	6,13	630	19,50	690	0,52	750	0,00
395	0,18	455	29,47	515	17,51	575	5,89	635	14,62	695	0,44	755	0,02
400	0,20	460	18,24	520	18,66	580	5,67	640	8,84	700	0,39	760	0,12
405	0,29	465	11,28	525	17,70	585	5,48	645	5,06	705	0,36	765	0,07
410	0,57	470	6,69	530	15,77	590	5,39	650	3,05	710	0,32	770	0,05
415	1,25	475	4,17	535	13,64	595	5,51	655	2,13	715	0,20	775	0,06
420	2,85	480	2,97	540	11,82	600	5,84	660	1,56	720	0,17	780	0,02
425	6,46	485	2,70	545	10,20	605	6,63	665	1,29	725	0,11		
430	13,28	490	3,19	550	8,88	610	8,19	670	1,08	730	0,08		
435	24,70	495	4,58	555	7,85	615	11,09	675	0,88	735	0,17		

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Burgebrach, 04.04.2019

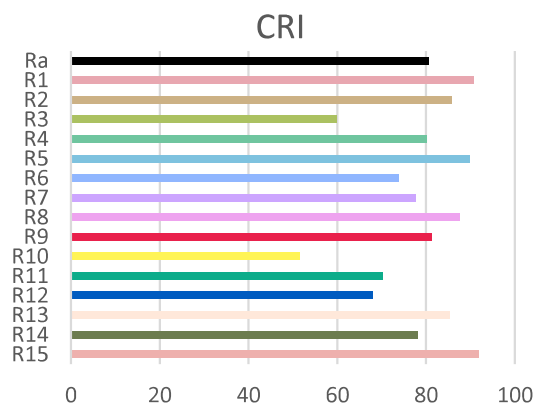
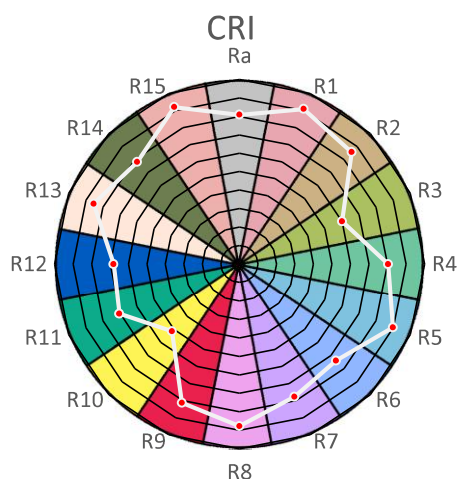
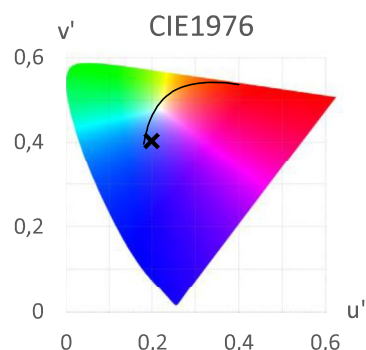
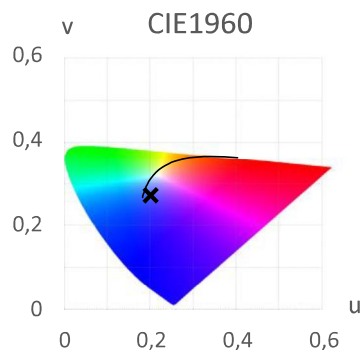
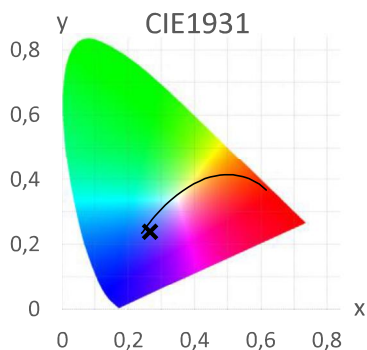
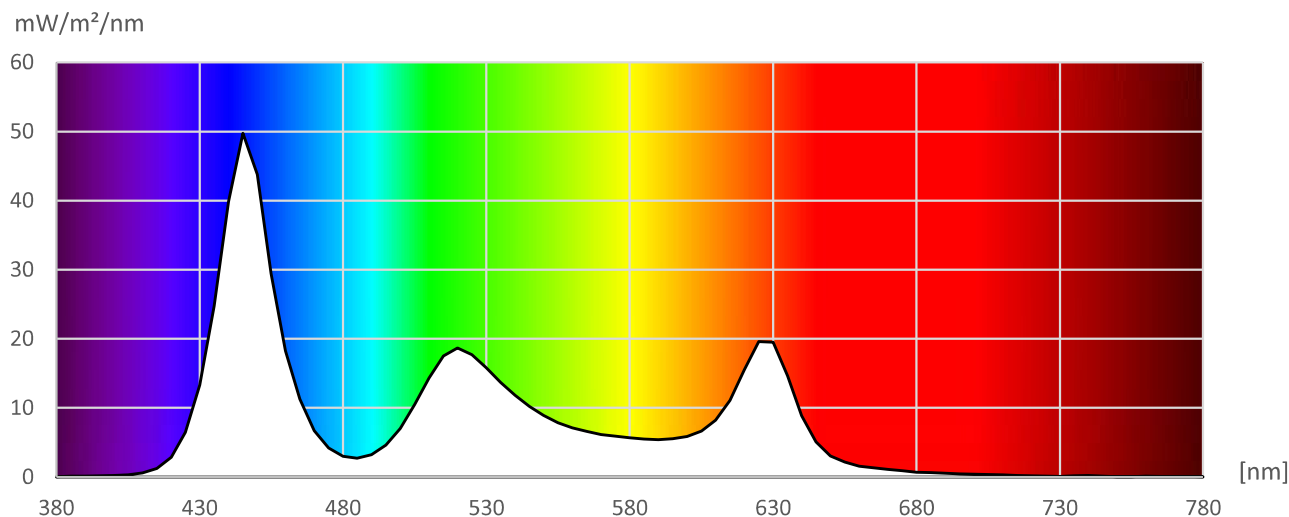
First, last name of inspector

Measurement protocol

th•mann

Test object: Stairville
LED Par 46 COB RGBW 20W
Item 333906_375060 / @ 1 m / all

Measurement file: 333906_375060_a
Date of measurement: 30.03.2019
Time of measurement: 16:05:20



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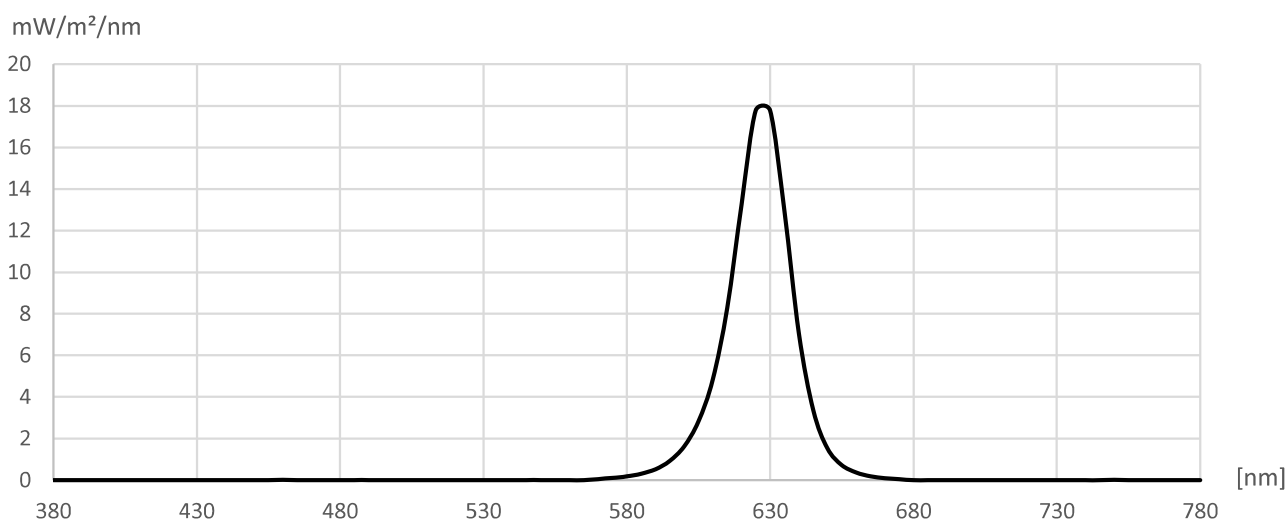
First, last name of inspector

Measurement protocol

th.mann

Test object: Stairville
LED Par 46 COB RGBW 20W
Item 333906_375060 / @ 1 m / red

Measurement file: 333906_375060_red_1
Date of measurement: 30.03.2019
Time of measurement: 16:05:34



R1 = -	Ra = -	Illuminance	104,92 lx	CIE1931
R2 = -	Re = -	Ee	0,475 W/m²	x = 0,6880
R3 = -	GAI = -	LER	220,9 lm/W	y = 0,3114
R4 = -				
R5 = -		correlated color temperature (CCT)	< 1600 K	CIE1976
R6 = -		Duv	-	u' = 0,5135
R7 = -				v' = 0,5228
R8 = -		Saturation	99,6 %	
R9 = -				CIE1960
R10 = -		Dominant wavelength	623 nm	u = 0,5135
R11 = -		Peak wavelength	627 nm	v = 0,3485
R12 = -				
R13 = -		Flicker frequency	% < 2.5 Hz	TM30
R14 = -		Percent Flicker	< 2.5 %	Rf = -
R15 = -		Flicker index	% < 2.5	Rg = -

[nm]	mW/m²/nm	[nm]	mW/m²/nm	[nm]	mW/m²/nm	[nm]	mW/m²/nm	[nm]	mW/m²/nm	[nm]	mW/m²/nm	[nm]	mW/m²/nm
380	0,00	440	0,00	500	0,00	560	0,00	620	13,28	680	0,00	740	0,00
385	0,00	445	0,00	505	0,00	565	0,01	625	17,77	685	0,00	745	0,00
390	0,00	450	0,00	510	0,00	570	0,06	630	17,77	690	0,00	750	0,03
395	0,00	455	0,00	515	0,00	575	0,11	635	12,92	695	0,00	755	0,01
400	0,00	460	0,02	520	0,00	580	0,18	640	7,06	700	0,01	760	0,00
405	0,01	465	0,00	525	0,00	585	0,32	645	3,36	705	0,00	765	0,00
410	0,00	470	0,00	530	0,00	590	0,53	650	1,53	710	0,00	770	0,00
415	0,00	475	0,00	535	0,00	595	0,93	655	0,73	715	0,00	775	0,00
420	0,00	480	0,00	540	0,01	600	1,62	660	0,37	720	0,00	780	0,00
425	0,00	485	0,01	545	0,01	605	2,83	665	0,19	725	0,00		
430	0,00	490	0,01	550	0,01	610	4,85	670	0,10	730	0,00		
435	0,00	495	0,00	555	0,00	615	8,29	675	0,05	735	0,00		

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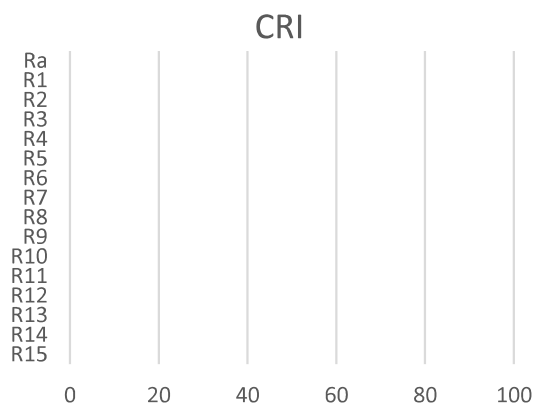
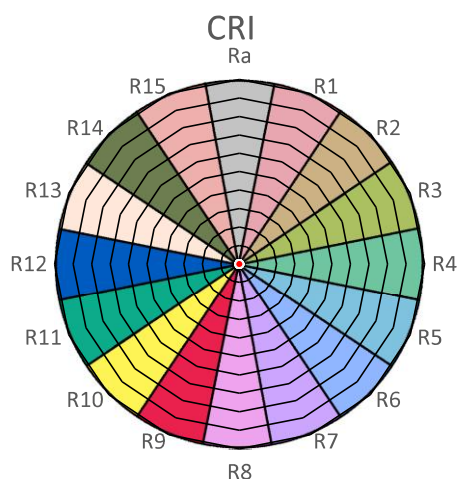
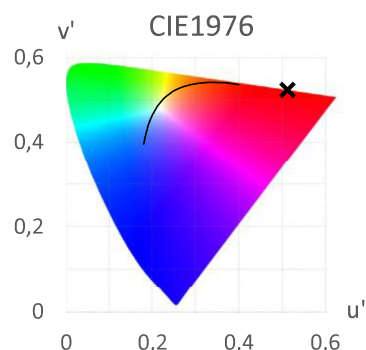
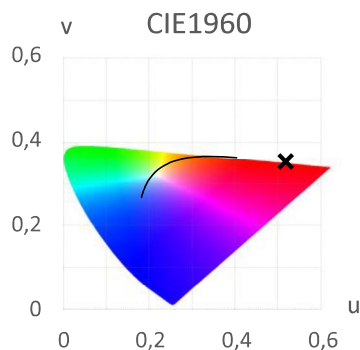
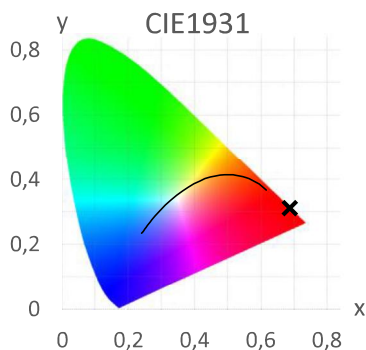
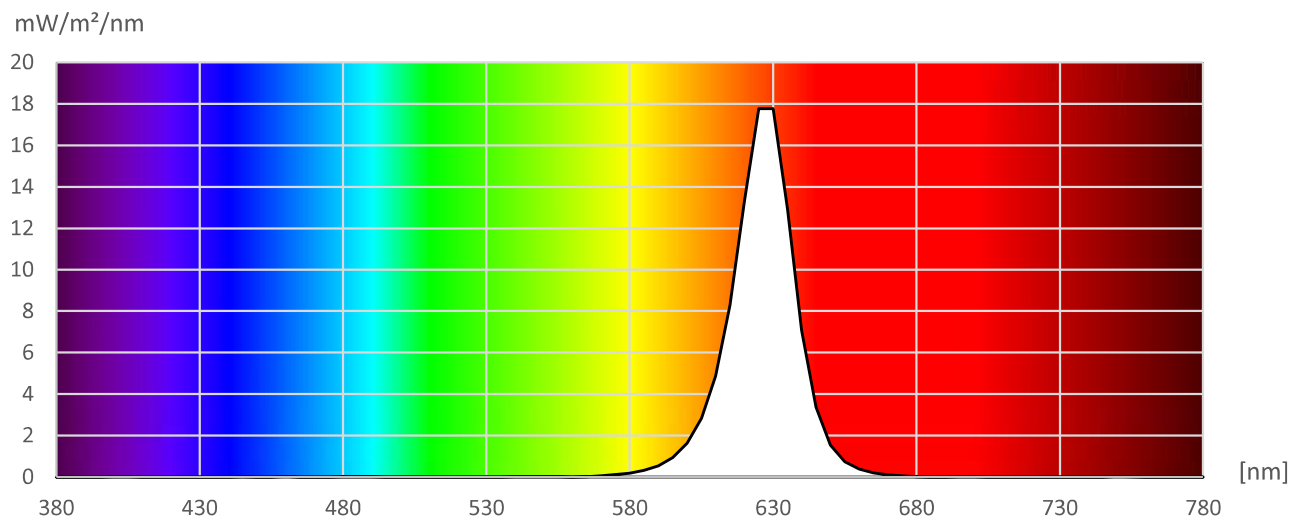
First, last name of inspector

Measurement protocol

th.mann

Test object: Stairville
LED Par 46 COB RGBW 20W
Item 333906_375060 / @ 1 m / red

Measurement file: 333906_375060_r
Date of measurement: 30.03.2019
Time of measurement: 16:05:34



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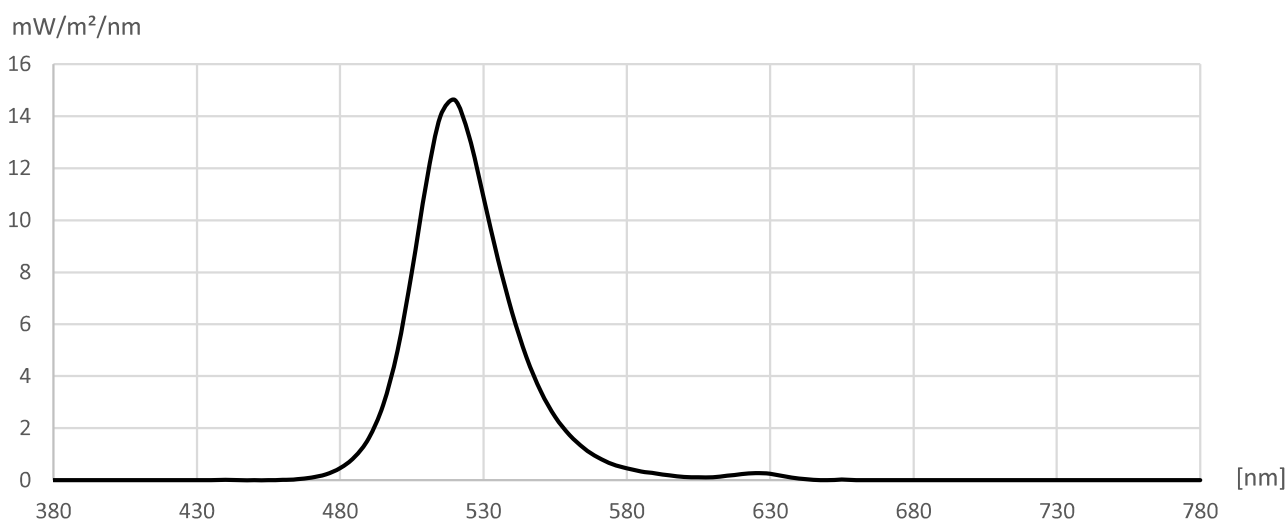
First, last name of inspector

Measurement protocol

th.mann

Test object: Stairville
LED Par 46 COB RGBW 20W
Item 333906_375060 / @ 1 m / green

Measurement file: 333906_375060_gr_1n
Date of measurement: 30.03.2019
Time of measurement: 16:05:46



R1 = -31,9	Ra = -24,5
R2 = -9,0	Re = -53,3
R3 = -25,2	GAI = 0,8
R4 = -64,6	
R5 = -7,2	
R6 = -16,2	
R7 = -10,5	
R8 = -31,1	
R9 = #####	
R10 = #####	
R11 = -93,5	
R12 = -31,7	
R13 = -38,7	
R14 = 38,0	
R15 = -35,8	

Illuminance	277,69 lx
Ee	0,581 W/m²
LER	477,8 lm/W
correlated color temperature (CCT)	7887 K
Duv	0,1585
Saturation	77,3 %
Dominant wavelength	523 nm
Peak wavelength	519 nm
Flicker frequency	% < 2.5 Hz
Percent Flicker	< 2.5 %
Flicker index	% < 2.5

CIE1931
x = 0,1668
y = 0,7220
CIE1976
u' = 0,0589
v' = 0,5735
CIE1960
u = 0,0589
v = 0,3823
TM30
Rf = 0,9
Rg = 9,0

[nm]	mW/m²/nm	[nm]	mW/m²/nm	[nm]	mW/m²/nm	[nm]	mW/m²/nm	[nm]	mW/m²/nm	[nm]	mW/m²/nm	[nm]	mW/m²/nm
380	0,00	440	0,02	500	4,98	560	1,74	620	0,23	680	0,00	740	0,00
385	0,00	445	0,00	505	8,03	565	1,23	625	0,28	685	0,00	745	0,00
390	0,00	450	0,00	510	11,43	570	0,88	630	0,25	690	0,00	750	0,00
395	0,00	455	0,00	515	14,00	575	0,61	635	0,15	695	0,00	755	0,00
400	0,00	460	0,02	520	14,62	580	0,46	640	0,07	700	0,00	760	0,00
405	0,00	465	0,04	525	13,21	585	0,33	645	0,02	705	0,00	765	0,00
410	0,00	470	0,11	530	10,88	590	0,27	650	0,00	710	0,00	770	0,00
415	0,00	475	0,22	535	8,49	595	0,18	655	0,02	715	0,00	775	0,00
420	0,00	480	0,47	540	6,45	600	0,13	660	0,00	720	0,00	780	0,00
425	0,00	485	0,89	545	4,74	605	0,11	665	0,00	725	0,00		
430	0,00	490	1,62	550	3,42	610	0,12	670	0,00	730	0,00		
435	0,00	495	2,89	555	2,44	615	0,17	675	0,00	735	0,00		

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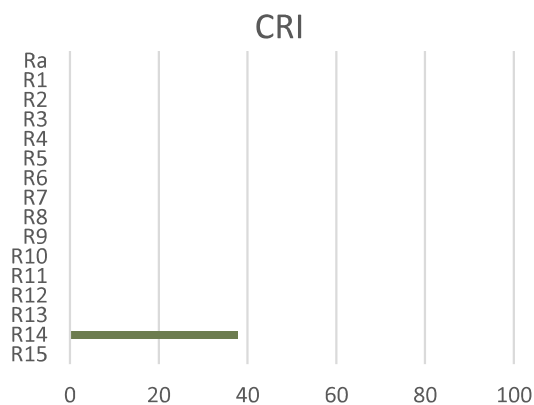
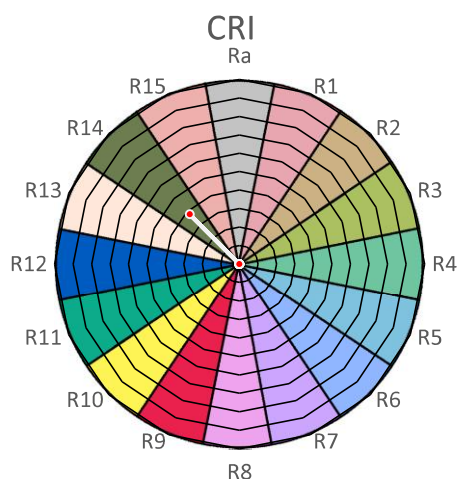
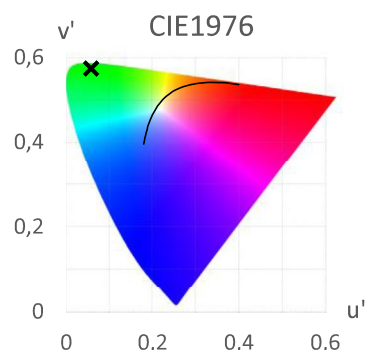
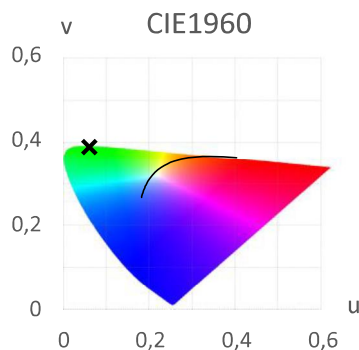
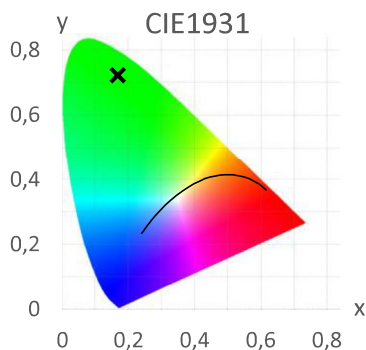
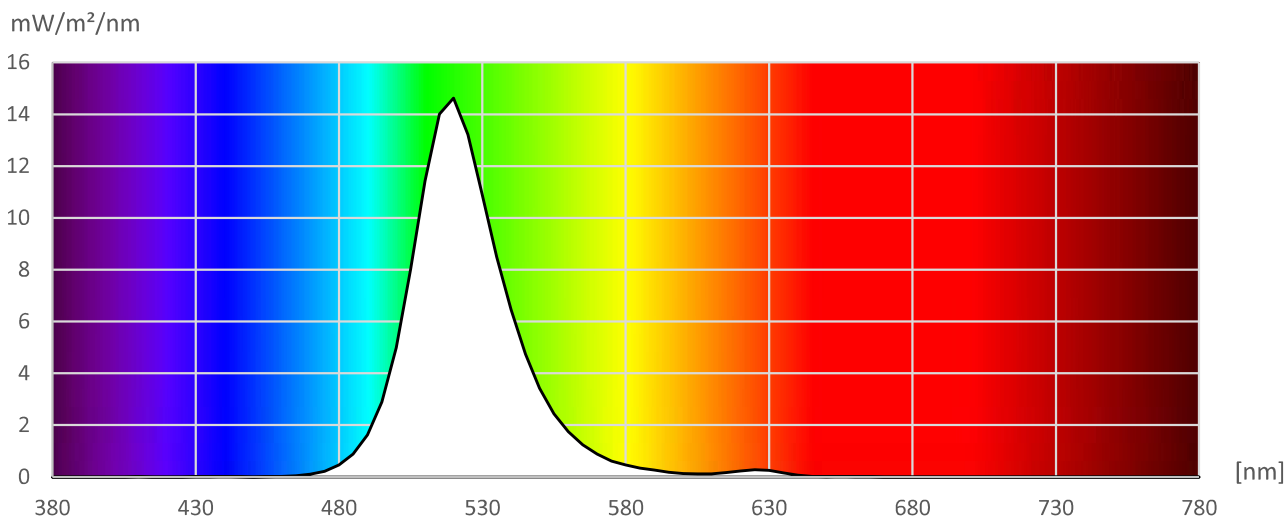
First, last name of inspector

Measurement protocol

th•mann

Test object: Stairville
LED Par 46 COB RGBW 20W
Item 333906_375060 / @ 1 m / green

Measurement file: 333906_375060_g
Date of measurement: 30.03.2019
Time of measurement: 16:05:46



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Burgebrach, 04.04.2019

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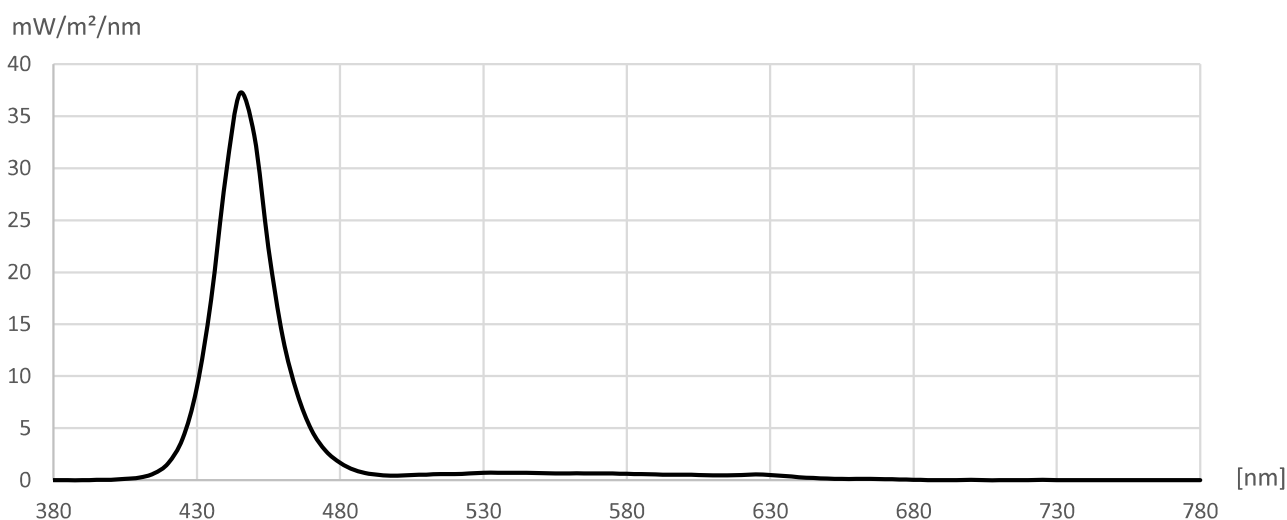
First, last name of inspector

Measurement protocol

th.mann

Test object: Stairville
LED Par 46 COB RGBW 20W
Item 333906_375060 / @ 1 m / blue

Measurement file: 333906_375060_bl_1nr
Date of measurement: 30.03.2019
Time of measurement: 16:05:57



R1 = -	Ra = -	Illuminance	66,62 lx	CIE1931
R2 = -	Re = -	Ee	1,030 W/m²	x = 0,1713
R3 = -	GAI = -	LER	64,7 lm/W	y = 0,0491
R4 = -				
R5 = -		correlated color temperature (CCT)	> 50000 K	CIE1976
R6 = -		Duv	-	u' = 0,2110
R7 = -				v' = 0,1362
R8 = -		Saturation	90,3 %	
R9 = -				CIE1960
R10 = -		Dominant wavelength	433 nm	u = 0,2110
R11 = -		Peak wavelength	445 nm	v = 0,0908
R12 = -				
R13 = -		Flicker frequency	% < 2.5 Hz	TM30
R14 = -		Percent Flicker	< 2.5 %	Rf = -
R15 = -		Flicker index	% < 2.5	Rg = -

[nm]	mW/m²/nm	[nm]	mW/m²/nm	[nm]	mW/m²/nm	[nm]	mW/m²/nm	[nm]	mW/m²/nm	[nm]	mW/m²/nm	[nm]	mW/m²/nm
380	0,00	440	29,03	500	0,44	560	0,67	620	0,50	680	0,05	740	0,00
385	0,00	445	37,20	505	0,51	565	0,67	625	0,55	685	0,02	745	0,00
390	0,00	450	33,14	510	0,54	570	0,66	630	0,51	690	0,02	750	0,00
395	0,03	455	22,37	515	0,59	575	0,64	635	0,41	695	0,02	755	0,00
400	0,05	460	13,76	520	0,59	580	0,61	640	0,30	700	0,03	760	0,00
405	0,14	465	8,38	525	0,64	585	0,59	645	0,21	705	0,00	765	0,00
410	0,25	470	4,83	530	0,73	590	0,55	650	0,15	710	0,00	770	0,00
415	0,65	475	2,80	535	0,73	595	0,53	655	0,12	715	0,00	775	0,00
420	1,65	480	1,66	540	0,71	600	0,54	660	0,14	720	0,01	780	0,00
425	4,00	485	0,99	545	0,72	605	0,51	665	0,12	725	0,03		
430	8,84	490	0,64	550	0,69	610	0,47	670	0,11	730	0,00		
435	17,34	495	0,49	555	0,65	615	0,48	675	0,08	735	0,00		

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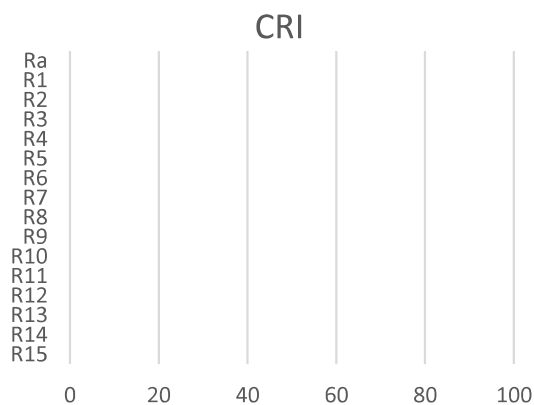
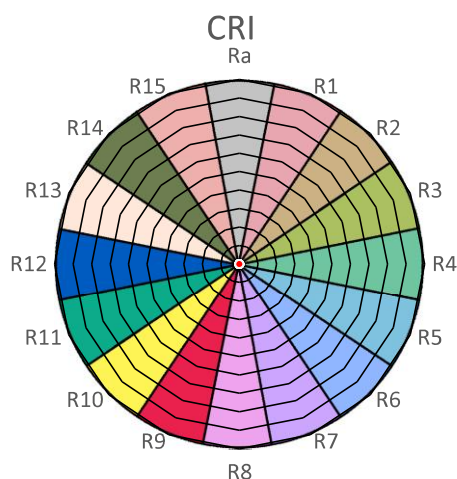
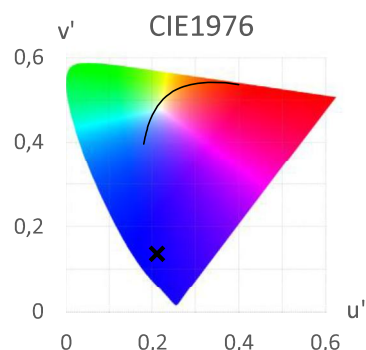
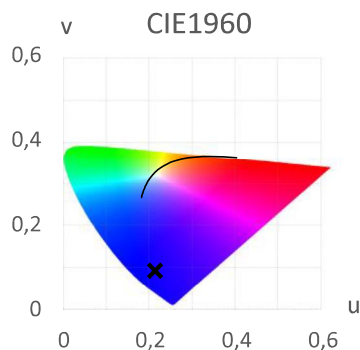
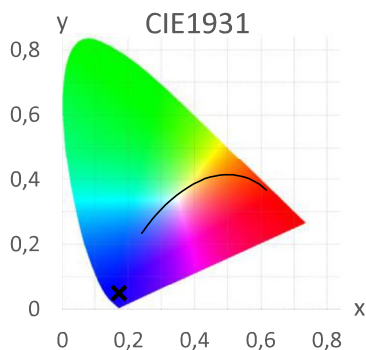
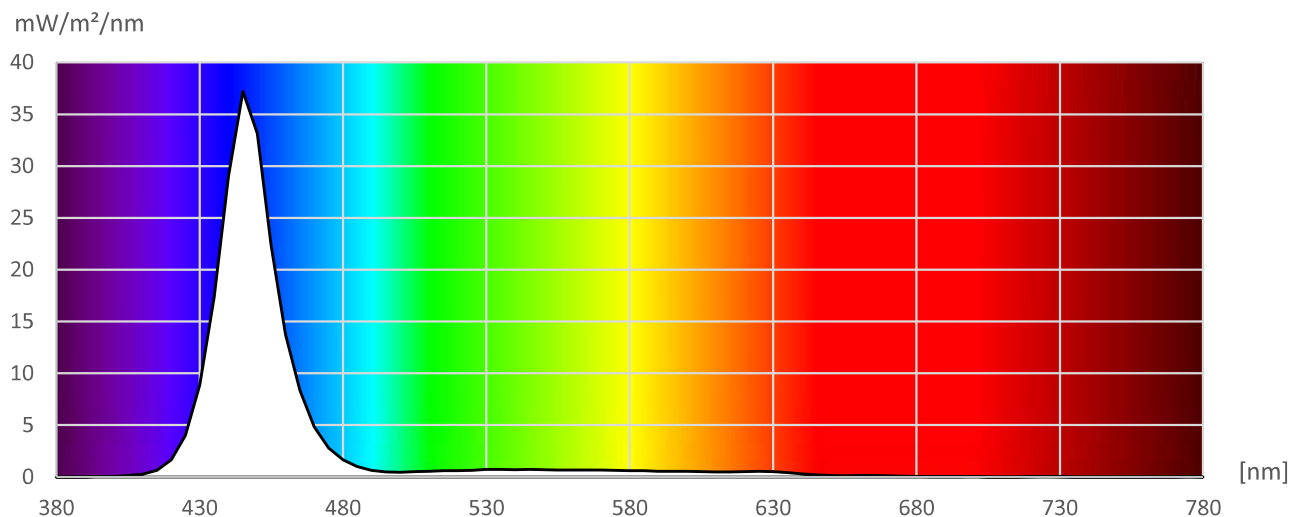
First, last name of inspector

Measurement protocol

th•mann

Test object: Stairville
LED Par 46 COB RGBW 20W
Item 333906_375060 / @ 1 m / blue

Measurement file: 333906_375060_b
Date of measurement: 30.03.2019
Time of measurement: 16:05:57



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Burgebrach, 04.04.2019

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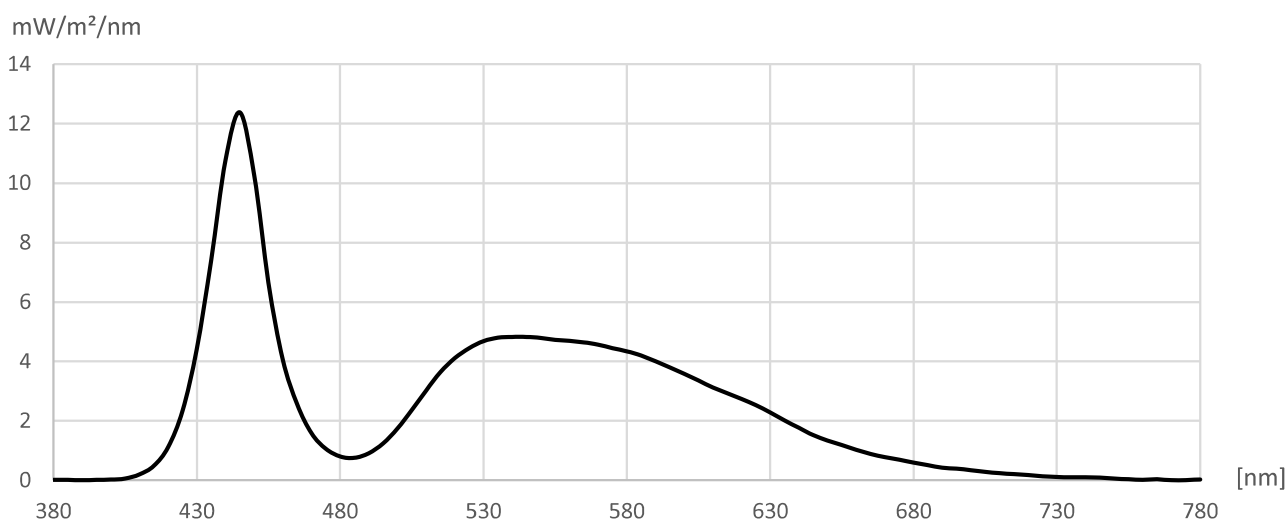
First, last name of inspector

Measurement protocol

th.mann

Test object: Stairville
LED Par 46 COB RGBW 20W
Item 333906_375060 / @ 1 m / white

Measurement file: 333906_375060_wh_1
Date of measurement: 30.03.2019
Time of measurement: 16:06:10



R1 = 74,5	Ra = 71,3
R2 = 72,1	Re = 62,2
R3 = 66,8	GAI = 95,1
R4 = 74,7	
R5 = 75,4	
R6 = 63,1	
R7 = 76,3	
R8 = 67,6	
R9 = -10,3	
R10 = 30,6	
R11 = 76,5	
R12 = 41,8	
R13 = 72,1	
R14 = 81,0	
R15 = 70,8	

Illuminance	285,24 lx
Ee	0,936 W/m²
LER	304,6 lm/W
correlated color temperature (CCT)	7849 K
Duv	-0,0041
Saturation	15,1 %
Dominant wavelength	475 nm
Peak wavelength	445 nm
Flicker frequency	% < 2.5 Hz
Percent Flicker	< 2.5 %
Flicker index	% < 2.5

CIE1931
x = 0,2984
y = 0,3007
CIE1976
u' = 0,1986
v' = 0,4502
CIE1960
u = 0,1986
v = 0,3001
TM30
Rf = 64,4
Rg = 96,5

[nm]	mW/m²/nm	[nm]	mW/m²/nm	[nm]	mW/m²/nm	[nm]	mW/m²/nm	[nm]	mW/m²/nm	[nm]	mW/m²/nm	[nm]	mW/m²/nm
380	0,01	440	10,77	500	1,74	560	4,69	620	2,73	680	0,59	740	0,10
385	0,01	445	12,37	505	2,37	565	4,64	625	2,53	685	0,51	745	0,09
390	0,00	450	10,25	510	3,02	570	4,57	630	2,28	690	0,43	750	0,06
395	0,01	455	6,66	515	3,63	575	4,45	635	2,02	695	0,39	755	0,03
400	0,02	460	4,07	520	4,11	580	4,34	640	1,76	700	0,34	760	0,02
405	0,06	465	2,56	525	4,45	585	4,19	645	1,52	705	0,28	765	0,03
410	0,20	470	1,58	530	4,68	590	4,00	650	1,34	710	0,24	770	0,00
415	0,48	475	1,05	535	4,79	595	3,80	655	1,19	715	0,21	775	0,01
420	1,12	480	0,80	540	4,82	600	3,58	660	1,03	720	0,17	780	0,03
425	2,35	485	0,75	545	4,82	605	3,35	665	0,89	725	0,14		
430	4,40	490	0,91	550	4,79	610	3,13	670	0,78	730	0,11		
435	7,38	495	1,24	555	4,73	615	2,93	675	0,69	735	0,10		

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Burgebrach, 04.04.2019

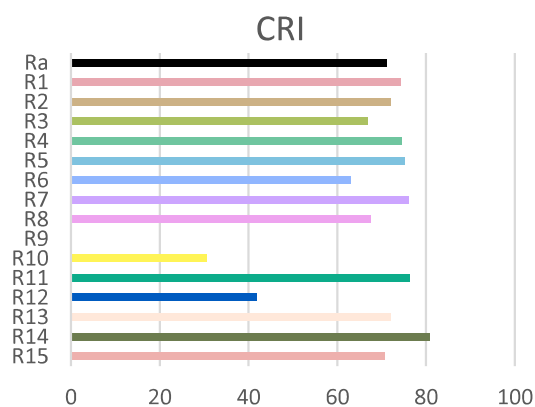
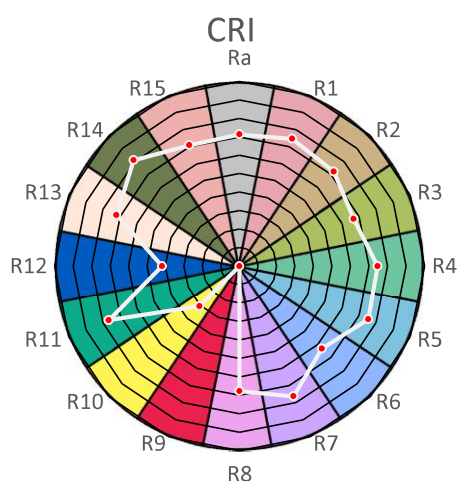
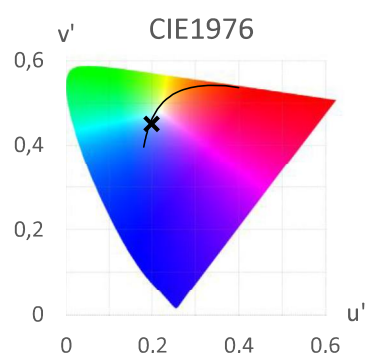
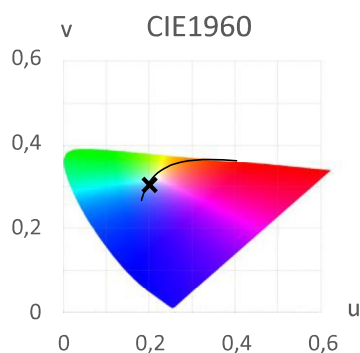
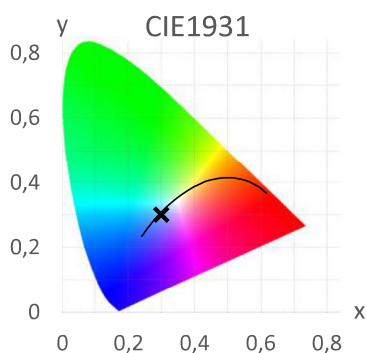
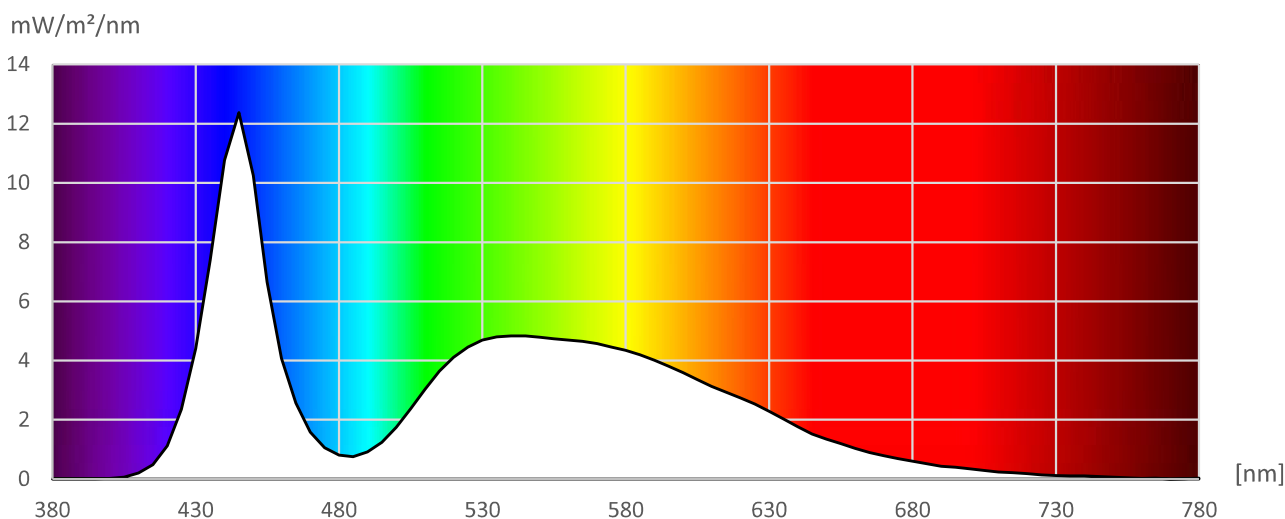
First, last name of inspector

Measurement protocol

th•mann

Test object: Stairville
LED Par 46 COB RGBW 20W
Item 333906_375060 / @ 1 m / white

Measurement file: 333906_375060_v
Date of measurement: 30.03.2019
Time of measurement: 16:06:10



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Burgebrach, 04.04.2019

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First, last name of inspector