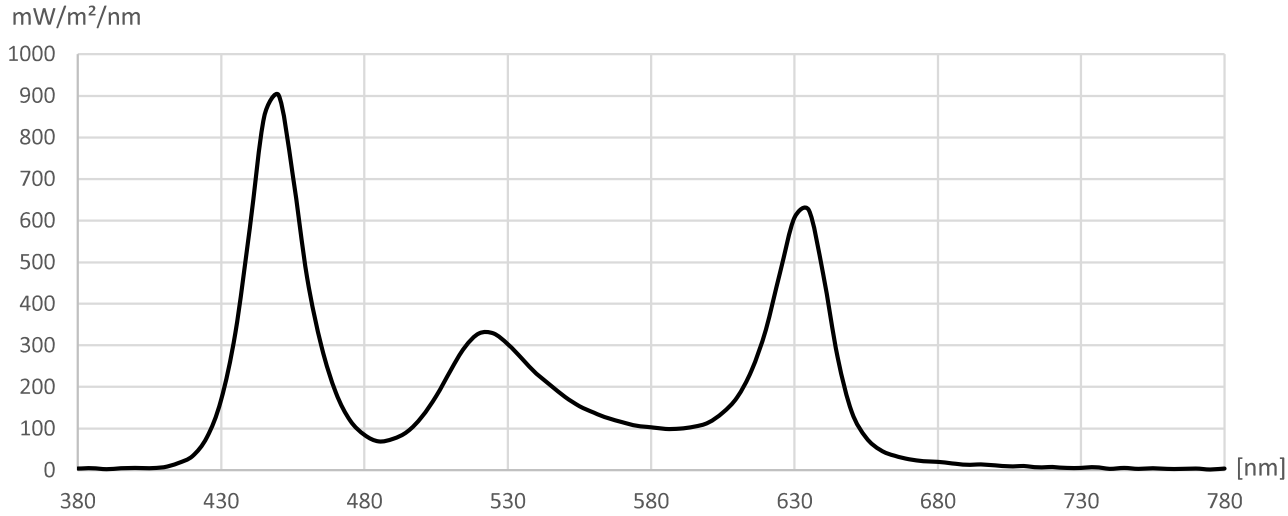
Measurement protocol

th•mann

Test object: Ignition
Co9 LED Flood IP65 540W RGBW
Item 421760 / @ 3 m / 25° / all

Measurement file: 17-38-03.CSV
Date of measurement: 15.12.2018
Time of measurement: 17:38:03



R1	= 28,1	Ra	= 43,2	Illuminance	14674,91 lx	CIE1931	
R2	= 76,0	Re	= 26,9	Ee	63,994 W/m²	x	= 0,2908
R3	= 48,0	GAI	= 166,5	LER	229,3 lm/W	y	= 0,2424
R4	= 18,6						
R5	= 44,0			correlated color temperature (CCT)	13075 K	CIE1976	
R6	= 75,9			Duv	-0,0339	u'	= 0,2184
R7	= 60,9					v'	= 0,4095
R8	= -6,0			Saturation	32,4 %		
R9	= #####					CIE1960	
R10	= 63,7			Dominant wavelength	#NV	u	= 0,2184
R11	= 2,9			Peak wavelength	449 nm	v	= 0,2730
R12	= 74,5						
R13	= 39,5			Flicker frequency	3000,2 Hz	TM30	
R14	= 65,2			Percent Flicker	f > 400 Hz %	Rf	= 60,9
R15	= 2,4			Flicker index	f > 400 Hz	Rg	= 127,8

[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	4,06	440	581,74	500	128,29	560	138,34	620	338,07	680	20,21	740	3,70
385	5,09	445	849,75	505	178,44	565	125,10	625	474,68	685	16,64	745	5,39
390	2,85	450	901,44	510	239,66	570	115,71	630	606,73	690	13,20	750	3,00
395	4,64	455	711,35	515	295,46	575	106,73	635	625,04	695	13,84	755	5,17
400	5,71	460	464,34	520	328,71	580	103,35	640	471,11	700	11,78	760	3,08
405	5,05	465	298,32	525	328,62	585	99,28	645	272,07	705	9,16	765	3,26
410	7,41	470	186,83	530	303,11	590	100,33	650	140,88	710	10,05	770	4,06
415	17,23	475	119,31	535	267,77	595	104,57	655	78,33	715	7,07	775	2,14
420	34,39	480	84,60	540	232,46	600	114,54	660	48,38	720	7,71	780	4,21
425	79,08	485	69,47	545	204,11	605	138,46	665	34,56	725	5,49		
430	168,23	490	75,27	550	176,14	610	175,16	670	26,36	730	5,85		
435	330,76	495	93,12	555	154,18	615	239,73	675	22,04	735	7,30		

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Sebastian Laske

First, last name of inspector

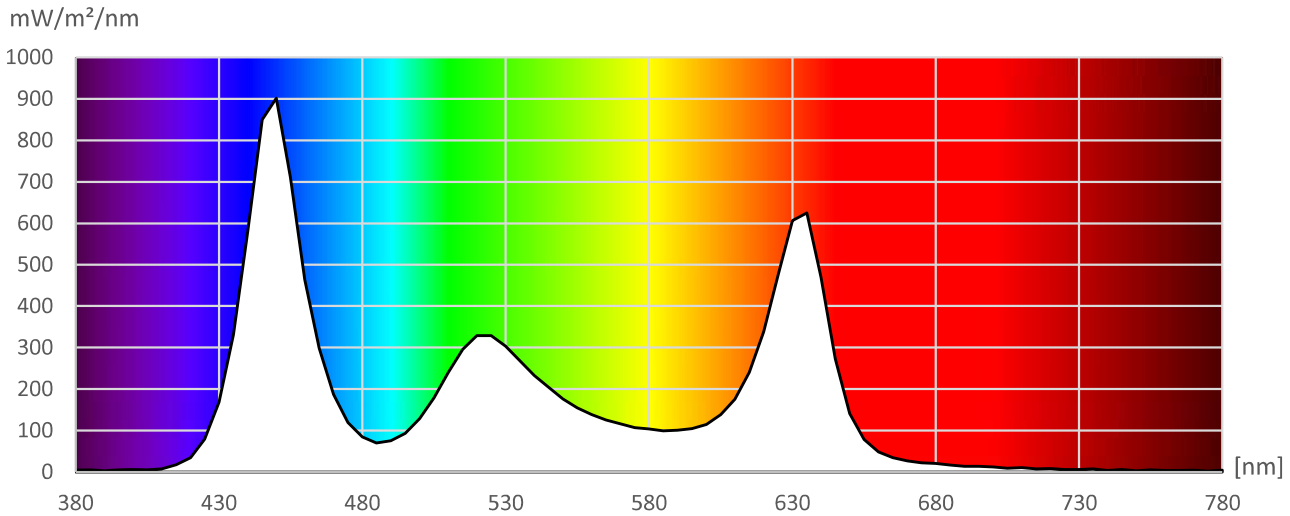
Burgebrach, 15.12.2018

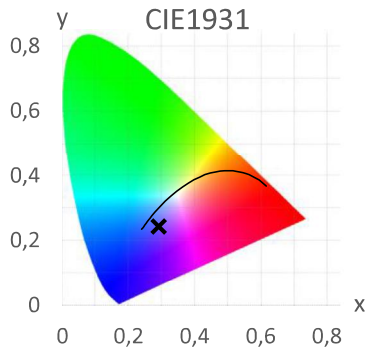
Measurement protocol

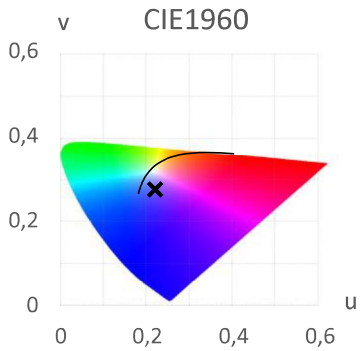
th•mann

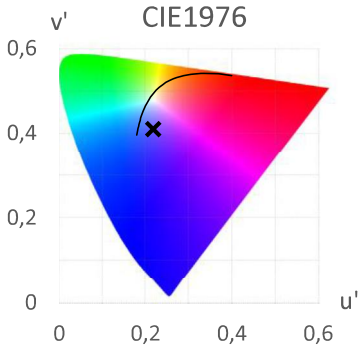
Test object: Ignition
Co9 LED Flood IP65 540W RGBW
Item 421760 / @ 3 m / 25° / all

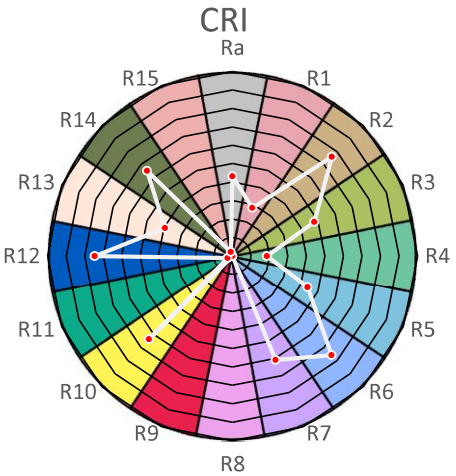
Measurement file: 17-38-03.CSV
Date of measurement: 15.12.2018
Time of measurement: 17:38:03

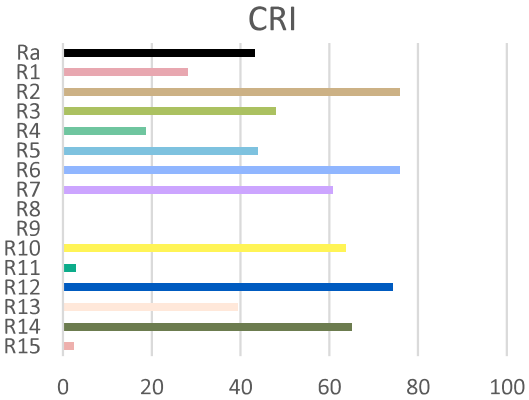












Thomann GmbH
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Burgebrach, 15.12.2018

Sebastian Laske

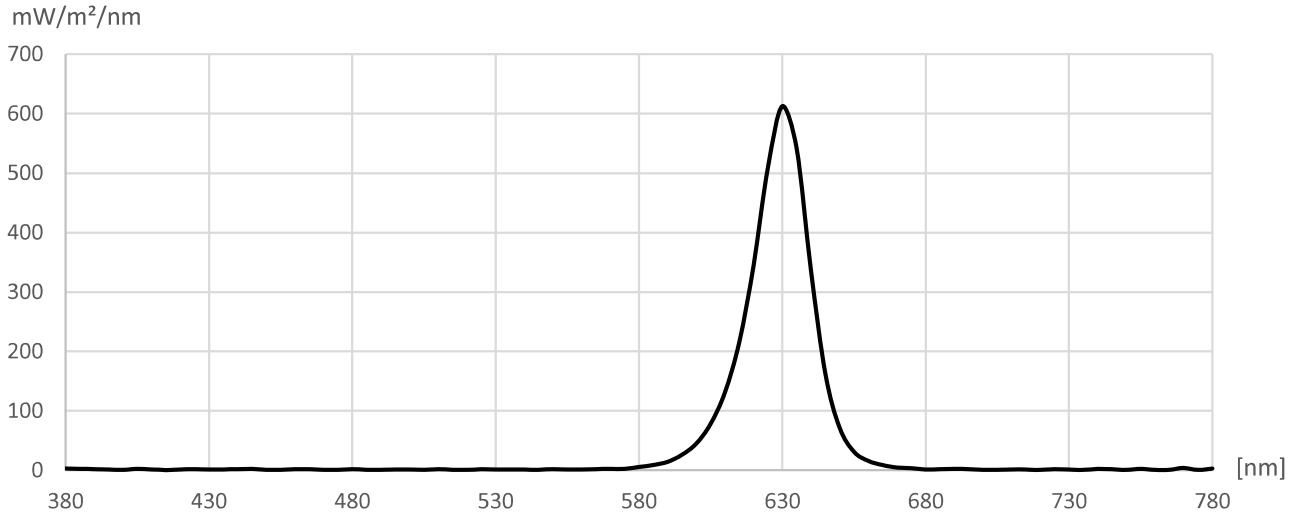
First, last name of inspector

Measurement protocol

th•mann

Test object: Ignition
Co9 LED Flood IP65 540W RGBW
Item 421760 / @ 3 m / 25° / red

Measurement file: 17-36-17.CSV
Date of measurement: 15.12.2018
Time of measurement: 17:36:17



R1	= -	Ra	= -	Illuminance	3299,02 lx	CIE1931	
R2	= -	Re	= -	Ee	16,267 W/m²	x	= 0,6831
R3	= -	GAI	= -	LER	202,8 lm/W	y	= 0,3075
R4	= -						
R5	= -			correlated color temperature (CCT)	< 1600 K	CIE1976	
R6	= -			Duv	-	u'	= 0,5132
R7	= -					v'	= 0,5199
R8	= -			Saturation	97,3 %		
R9	= -					CIE1960	
R10	= -			Dominant wavelength	625 nm	u	= 0,5132
R11	= -			Peak wavelength	630 nm	v	= 0,3466
R12	= -						
R13	= -			Flicker frequency	3000,2 Hz	TM30	
R14	= -			Percent Flicker	f > 400 Hz %	Rf	= -
R15	= -			Flicker index	f > 400 Hz	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	2,98	440	1,69	500	1,05	560	1,28	620	346,10	680	1,48	740	2,15
385	2,26	445	2,14	505	0,74	565	2,00	625	508,71	685	1,66	745	1,76
390	1,92	450	0,92	510	1,63	570	2,29	630	612,48	690	2,47	750	0,46
395	1,05	455	0,85	515	0,96	575	2,52	635	541,23	695	1,84	755	2,55
400	0,73	460	1,69	520	0,72	580	5,62	640	335,27	700	0,72	760	0,47
405	2,40	465	1,77	525	1,53	585	8,82	645	161,92	705	0,60	765	0,71
410	1,46	470	0,69	530	1,44	590	14,33	650	72,03	710	1,50	770	3,67
415	0,45	475	0,63	535	1,17	595	25,84	655	31,11	715	1,04	775	0,50
420	1,32	480	1,58	540	0,99	600	44,80	660	15,85	720	0,52	780	2,88
425	2,02	485	0,89	545	0,94	605	78,10	665	8,72	725	1,68		
430	1,42	490	0,73	550	1,71	610	131,15	670	4,62	730	1,11		
435	1,48	495	1,05	555	1,23	615	216,50	675	3,65	735	0,45		

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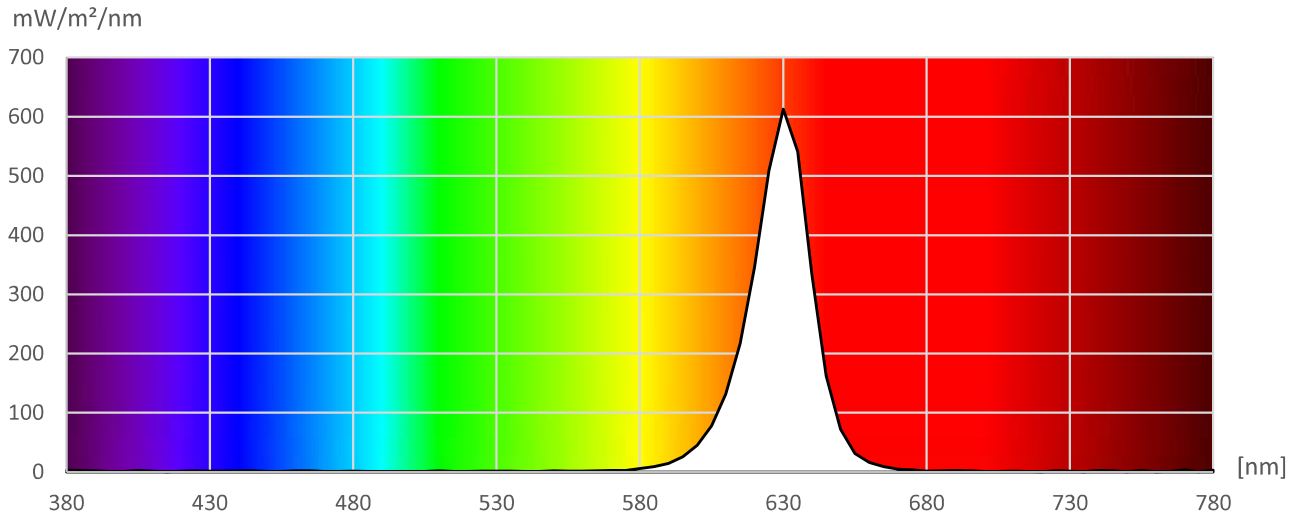
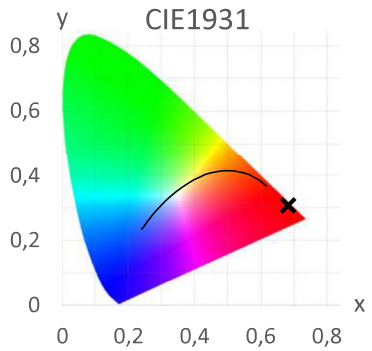
First, last name of inspector

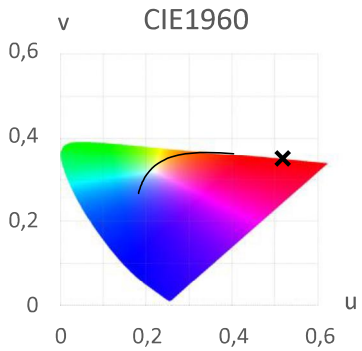
Burgebrach, 15.12.2018

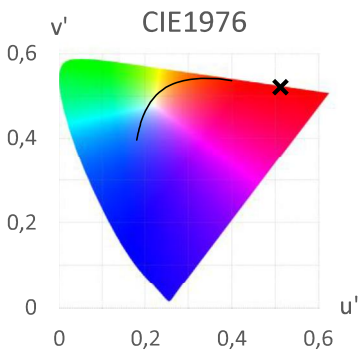
Measurement protocol

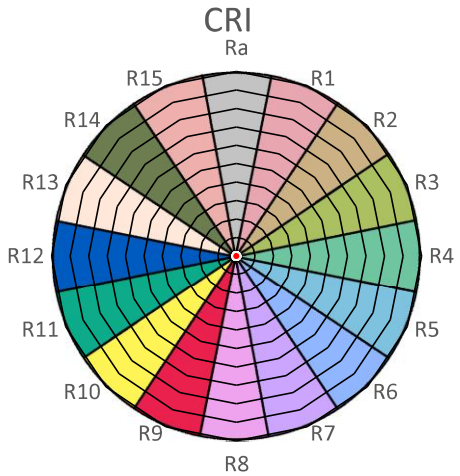
Test object:	Ignition Co9 LED Flood IP65 540W RGBW Item 421760 / @ 3 m / 25° / red	Measurement file: Date of measurement: Time of measurement:	17-36-17.CSV 15.12.2018 17:36:17

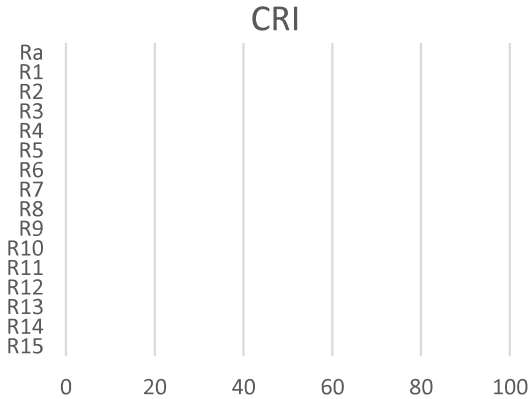












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Burgebrach, 15.12.2018

Sebastian Laske

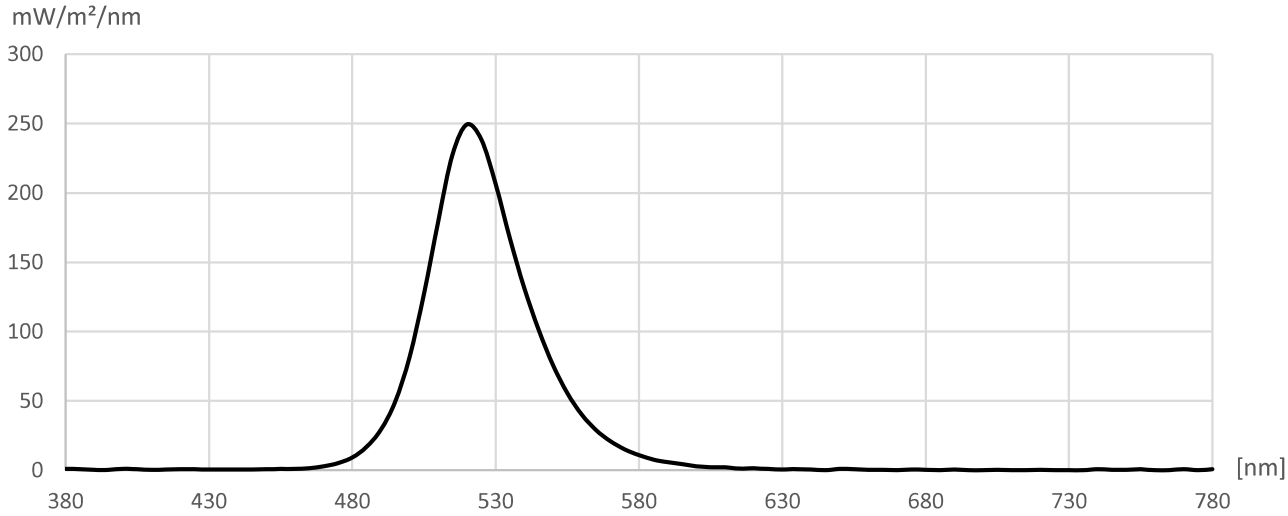
First, last name of inspector

Measurement protocol

th•mann

Test object: Ignition
Co9 LED Flood IP65 540W RGBW
Item 421760 / @ 3 m / 25° / green

Measurement file: 17-36-30.CSV
Date of measurement: 15.12.2018
Time of measurement: 17:36:30



R1	= -33,7	Ra	= -20,0	Illuminance	5193,47 lx	CIE1931	
R2	= -4,0	Re	= -50,6	Ee	10,618 W/m²	x	= 0,1785
R3	= -13,2	GAI	= 0,9	LER	489,1 lm/W	y	= 0,7151
R4	= -59,8						
R5	= -8,3			correlated color temperature (CCT)	7728 K	CIE1976	
R6	= -10,6			Duv	0,1542	u'	= 0,0636
R7	= -0,5					v'	= 0,5734
R8	= -30,1			Saturation	77,1 %		
R9	= #####					CIE1960	
R10	= -95,2			Dominant wavelength	525 nm	u	= 0,0636
R11	= -88,8			Peak wavelength	519 nm	v	= 0,3823
R12	= -25,9						
R13	= -38,0			Flicker frequency	3000,3 Hz	TM30	
R14	= 43,7			Percent Flicker	f > 400 Hz %	Rf	= 1,3
R15	= -38,4			Flicker index	f > 400 Hz	Rg	= 10,7

[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	1,08	440	0,60	500	81,98	560	40,07	620	1,37	680	0,34	740	0,82
385	0,80	445	0,54	505	127,38	565	29,05	625	0,88	685	0,00	745	0,35
390	0,23	450	0,71	510	180,14	570	20,99	630	0,56	690	0,53	750	0,27
395	0,33	455	0,90	515	227,70	575	15,13	635	0,88	695	0,05	755	0,68
400	1,10	460	0,98	520	249,29	580	10,91	640	0,50	700	0,00	760	0,00
405	0,66	465	1,54	525	238,48	585	7,68	645	0,10	705	0,38	765	0,12
410	0,24	470	2,82	530	206,20	590	5,84	650	0,92	710	0,05	770	0,85
415	0,49	475	5,16	535	166,67	595	4,39	655	0,81	715	0,11	775	0,04
420	0,73	480	9,21	540	131,69	600	2,92	660	0,33	720	0,33	780	0,67
425	0,67	485	16,82	545	101,46	605	2,25	665	0,35	725	0,00		
430	0,60	490	29,22	550	75,93	610	2,04	670	0,12	730	0,18		
435	0,55	495	49,59	555	55,60	615	1,11	675	0,51	735	0,02		

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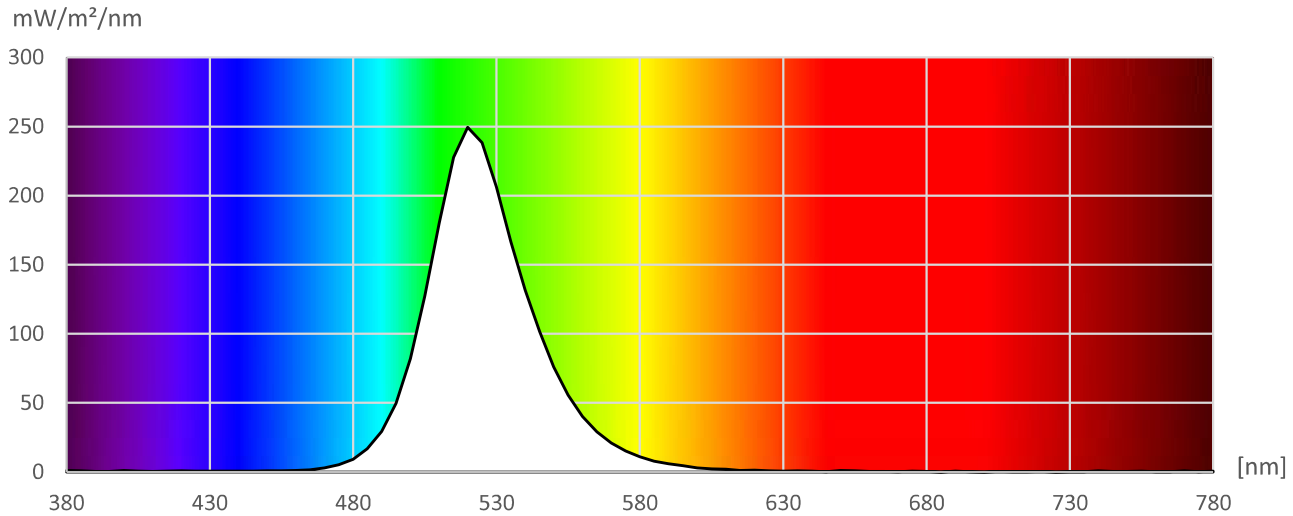
Burgebrach, 15.12.2018

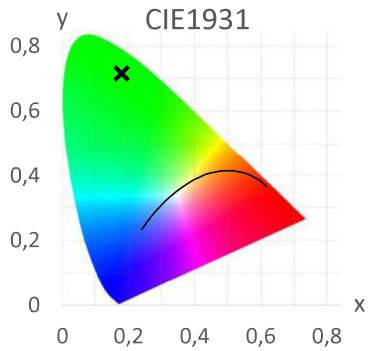
Sebastian Laske

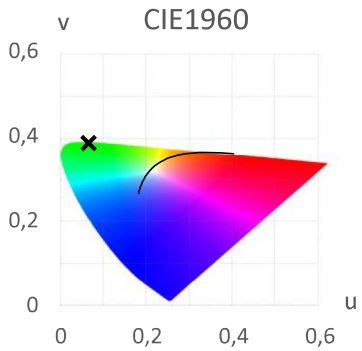
First, last name of inspector

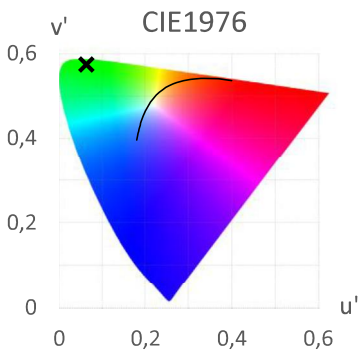
Measurement protocol

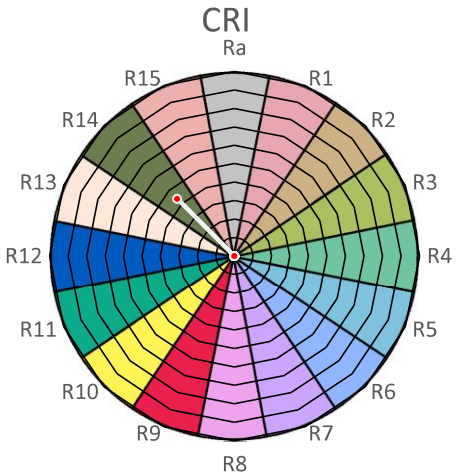
Test object:	Ignition Co9 LED Flood IP65 540W RGBW Item 421760 / @ 3 m / 25° / green	Measurement file: Date of measurement: Time of measurement:	17-36-30.CSV 15.12.2018 17:36:30

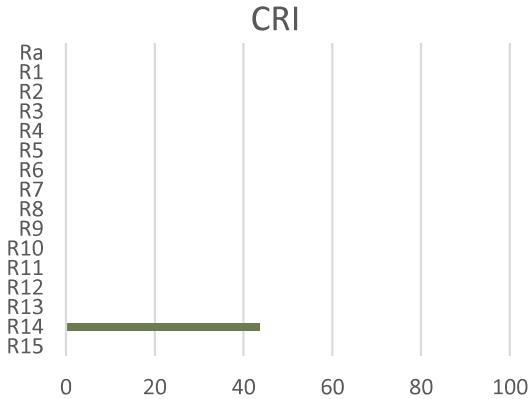












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Burgebrach, 15.12.2018

Sebastian Laske

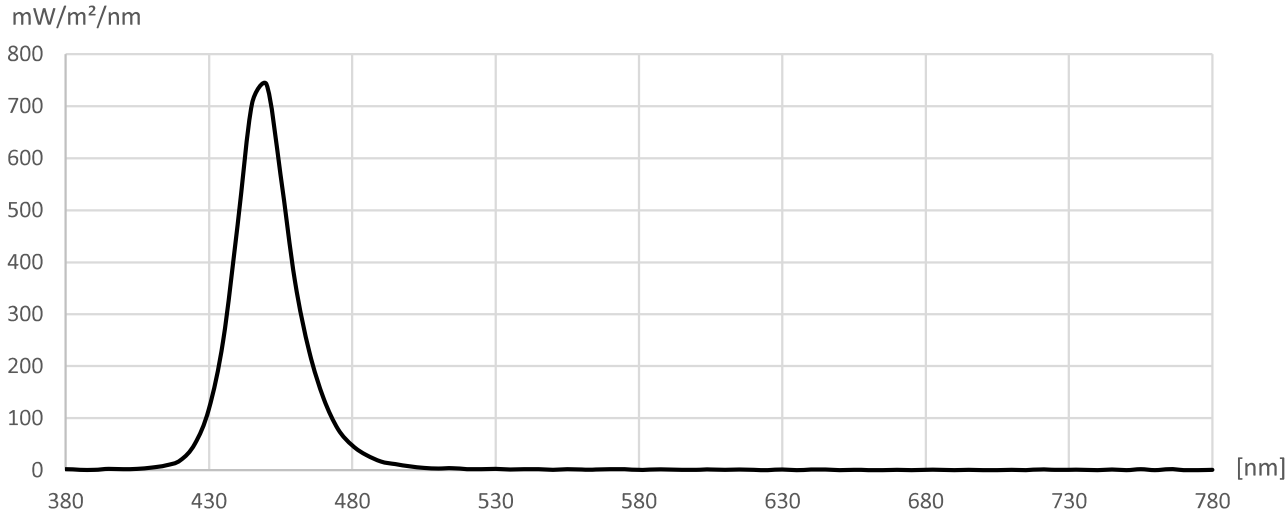
First, last name of inspector

Measurement protocol

thomann

Test object: Ignition
Co9 LED Flood IP65 540W RGBW
Item 421760 / @ 3 m / 25° / blue

Measurement file: 17-37-04.CSV
Date of measurement: 15.12.2018
Time of measurement: 17:37:04



R1	=	-	Ra	=	-	Illuminance	708,77 lx	CIE1931	
R2	=	-	Re	=	-	Ee	19,696 W/m²	x	= 0,1554
R3	=	-	GAI	=	-	LER	36,0 lm/W	y	= 0,0268
R4	=	-							
R5	=	-				correlated color temperature (CCT)	> 50000 K	CIE1976	
R6	=	-				Duv	-	u'	= 0,2064
R7	=	-						v'	= 0,0801
R8	=	-				Saturation	98 %		
R9	=	-						CIE1960	
R10	=	-				Dominant wavelength	437 nm	u	= 0,2064
R11	=	-				Peak wavelength	447 nm	v	= 0,0534
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	2,27	440	472,22	500	7,52	560	1,19	620	0,59	680	1,01	740	0,00
385	0,86	445	704,94	505	4,30	565	1,17	625	0,46	685	0,80	745	1,35
390	0,64	450	742,32	510	3,28	570	1,97	630	1,36	690	0,01	750	0,00
395	2,66	455	568,23	515	4,07	575	1,84	635	0,47	695	1,01	755	1,77
400	2,15	460	364,25	520	2,29	580	0,54	640	1,17	700	0,09	760	0,00
405	2,80	465	228,15	525	1,92	585	1,39	645	1,25	705	0,33	765	2,33
410	5,19	470	138,02	530	2,66	590	1,71	650	0,43	710	0,81	770	0,43
415	9,37	475	78,94	535	1,56	595	0,83	655	1,09	715	0,38	775	0,20
420	18,95	480	47,28	540	2,10	600	0,73	660	0,48	720	1,73	780	1,05
425	50,52	485	29,15	545	2,06	605	1,73	665	0,12	725	1,01		
430	117,41	490	16,76	550	1,07	610	0,63	670	0,92	730	1,12		
435	250,04	495	11,63	555	1,89	615	1,27	675	0,01	735	1,01		

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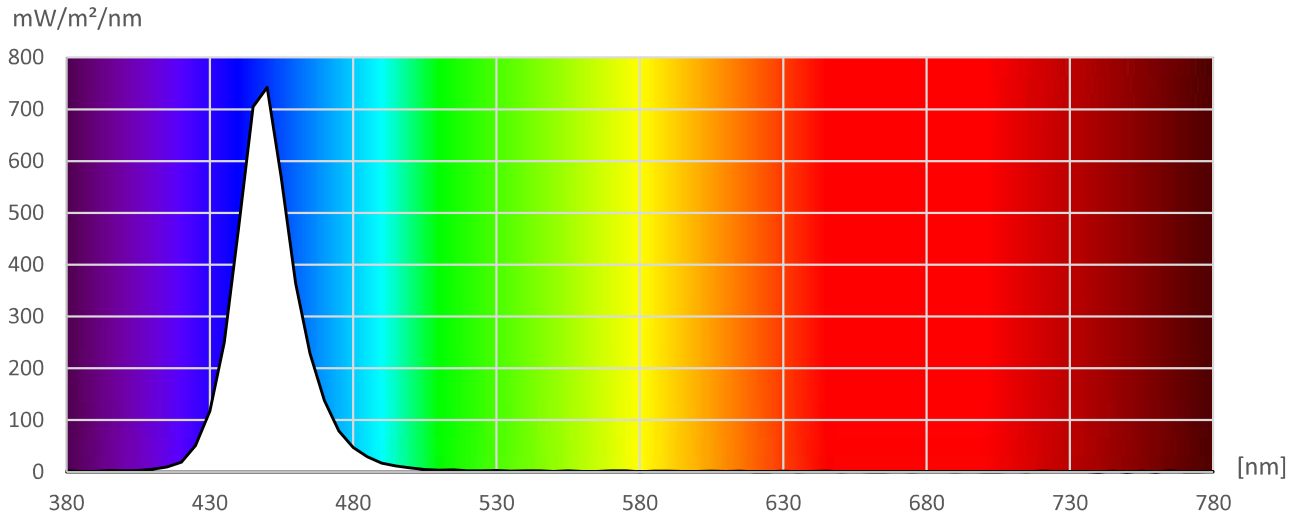
Sebastian Laske

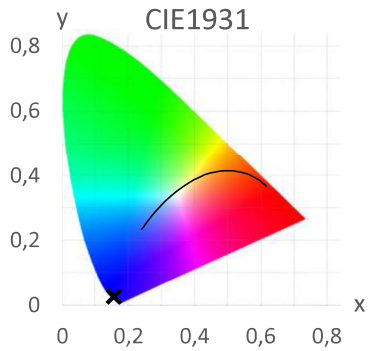
First, last name of inspector

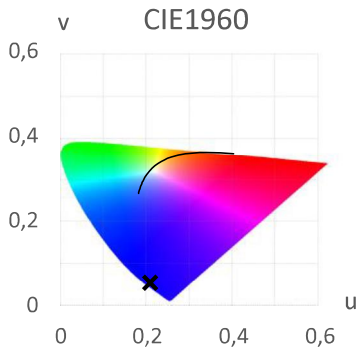
Burgebrach, 15.12.2018

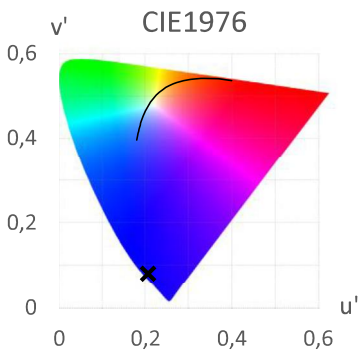
Measurement protocol

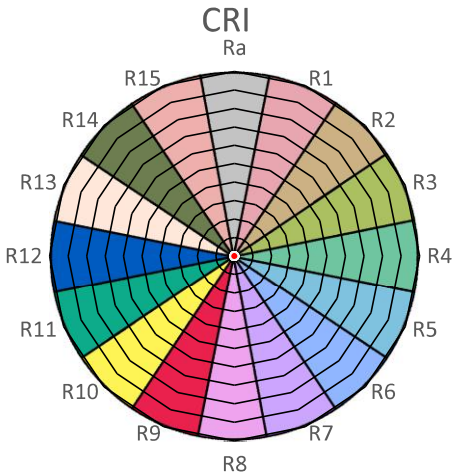
Test object:	Ignition Co9 LED Flood IP65 540W RGBW Item 421760 / @ 3 m / 25° / blue	Measurement file: Date of measurement: Time of measurement:	17-37-04.CSV 15.12.2018 17:37:04

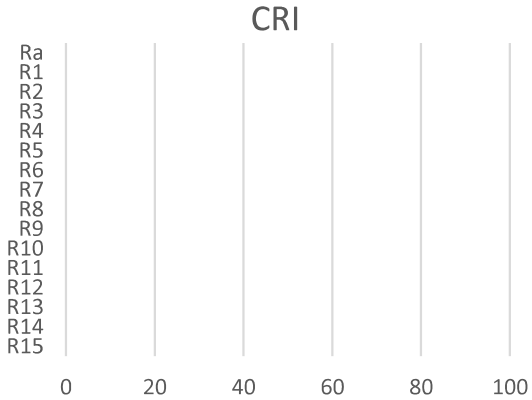












Thomann GmbH
Hans-Thomann-Str. 1
D-96138 Burgebrach, Germany

Burgebrach, 15.12.2018

Sebastian Laske

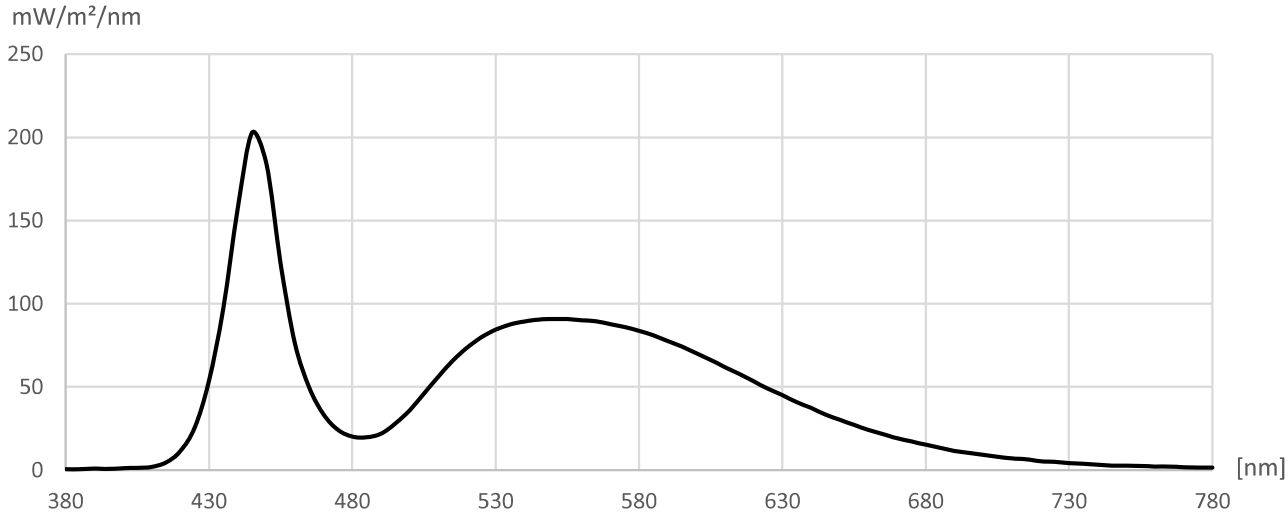
First, last name of inspector

Measurement protocol

th•mann

Test object: Ignition
Co9 LED Flood IP65 540W RGBW
Item 421760 / @ 3 m / 25° / white

Measurement file: 17-37-32.CSV
Date of measurement: 15.12.2018
Time of measurement: 17:37:32



R1	= 73,2	Ra	= 73,0	Illuminance	5430,37 lx	CIE1931	
R2	= 75,2	Re	= 63,6	Ee	17,405 W/m²	x	= 0,3112
R3	= 74,1	GAI	= 90,5	LER	312,0 lm/W	y	= 0,3200
R4	= 75,4						
R5	= 74,1			correlated color temperature (CCT)	6665 K	CIE1976	
R6	= 66,1			Duv	-0,0007	u'	= 0,2002
R7	= 79,8					v'	= 0,4632
R8	= 65,8			Saturation	8,7 %		
R9	= -12,9					CIE1960	
R10	= 39,0			Dominant wavelength	480 nm	u	= 0,2002
R11	= 74,3			Peak wavelength	445 nm	v	= 0,3088
R12	= 43,3						
R13	= 72,5			Flicker frequency	3000,4 Hz	TM30	
R14	= 85,2			Percent Flicker	f > 400 Hz %	Rf	= 68,3
R15	= 69,3			Flicker index	f > 400 Hz	Rg	= 95,9

[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	0,69	440	156,85	500	36,05	560	90,14	620	53,44	680	15,42	740	3,27
385	0,59	445	202,75	505	46,21	565	89,48	625	49,00	685	13,50	745	2,76
390	1,06	450	184,19	510	56,23	570	87,77	630	45,17	690	11,66	750	2,71
395	0,75	455	124,52	515	65,63	575	86,04	635	40,87	695	10,40	755	2,57
400	1,20	460	76,37	520	73,56	580	83,83	640	37,44	700	9,28	760	2,23
405	1,46	465	49,66	525	79,83	585	81,04	645	33,48	705	8,15	765	2,21
410	1,98	470	33,50	530	84,47	590	77,59	650	30,33	710	7,10	770	1,83
415	4,68	475	24,22	535	87,56	595	74,28	655	27,26	715	6,65	775	1,63
420	11,52	480	20,26	540	89,42	600	70,29	660	24,24	720	5,42	780	1,63
425	25,76	485	19,81	545	90,53	605	66,30	665	21,84	725	4,98		
430	53,50	490	21,97	550	90,87	610	61,91	670	19,16	730	4,27		
435	97,00	495	28,02	555	90,81	615	57,78	675	17,28	735	3,91		

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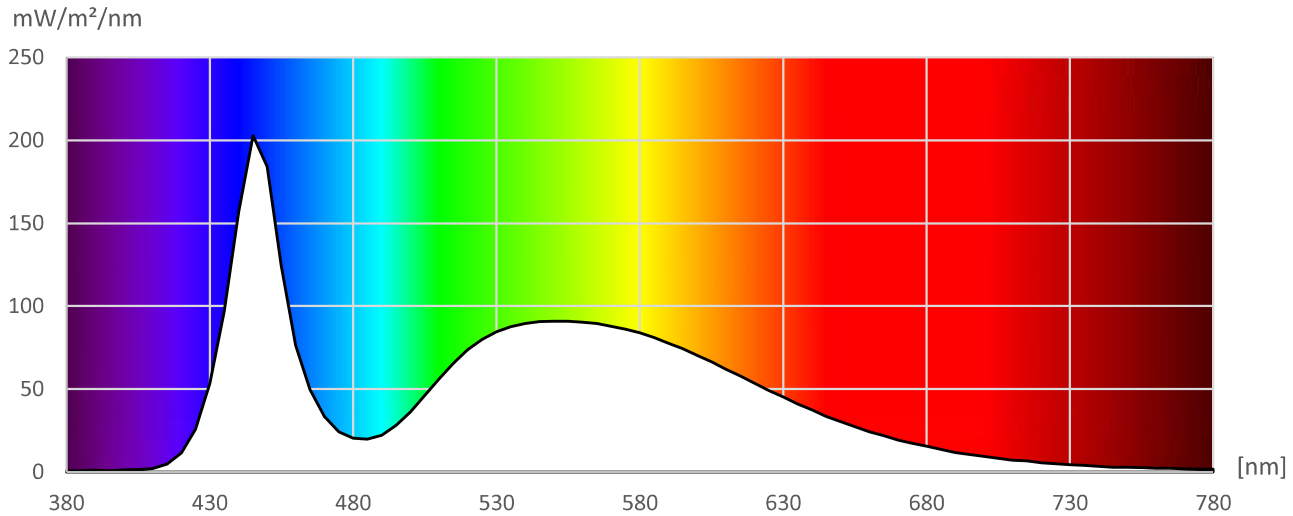
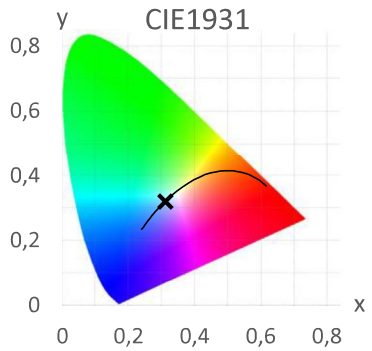
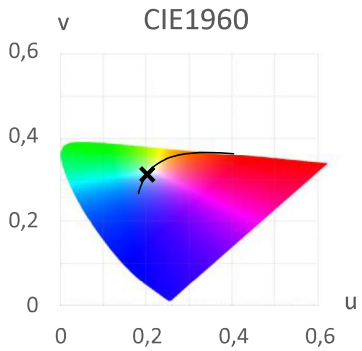
Burgebrach, 15.12.2018

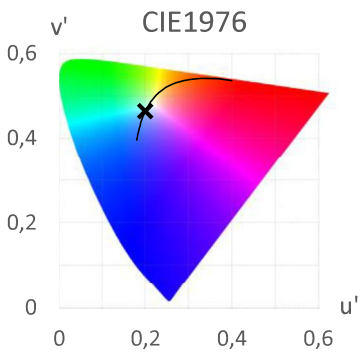
Measurement protocol

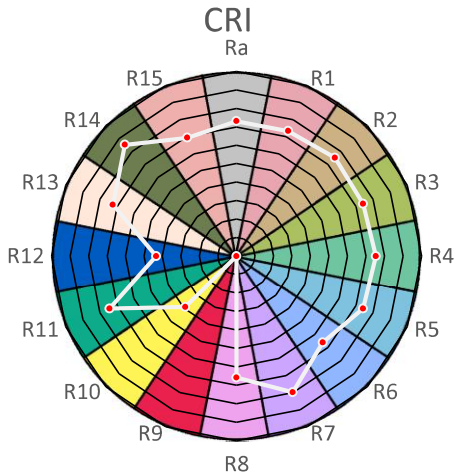
Test object:	Ignition Co9 LED Flood IP65 540W RGBW Item 421760 / @ 3 m / 25° / white	Measurement file: Date of measurement: Time of measurement:	17-37-32.CSV 15.12.2018 17:37:32

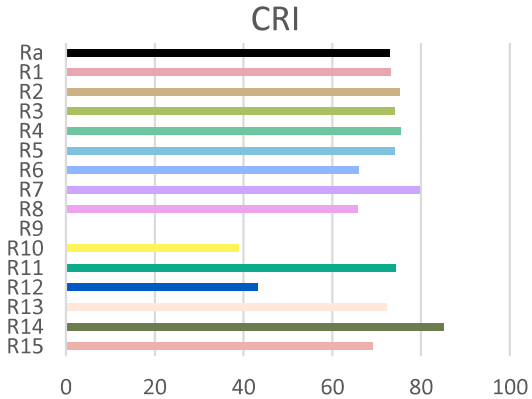












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