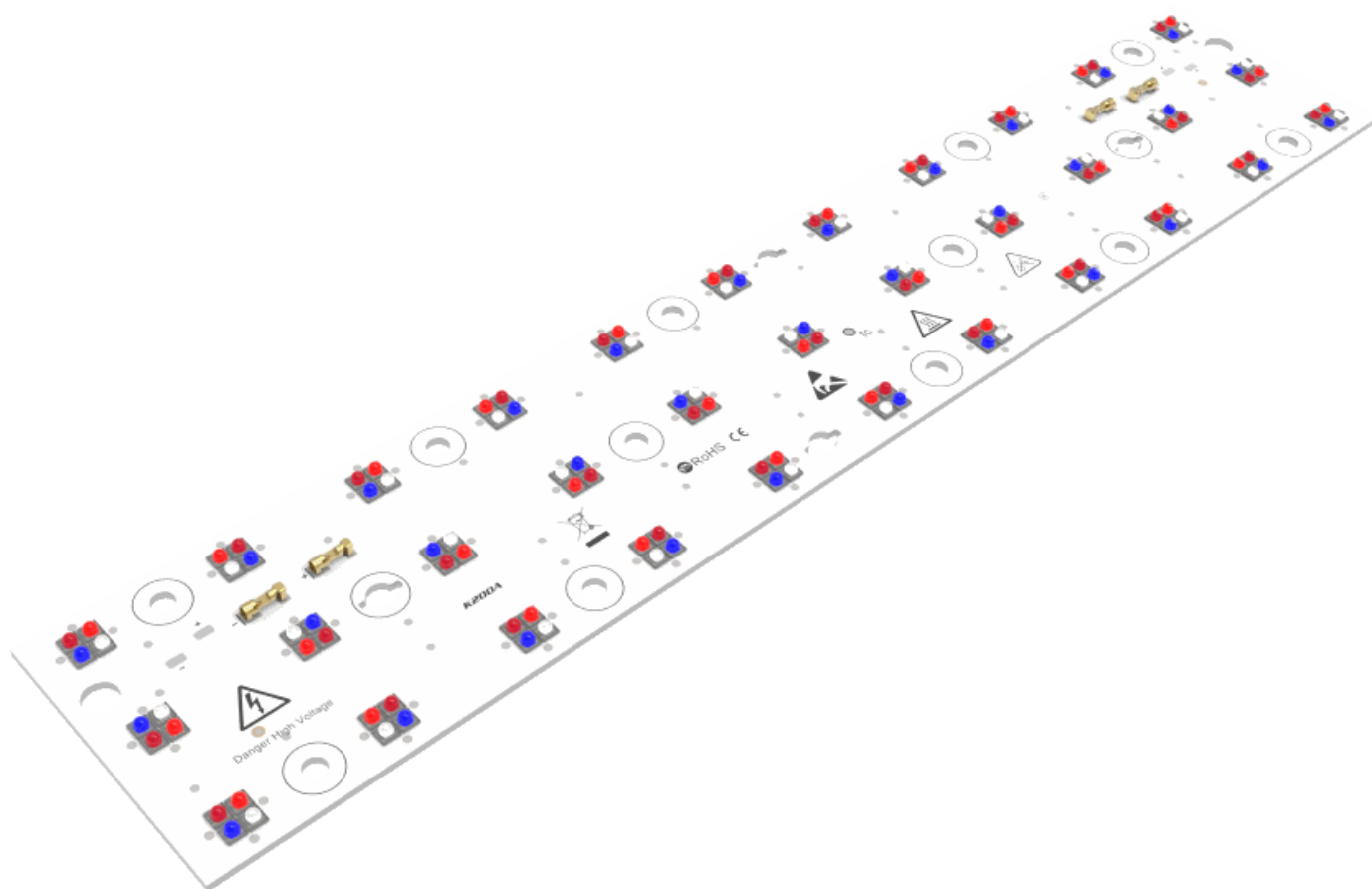


CEZOS

GrowEmity 3x11 - K200



LED  Light for you
powered by OSRAM



MTx
MechaTronix

The GrowEmity LED light source allows to accelerate plant growth and increase harvest. It is even possible to regulate plant growth and blooming time. Unlike an artificial light sources, LED light sources have specially matched spectrum for specific plants. Additionally, LEDs generate more light and less heat than sodium lamp, allow for lighting from side of plants. LED light sources are used in artificial plantation without daylight.

Possibility to choose up to four colors from the following (one set of 33 LEDs).

Colour	λ [nm] / CCT [K]	Input Current [mA]	Forward Voltage [V]	Power [W]	Radiant Power [mW] / Luminous Flux [lm]	PPF [$\mu\text{mol/s}$]	PPF/W [$\mu\text{mol/J}$]
RED	625	350	69,3	24,3	2717	62,04	2,56
		500	72,8	36,4	3844	87,78	2,41
		700	77,1	54,0	5318	121,44	2,25
		800	78,8	63,1	6002	137,06	2,17
		1000	83,3	83,3	7371	168,30	2,02
HYPER RED	657	350	71,0	24,8	14025	76,07	3,06
		500	74,3	37,1	19775	107,25	2,89
		700	79,2	55,4	26788	145,28	2,62
		800	81,8	65,5	30575	165,82	2,53
		1000	84,8	84,8	36816	199,67	2,35
FAR RED	727	350	71,0	24,8	14025	76,07	3,06
		500	64,4	32,2	12330	7,44	0,23
		700	68,3	47,8	16703	10,08	0,21
		800	69,6	55,7	19064	11,51	0,21
		1000	73,3	73,3	22956	13,86	0,19
DEEP BLUE	455	350	94,1	32,9	20955	77,55	2,36
		500	95,7	47,9	29127	107,79	2,25
		700	98,0	68,6	36043	133,39	1,94
		800	98,7	78,9	39815	147,35	1,87
		1000	101,0	101,0	50292	186,12	1,84
BLUE	470	350	94,1	32,9	924	53,46	1,62
		500	96,7	48,4	1221	70,62	1,46
		700	100,5	70,3	1580	91,41	1,30
		800	100,8	80,6	1738	100,54	1,25
		1000	104,2	104,2	2053	118,80	1,14
TRUE GREEN	528	350	110,6	38,7	3993	36,96	0,95
		500	113,4	56,7	5205	48,18	0,85
		700	116,9	81,8	6631	61,38	0,75
		800	117,2	93,8	7261	67,21	0,72
		1000	121,3	121,3	8521	78,87	0,65
AMBER	617	350	69,3	24,3	2944	65,01	2,68
		500	72,8	36,4	4139	91,41	2,51
		700	77,1	54,0	5648	124,74	2,31
		800	78,8	63,0	6345	140,14	2,22
		1000	83,4	83,4	7740	170,94	2,05
YELLOW	590	350	72,6	25,4	2706	28,71	1,13
		500	76,3	38,1	3701	39,27	1,03
		700	80,5	56,4	4728	50,16	0,89
		800	81,0	64,8	5070	53,79	0,83
		1000	86,0	86,0	5754	61,05	0,71
WHITE	5000	350	90,8	31,8	4881	64,68	2,04
		500	94,1	47,0	6687	86,46	1,84
		700	97,4	68,1	8785	112,20	1,65
		800	98,3	78,7	9664	123,42	1,57
		1000	109,4	109,4	11198	143,01	1,35

Radiant Power for Hyper Red, Far Red, Deep Blue. Luminous flux for rest of colour.

CCT only for White colour.

CALCULATED PARAMETERS AT $T_J = 25^{\circ}\text{C}$

Name	GrowEmity 3x11 – K200
Size	278x53 mm
Power Supply Type	Constant Current (CC)
Number Of Channels	1
Power Supply Current	Max. 1000 mA / channel
Far Red LED	OSRAM - GF CSSPM1.24
Red LED	OSRAM - GH CSSPM1.24
Deep Blue LED	OSRAM - GD CSSPM1.14
White LED	OSRAM - GW CSHPM1.PM
Ambient Temperature	0 - 40°C
Material Type / Thickness	MCPCB / 1,5 mm

GROWEMITY 3x11 RFBW - K200

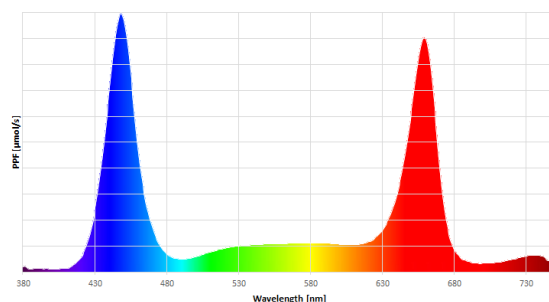
	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm] / CCT [K]	Radiant Power [mW] / Luminous Flux [lm]	PPF [$\mu\text{mol/s}$]	PPF/W [$\mu\text{mol/J}$]	Total PPF [$\mu\text{mol/s}$]	Total PPF/W [$\mu\text{mol/J}$]	Article Number
GrowEmity 3x11 RFBW - K200	350	316,8	110,9	RED	657	14025	76,07	3,06	223,58	2,02	LO-278053-RFBW-C1000-K200
				FAR RED	727	8745	5,28	0,25			
				DEEP BLUE	455	20955	77,55	2,36			
				WHITE	5000	4881	64,68	2,04			
	500	328,4	164,2	RED	657	19775	107,25	2,89	308,95	1,88	LO-278053-RFBW-C1000-K200
				FAR RED	727	12330	7,44	0,23			
				DEEP BLUE	455	29127	107,79	2,25			
				WHITE	5000	6687	86,46	1,84			
	700	342,9	240,0	RED	657	26788	145,28	2,62	400,95	1,67	LO-278053-RFBW-C1000-K200
				FAR RED	727	16703	10,08	0,21			
				DEEP BLUE	455	36043	133,39	1,94			
				WHITE	5000	8785	112,20	1,65			
	800	348,5	278,8	RED	657	30575	165,82	2,53	448,10	1,61	LO-278053-RFBW-C1000-K200
				FAR RED	727	19064	11,51	0,21			
				DEEP BLUE	455	39815	147,35	1,87			
				WHITE	5000	9664	123,42	1,57			

Parameters were calculated for temperatures $T_J = 25^{\circ}\text{C}$

Radiant power and wavelength for color LEDs; Luminous flux and color temperature for white LEDs.

Values of these parameters were calculated for default bin and with tolerances of 15%.

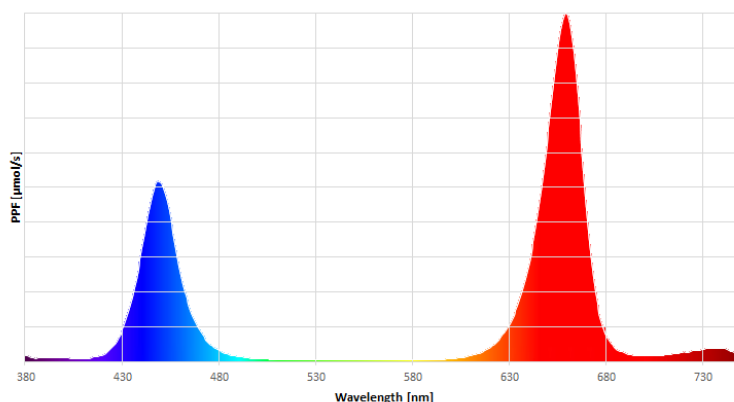
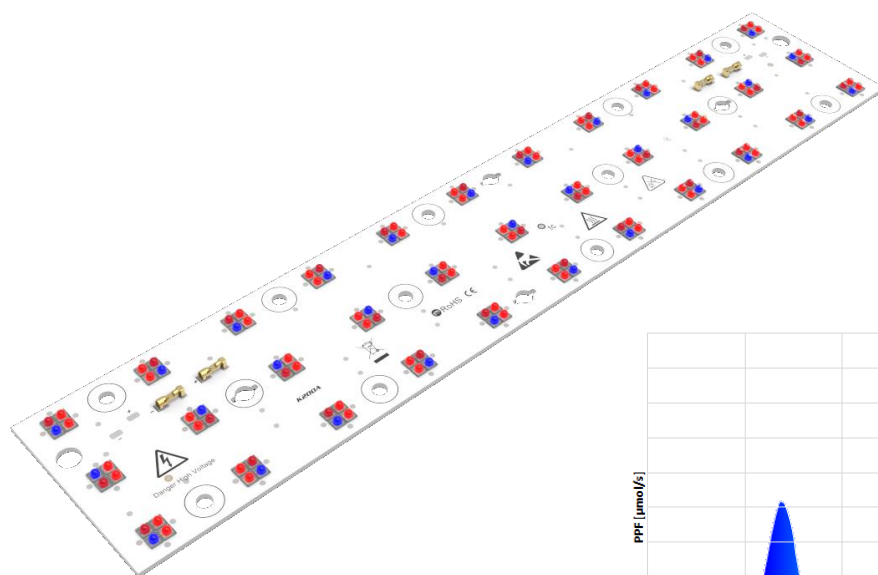
Different type of plants have different requirements for the best growth, so to maximized effect, GrowEmity light sources have many sets of LEDs configuration. Most commands LED types are: red, far red, hyper red, blue, deep blue and white with different colour temperature. Some examples are below.



GROWEMITY 3x11 RRFB - K200

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm]	Radiant Power [mW]	PPF [$\mu\text{mol/s}$]	PPF/W [$\mu\text{mol/J}$]	Total PPF [$\mu\text{mol/s}$]	Total PPF/W [$\mu\text{mol/J}$]	Article Number
GrowEmity 3x11 RRFB - K200	350	297,0	104,0	RED	657	28050	152,13	3,06	234,96	2,26	LO-278053-RRFB-C1000-K200
				FAR RED	727	8745	5,28	0,25			
				DEEP BLUE	455	20955	77,55	2,36			
	500	308,6	154,3	RED	657	39551	214,50	2,89	329,74	2,14	LO-278053-RRFB-C1000-K200
				FAR RED	727	12330	7,44	0,23			
				DEEP BLUE	455	29127	107,79	2,25			
	700	324,7	227,3	RED	657	53576	290,57	2,62	434,04	1,91	LO-278053-RRFB-C1000-K200
				FAR RED	727	16703	10,08	0,21			
				DEEP BLUE	455	36043	133,39	1,94			
	800	332,0	265,6	RED	657	61149	331,64	2,53	490,50	1,85	LO-278053-RRFB-C1000-K200
				FAR RED	727	19064	11,51	0,21			
				DEEP BLUE	455	39815	147,35	1,87			

Parameters were calculated for temperatures $T_j = 25^\circ\text{C}$
 Values of these parameters were calculated for default bin and with tolerances of 15%.



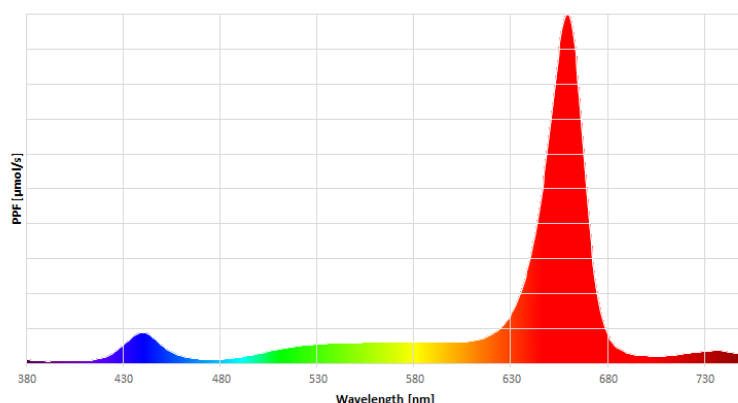
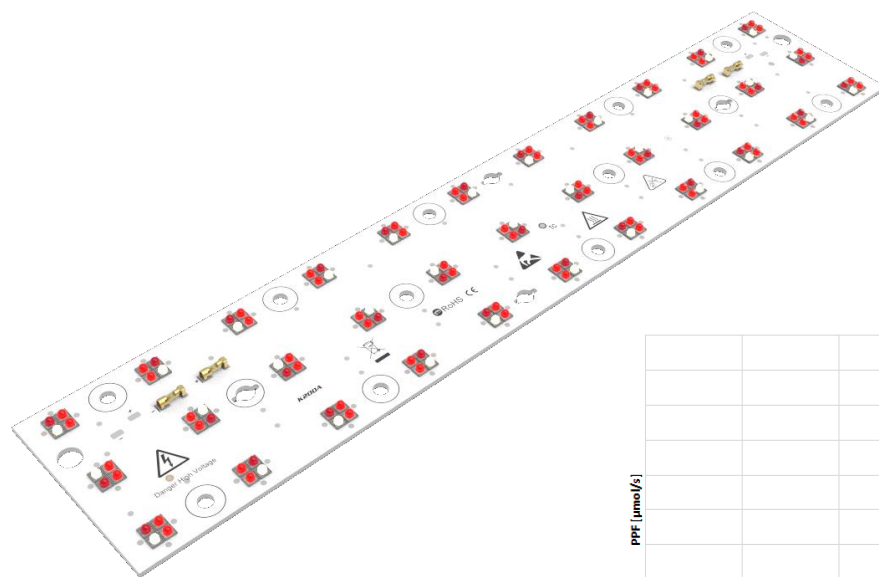
GROWEMITY 3x11 RRFW - K200

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm] / CCT [K]	Radiant Power [mW] / Luminous Flux [lm]	PPF [$\mu\text{mol/s}$]	PPF/W [$\mu\text{mol/J}$]	Total PPF [$\mu\text{mol/s}$]	Total PPF/W [$\mu\text{mol/J}$]	Article Number
GrowEmity 3x11 RRFW - K200	350	293,7	102,8	RED	657	28050	152,13	3,06	222,09	2,16	LO-278053-RRFW-C1000-K200
				FAR RED	727	8745	5,28	0,25			
				WHITE	5000	4881	64,68	2,04			
	500	306,9	153,5	RED	657	39551	214,50	2,89	308,41	2,01	LO-278053-RRFW-C1000-K200
				FAR RED	727	12330	7,44	0,23			
				WHITE	5000	6687	86,46	1,84			
	700	324,1	226,8	RED	657	53576	290,57	2,62	412,85	1,82	LO-278053-RRFW-C1000-K200
				FAR RED	727	16703	10,08	0,21			
				WHITE	5000	8785	112,20	1,65			
	800	331,7	265,3	RED	657	61149	331,64	2,53	466,57	1,76	LO-278053-RRFW-C1000-K200
				FAR RED	727	19064	11,51	0,21			
				WHITE	5000	9664	123,42	1,57			

Parameters were calculated for temperatures $T_J = 25^\circ\text{C}$

Radiant power and wavelength for color LEDs; Luminous flux and color temperature for white LEDs.

Values of these parameters were calculated for default bin and with tolerances of 15%.



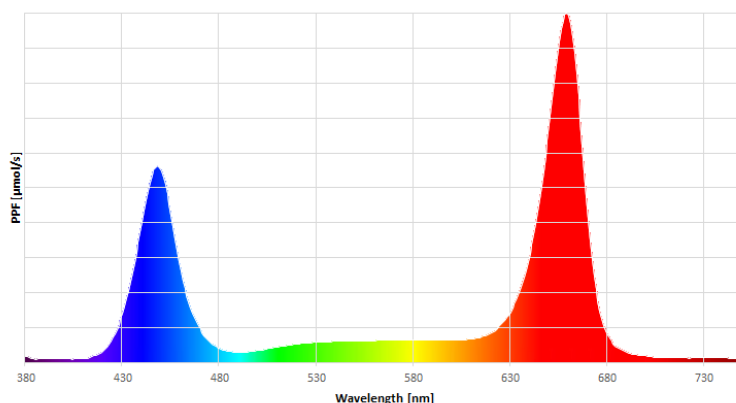
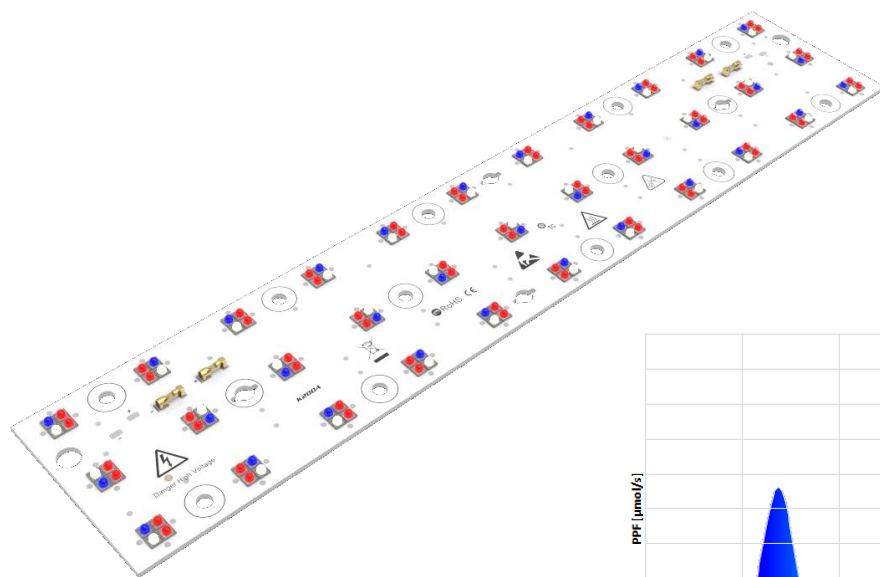
GROWEMITY 3X11 RRBW - K200

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm] / CCT [K]	Radiant Power [mW] / Luminous Flux [lm]	PPF [$\mu\text{mol/s}$]	PPF/W [$\mu\text{mol/J}$]	Total PPF [$\mu\text{mol/s}$]	Total PPF/W [$\mu\text{mol/J}$]	Article Number
GrowEmity 3x11 RRBW - K200	350	326,7	114,3	RED	657	28050	152,13	3,06	294,36	2,57	LO-278053-RRBW-C1000-K200
				DEEP BLUE	455	20955	77,55	2,36			
				WHITE	5000	4881	64,68	2,04			
	500	338,3	169,1	RED	657	39551	214,50	2,89	408,76	2,42	LO-278053-RRBW-C1000-K200
				DEEP BLUE	455	29127	107,79	2,25			
				WHITE	5000	6687	86,46	1,84			
	700	353,8	247,6	RED	657	53576	290,57	2,62	536,15	2,17	LO-278053-RRBW-C1000-K200
				DEEP BLUE	455	36043	133,39	1,94			
				WHITE	5000	8785	112,20	1,65			
	800	360,7	288,6	RED	657	61149	331,64	2,53	602,41	2,09	LO-278053-RRBW-C1000-K200
				DEEP BLUE	455	39815	147,35	1,87			
				WHITE	5000	9664	123,42	1,57			

Parameters were calculated for temperatures $T_j = 25^\circ\text{C}$

Radiant power and wavelength for color LEDs; Luminous flux and color temperature for white LEDs.

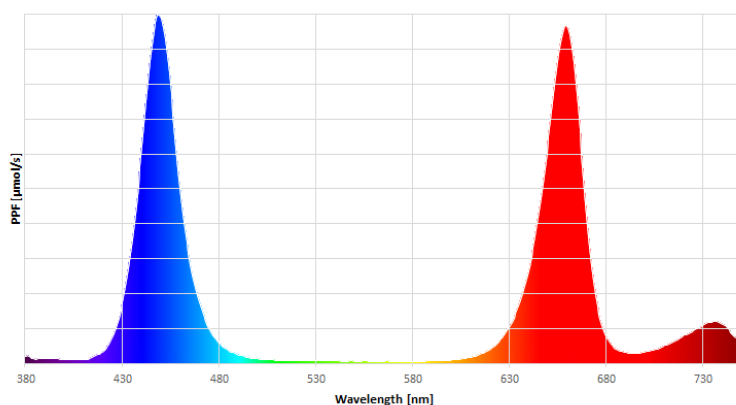
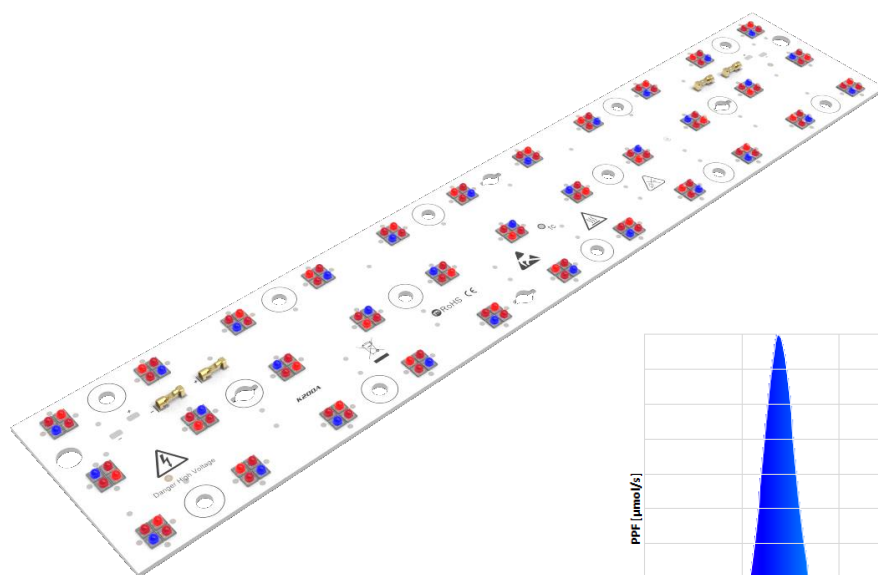
Values of these parameters were calculated for default bin and with tolerances of 15%.



GROWEMITY 3x11 RFFB - K200

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm]	Radiant Power [mW]	PPF [$\mu\text{mol/s}$]	PPF/W [$\mu\text{mol/J}$]	Total PPF [$\mu\text{mol/s}$]	Total PPF/W [$\mu\text{mol/J}$]	Article Number
GrowEmity 3x11 RFFB - K200	350	287,1	100,5	RED	657	14025	76,07	3,06	164,18	1,63	LO-278053-RFFB-C1000-K200
				FAR RED	727	17490	10,56	0,25			
				DEEP BLUE	455	20955	77,55	2,36			
	500	298,7	149,3	RED	657	19775	107,25	2,89	229,94	1,54	LO-278053-RFFB-C1000-K200
				FAR RED	727	24661	14,89	0,23			
				DEEP BLUE	455	29127	107,79	2,25			
	700	313,8	219,7	RED	657	26788	145,28	2,62	298,84	1,36	LO-278053-RFFB-C1000-K200
				FAR RED	727	33406	20,17	0,21			
				DEEP BLUE	455	36043	133,39	1,94			
	800	319,8	255,8	RED	657	30575	165,82	2,53	336,19	1,31	LO-278053-RFFB-C1000-K200
				FAR RED	727	38128	23,02	0,21			
				DEEP BLUE	455	39815	147,35	1,87			

Parameters were calculated for temperatures $T_J = 25^\circ\text{C}$
 Values of these parameters were calculated for default bin and with tolerances of 15%.



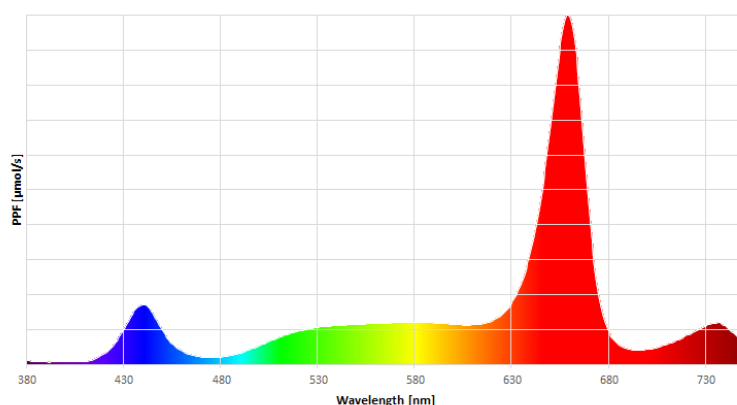
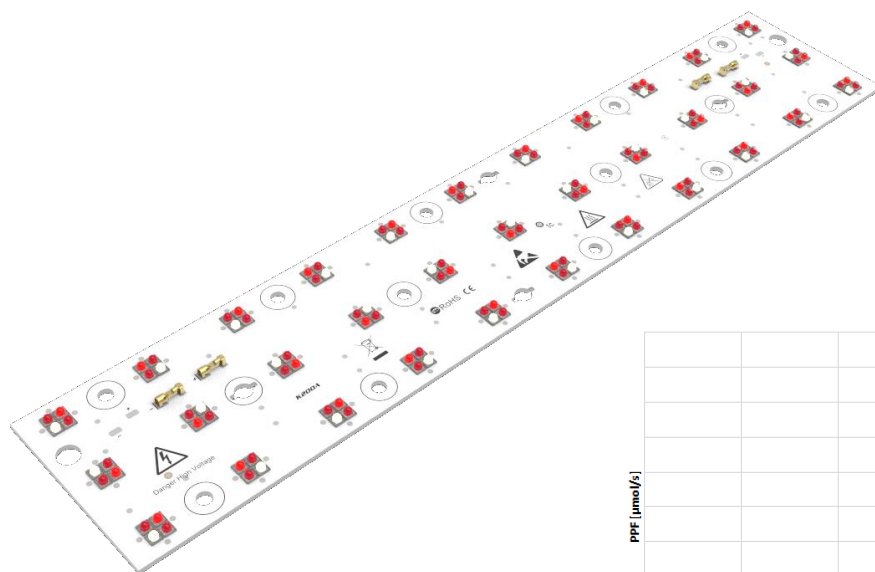
GROWEMITY 3x11 RFFW - K200

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm] / CCT [K]	Radiant Power [mW] / Luminous Flux [lm]	PPF [$\mu\text{mol/s}$]	PPF/W [$\mu\text{mol/J}$]	Total PPF [$\mu\text{mol/s}$]	Total PPF/W [$\mu\text{mol/J}$]	Article Number
GrowEmity 3x11 RFFW - K200	350	283,8	99,3	RED	657	14025	76,07	3,06	151,31	1,52	LO-278053-RFFW-C1000-K200
				FAR RED	727	17490	10,56	0,25			
				WHITE	5000	4881	64,68	2,04			
	500	297,0	148,5	RED	657	19775	107,25	2,89	208,60	1,40	LO-278053-RFFW-C1000-K200
				FAR RED	727	24661	14,89	0,23			
				WHITE	5000	6687	86,46	1,84			
	700	313,2	219,2	RED	657	26788	145,28	2,62	277,65	1,27	LO-278053-RFFW-C1000-K200
				FAR RED	727	33406	20,17	0,21			
				WHITE	5000	8785	112,20	1,65			
	800	319,4	255,6	RED	657	30575	165,82	2,53	312,26	1,22	LO-278053-RFFW-C1000-K200
				FAR RED	727	38128	23,02	0,21			
				WHITE	5000	9664	123,42	1,57			

Parameters were calculated for temperatures $T_J = 25^\circ\text{C}$

Radiant power and wavelength for color LEDs; Luminous flux and color temperature for white LEDs.

Values of these parameters were calculated for default bin and with tolerances of 15%.



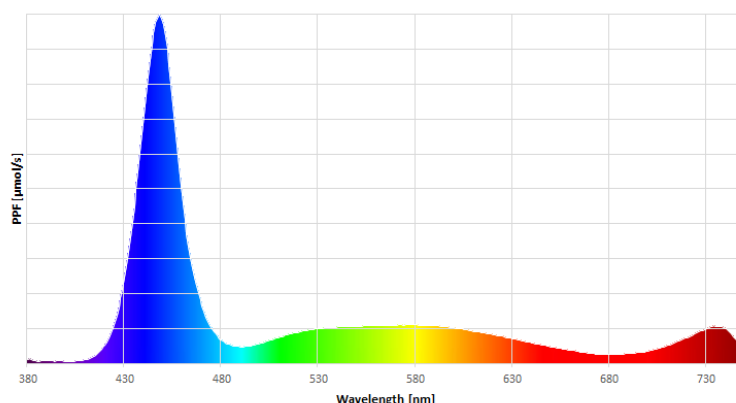
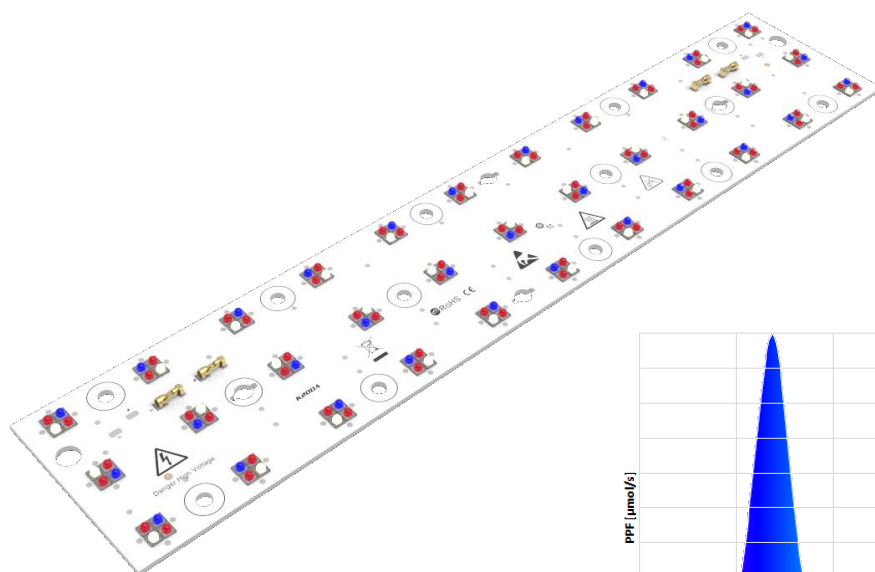
GROWEMITY 3x11 FFBW - K200

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm] / CCT [K]	Radiant Power [mW] / Luminous Flux [lm]	PPF [$\mu\text{mol/s}$]	PPF/W [$\mu\text{mol/J}$]	Total PPF [$\mu\text{mol/s}$]	Total PPF/W [$\mu\text{mol/J}$]	Article Number
GrowEmity 3x11 FFBW - K200	350	306,9	107,4	FAR RED	727	17490	10,56	0,25	152,79	1,42	LO-278053-FFBW-C1000-K200
				DEEP BLUE	455	20955	77,55	2,36			
				WHITE	5000	4881	64,68	2,04			
	500	318,5	159,2	FAR RED	727	24661	14,89	0,23	209,14	1,31	LO-278053-FFBW-C1000-K200
				DEEP BLUE	455	29127	107,79	2,25			
				WHITE	5000	6687	86,46	1,84			
	700	332,0	232,4	FAR RED	727	33406	20,17	0,21	265,76	1,14	LO-278053-FFBW-C1000-K200
				DEEP BLUE	455	36043	133,39	1,94			
				WHITE	5000	8785	112,20	1,65			
	800	336,3	269,0	FAR RED	727	38128	23,02	0,21	293,79	1,09	LO-278053-FFBW-C1000-K200
				DEEP BLUE	455	39815	147,35	1,87			
				WHITE	5000	9664	123,42	1,57			

Parameters were calculated for temperatures $T_J = 25^\circ\text{C}$

Radiant power and wavelength for color LEDs; Luminous flux and color temperature for white LEDs.

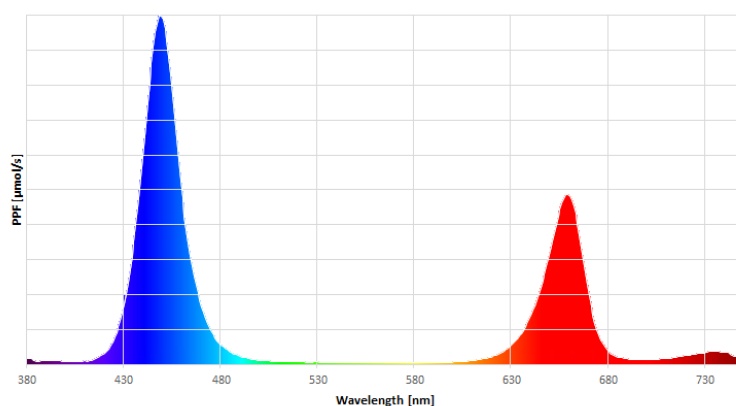
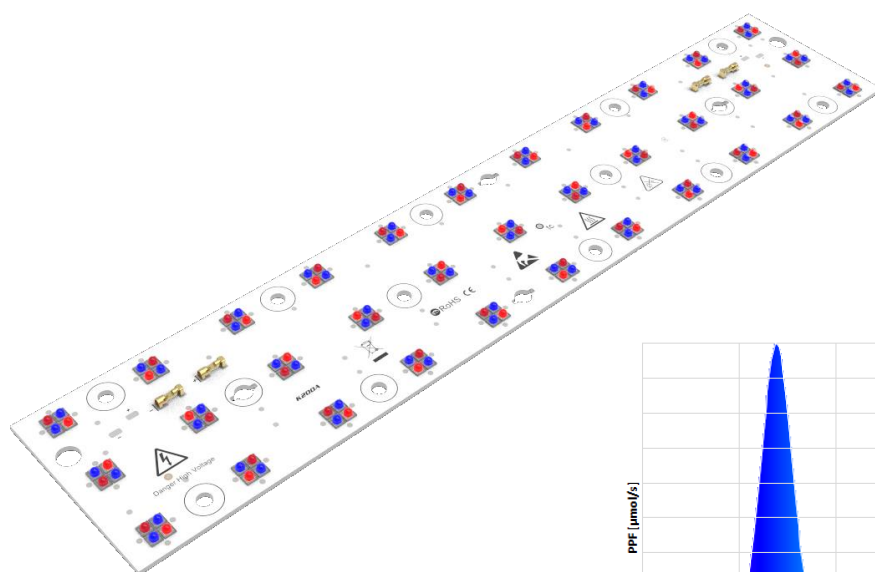
Values of these parameters were calculated for default bin and with tolerances of 15%.



GROWEMITY 3x11 RFBB - K200

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm]	Radiant Power [mW]	PPF [$\mu\text{mol/s}$]	PPF/W [$\mu\text{mol/J}$]	Total PPF [$\mu\text{mol/s}$]	Total PPF/W [$\mu\text{mol/J}$]	Article Number
GrowEmity 3x11 RFBB - K200	350	320,1	112,0	RED	657	14025	76,07	3,06	236,45	2,11	LO-278053-RFBB-C1000-K200
				FAR RED	727	8745	5,28	0,25			
				DEEP BLUE	455	41910	155,10	2,36			
	500	330,0	165,0	RED	657	19775	107,25	2,89	330,29	2,00	LO-278053-RFBB-C1000-K200
				FAR RED	727	12330	7,44	0,23			
				DEEP BLUE	455	58255	215,59	2,25			
	700	343,5	240,5	RED	657	26788	145,28	2,62	422,14	1,76	LO-278053-RFBB-C1000-K200
				FAR RED	727	16703	10,08	0,21			
				DEEP BLUE	455	72085	266,77	1,94			
	800	348,8	279,0	RED	657	30575	165,82	2,53	472,02	1,69	LO-278053-RFBB-C1000-K200
				FAR RED	727	19064	11,51	0,21			
				DEEP BLUE	455	79629	294,69	1,87			

Parameters were calculated for temperatures $T_j = 25^\circ\text{C}$
 Values of these parameters were calculated for default bin and with tolerances of 15%.



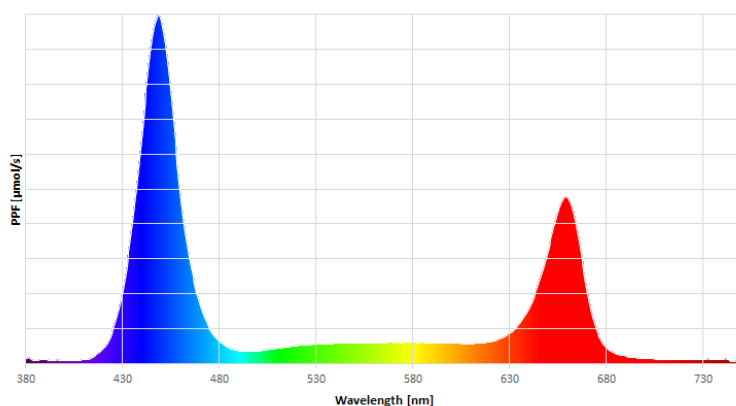
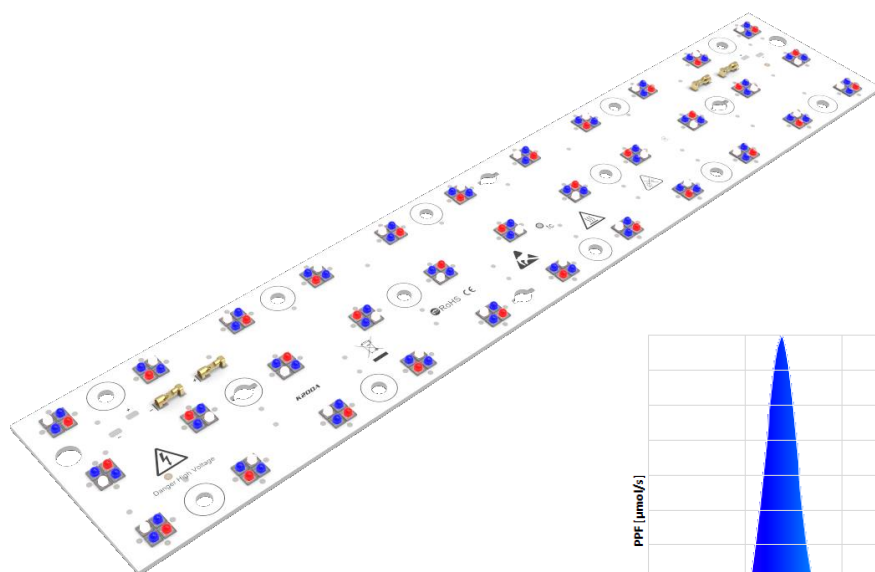
GROWEMITY 3x11 RBBW - K200

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm] / CCT [K]	Radiant Power [mW] / Luminous Flux [lm]	PPF [$\mu\text{mol/s}$]	PPF/W [$\mu\text{mol/J}$]	Total PPF [$\mu\text{mol/s}$]	Total PPF/W [$\mu\text{mol/J}$]	Article Number
GrowEmity 3x11 RBBW - K200	350	349,8	122,4	RED	657	14025	76,07	3,06	295,85	2,42	LO-278053-RBBW-C1000-K200
				DEEP BLUE	455	41910	155,10	2,36			
				WHITE	5000	4881	64,68	2,04			
	500	359,7	179,9	RED	657	19775	107,25	2,89	409,30	2,28	LO-278053-RBBW-C1000-K200
				DEEP BLUE	455	58255	215,59	2,25			
				WHITE	5000	6687	86,46	1,84			
	700	372,6	260,8	RED	657	26788	145,28	2,62	524,26	2,01	LO-278053-RBBW-C1000-K200
				DEEP BLUE	455	72085	266,77	1,94			
				WHITE	5000	8785	112,20	1,65			
	800	377,5	302,0	RED	657	30575	165,82	2,53	583,93	1,93	LO-278053-RBBW-C1000-K200
				DEEP BLUE	455	79629	294,69	1,87			
				WHITE	5000	9664	123,42	1,57			

Parameters were calculated for temperatures $T_J = 25^\circ\text{C}$

Radiant power and wavelength for color LEDs; Luminous flux and color temperature for white LEDs.

Values of these parameters were calculated for default bin and with tolerances of 15%.



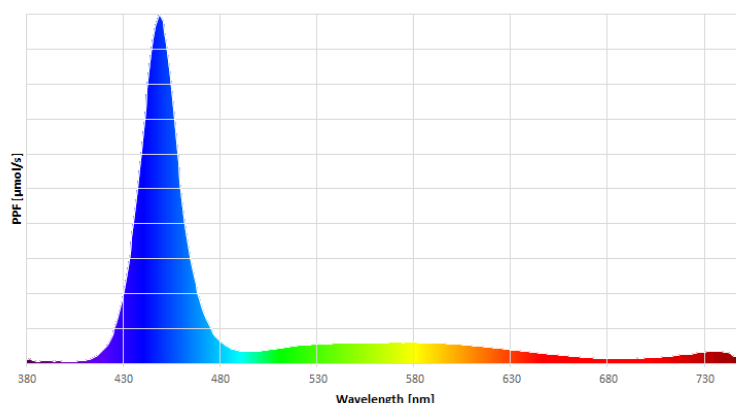
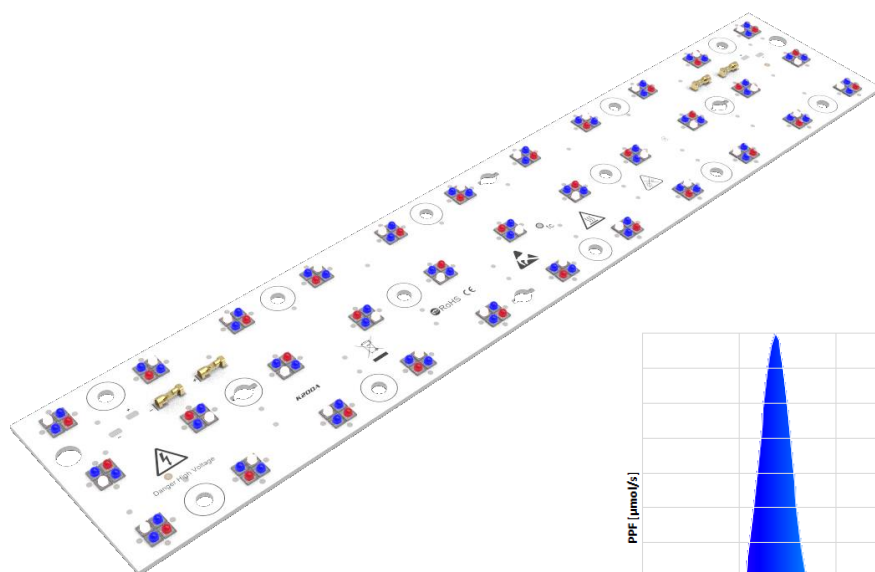
GROWEMITY 3x11 FBBW - K200

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm] / CCT [K]	Radiant Power [mW] / Luminous Flux [lm]	PPF [$\mu\text{mol/s}$]	PPF/W [$\mu\text{mol/J}$]	Total PPF [$\mu\text{mol/s}$]	Total PPF/W [$\mu\text{mol/J}$]	Article Number
GrowEmity 3x11 FBBW - K200	350	339,9	119,0	FAR RED	727	8745	5,28	0,25	225,06	1,89	LO-278053-FBBW-C1000-K200
				DEEP BLUE	455	41910	155,10	2,36			
				WHITE	5000	4881	64,68	2,04			
	500	349,8	174,9	FAR RED	727	12330	7,44	0,23	309,49	1,77	LO-278053-FBBW-C1000-K200
				DEEP BLUE	455	58255	215,59	2,25			
				WHITE	5000	6687	86,46	1,84			
	700	361,7	253,2	FAR RED	727	16703	10,08	0,21	389,06	1,54	LO-278053-FBBW-C1000-K200
				DEEP BLUE	455	72085	266,77	1,94			
				WHITE	5000	8785	112,20	1,65			
	800	365,3	292,2	FAR RED	727	19064	11,51	0,21	429,62	1,47	LO-278053-FBBW-C1000-K200
				DEEP BLUE	455	79629	294,69	1,87			
				WHITE	5000	9664	123,42	1,57			

Parameters were calculated for temperatures $T_J = 25^\circ\text{C}$

Radiant power and wavelength for color LEDs; Luminous flux and color temperature for white LEDs.

Values of these parameters were calculated for default bin and with tolerances of 15%.



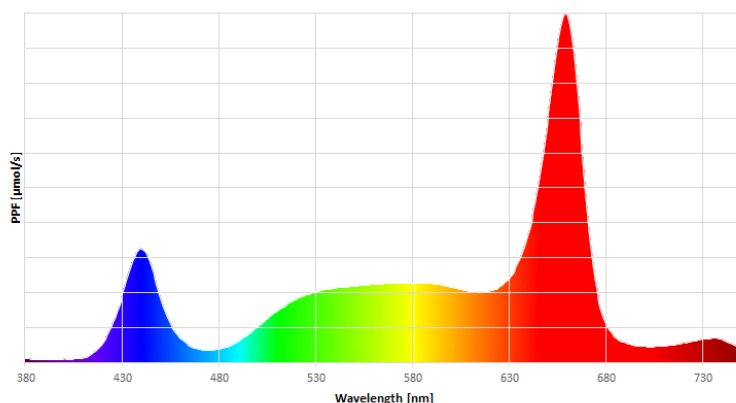
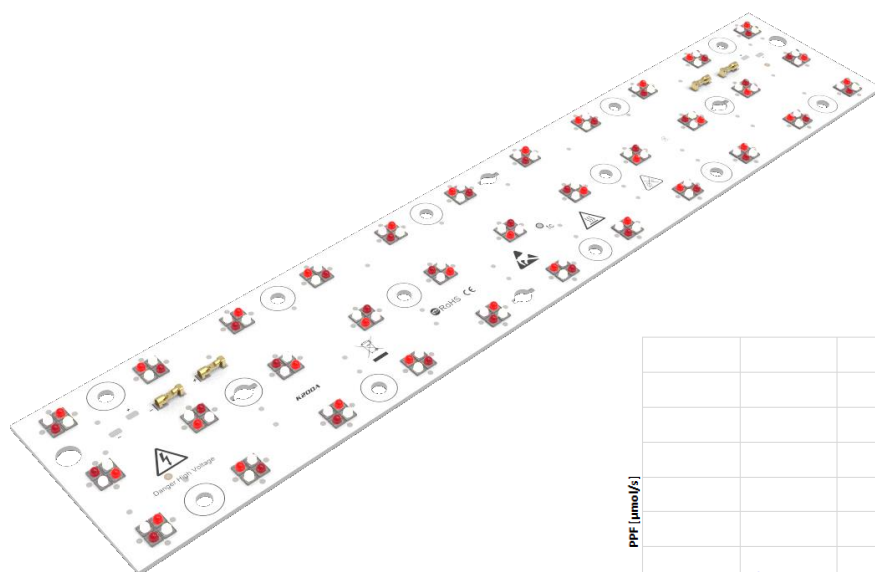
GROWEMITY 3x11 RFWW - K200

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm] / CCT [K]	Radiant Power [mW] / Luminous Flux [lm]	PPF [$\mu\text{mol/s}$]	PPF/W [$\mu\text{mol/J}$]	Total PPF [$\mu\text{mol/s}$]	Total PPF/W [$\mu\text{mol/J}$]	Article Number
GrowEmity 3x11 RFWW - K200	350	313,5	109,7	RED	657	14025	76,07	3,06	210,71	1,92	L0-278053-RFWW-C1000-K200
				FAR RED	727	8745	5,28	0,25			
				WHITE	5000	9761	129,36	2,04			
	500	326,7	163,4	RED	657	19775	107,25	2,89	287,62	1,76	L0-278053-RFWW-C1000-K200
				FAR RED	727	12330	7,44	0,23			
				WHITE	5000	13373	172,92	1,84			
	700	342,2	239,5	RED	657	26788	145,28	2,62	379,77	1,59	L0-278053-RFWW-C1000-K200
				FAR RED	727	16703	10,08	0,21			
				WHITE	5000	17571	224,40	1,65			
	800	348,2	278,5	RED	657	30575	165,82	2,53	424,17	1,52	L0-278053-RFWW-C1000-K200
				FAR RED	727	19064	11,51	0,21			
				WHITE	5000	19328	246,84	1,57			

Parameters were calculated for temperatures $T_J = 25^\circ\text{C}$

Radiant power and wavelength for color LEDs; Luminous flux and color temperature for white LEDs.

Values of these parameters were calculated for default bin and with tolerances of 15%.



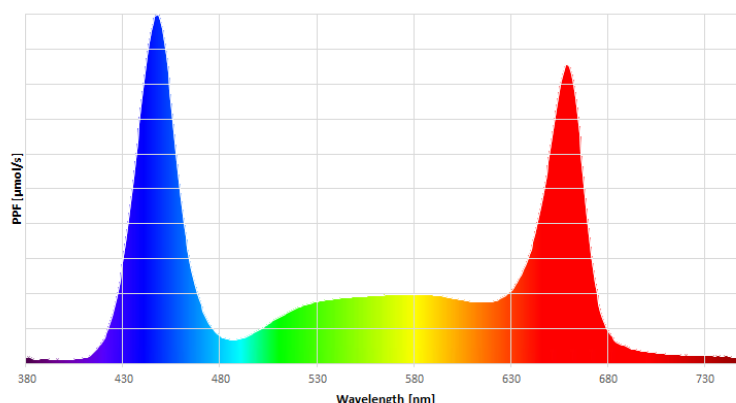
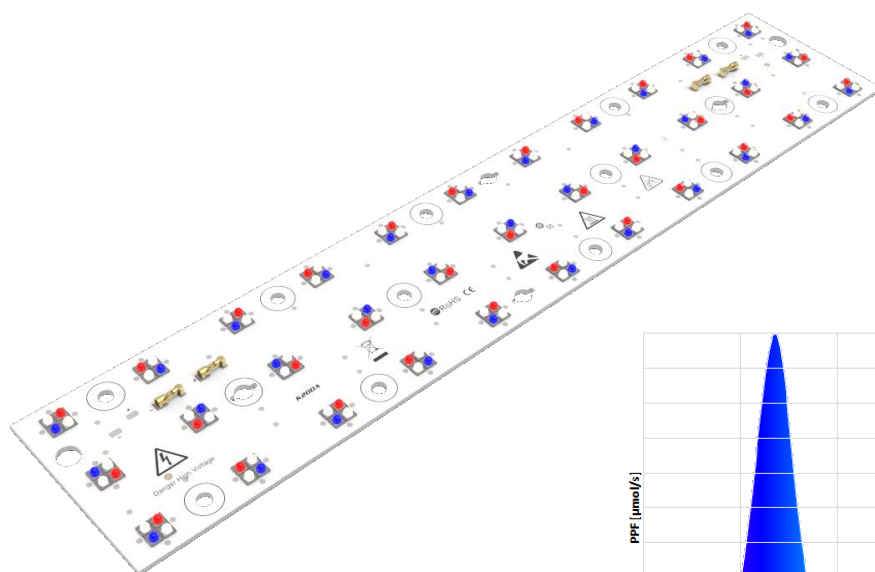
GROWEMITY 3x11 RBWW - K200

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm] / CCT [K]	Radiant Power [mW] / Luminous Flux [lm]	PPF [$\mu\text{mol/s}$]	PPF/W [$\mu\text{mol/J}$]	Total PPF [$\mu\text{mol/s}$]	Total PPF/W [$\mu\text{mol/J}$]	Article Number
GrowEmity 3x11 RBWW - K200	350	346,5	121,3	RED	657	14025	76,07	3,06	282,98	2,33	LO-278053-RBWW-C1000-K200
				DEEP BLUE	455	20955	77,55	2,36			
				WHITE	5000	9761	129,36	2,04			
	500	358,1	179,0	RED	657	19775	107,25	2,89	387,97	2,17	LO-278053-RBWW-C1000-K200
				DEEP BLUE	455	29127	107,79	2,25			
				WHITE	5000	13373	172,92	1,84			
	700	371,9	260,3	RED	657	26788	145,28	2,62	503,07	1,93	LO-278053-RBWW-C1000-K200
				DEEP BLUE	455	36043	133,39	1,94			
				WHITE	5000	17571	224,40	1,65			
	800	377,2	301,8	RED	657	30575	165,82	2,53	560,01	1,86	LO-278053-RBWW-C1000-K200
				DEEP BLUE	455	39815	147,35	1,87			
				WHITE	5000	19328	246,84	1,57			

Parameters were calculated for temperatures $T_J = 25^\circ\text{C}$

Radiant power and wavelength for color LEDs; Luminous flux and color temperature for white LEDs.

Values of these parameters were calculated for default bin and with tolerances of 15%.



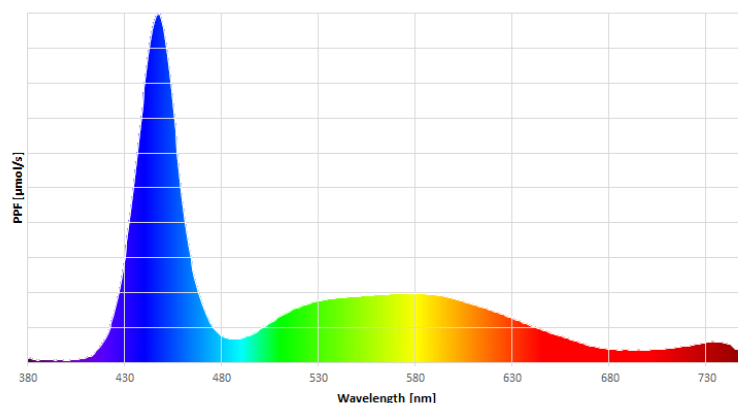
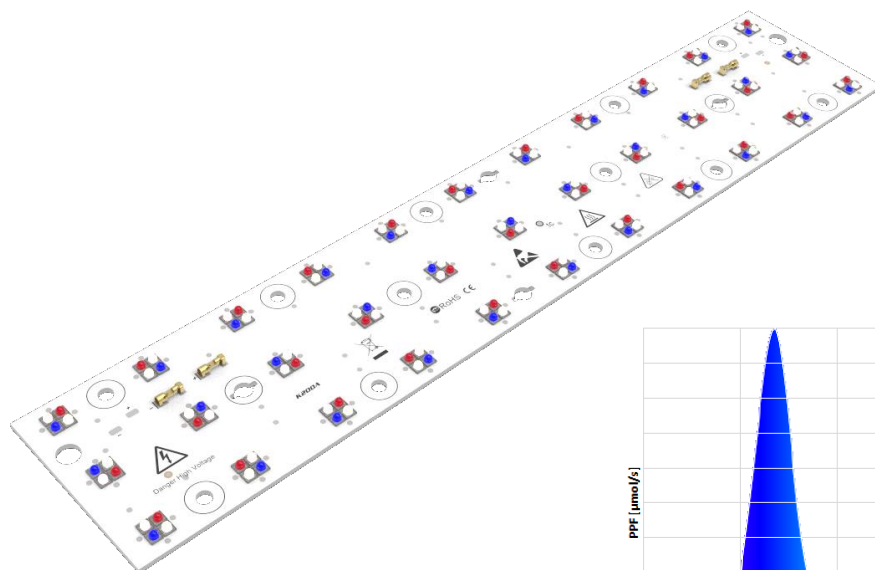
GROWEMITY 3x11 FBWW - K200

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm] / CCT [K]	Radiant Power [mW] / Luminous Flux [lm]	PPF [$\mu\text{mol/s}$]	PPF/W [$\mu\text{mol/J}$]	Total PPF [$\mu\text{mol/s}$]	Total PPF/W [$\mu\text{mol/J}$]	Article Number
GrowEmity 3x11 FBWW - K200	350	336,6	117,8	FAR RED	727	8745	5,28	0,25	212,19	1,80	L0-278053-FBWW-C1000-K200
				DEEP BLUE	455	20955	77,55	2,36			
				WHITE	5000	9761	129,36	2,04			
	500	348,2	174,1	FAR RED	727	12330	7,44	0,23	288,16	1,66	L0-278053-FBWW-C1000-K200
				DEEP BLUE	455	29127	107,79	2,25			
				WHITE	5000	13373	172,92	1,84			
	700	361,0	252,7	FAR RED	727	16703	10,08	0,21	367,87	1,46	L0-278053-FBWW-C1000-K200
				DEEP BLUE	455	36043	133,39	1,94			
				WHITE	5000	17571	224,40	1,65			
	800	365,0	292,0	FAR RED	727	19064	11,51	0,21	405,70	1,39	L0-278053-FBWW-C1000-K200
				DEEP BLUE	455	39815	147,35	1,87			
				WHITE	5000	19328	246,84	1,57			

Parameters were calculated for temperatures $T_J = 25^\circ\text{C}$

Radiant power and wavelength for color LEDs; Luminous flux and color temperature for white LEDs.

Values of these parameters were calculated for default bin and with tolerances of 15%.

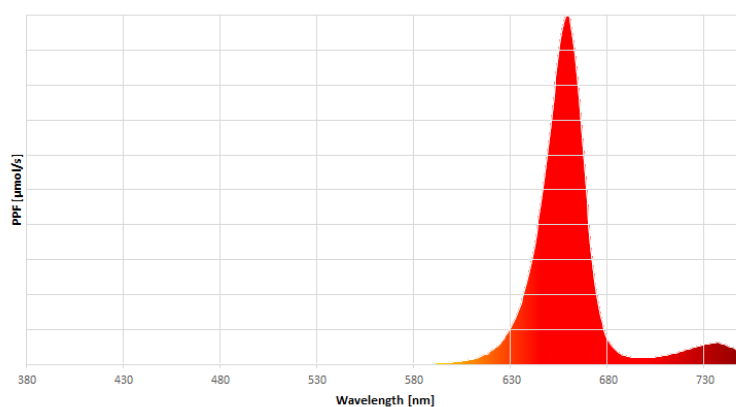
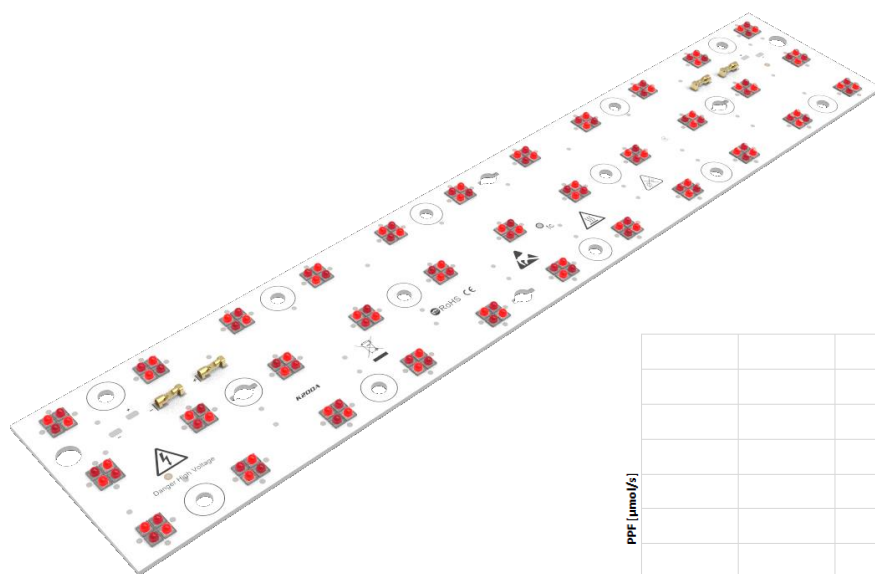


GROWEMITY 3x11 RRFF - K200

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm]	Radiant Power [mW]	PPF [$\mu\text{mol/s}$]	PPF/W [$\mu\text{mol/J}$]	Total PPF [$\mu\text{mol/s}$]	Total PPF/W [$\mu\text{mol/J}$]	Article Number
GrowEmity 3x11 RRFF - K200	350	264,0	92,4	RED	657	28050	152,13	3,06	162,69	1,76	LO-278053-RRFF-C1000-K200
				FAR RED	727	17490	10,56	0,25			
	500	277,2	138,6	RED	657	39551	214,50	2,89	229,39	1,66	LO-278053-RRFF-C1000-K200
				FAR RED	727	24661	14,89	0,23			
	700	295,0	206,5	RED	657	53576	290,57	2,62	310,74	1,50	LO-278053-RRFF-C1000-K200
				FAR RED	727	33406	20,17	0,21			
	800	302,9	242,4	RED	657	61149	331,64	2,53	354,66	1,46	LO-278053-RRFF-C1000-K200
				FAR RED	727	38128	23,02	0,21			

Parameters were calculated for temperatures $T_j = 25^\circ\text{C}$

Values of these parameters were calculated for default bin and with tolerances of 15%.

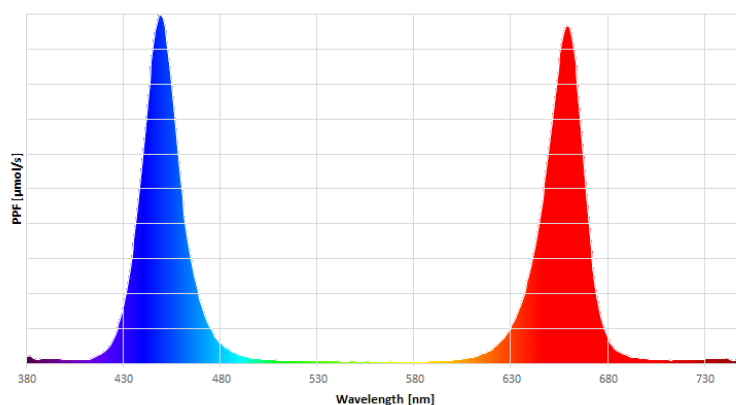
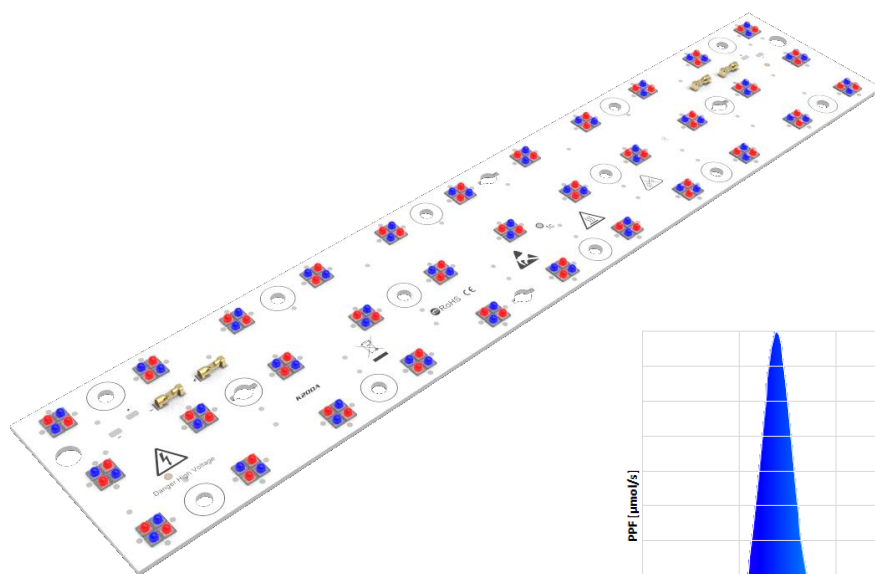


GROWEMITY 3X11 RRBB - K200

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm]	Radiant Power [mW]	PPF [$\mu\text{mol/s}$]	PPF/W [$\mu\text{mol/J}$]	Total PPF [$\mu\text{mol/s}$]	Total PPF/W [$\mu\text{mol/J}$]	Article Number
GrowEmity 3x11 RRBB - K200	350	330,0	115,5	RED	657	28050	152,13	3,06	307,23	2,66	L0-278053-RRBB-C1000-K200
				DEEP BLUE	455	41910	155,10	2,36			
	500	339,9	170,0	RED	657	39551	214,50	2,89	430,09	2,53	L0-278053-RRBB-C1000-K200
				DEEP BLUE	455	58255	215,59	2,25			
	700	354,4	248,1	RED	657	53576	290,57	2,62	557,34	2,25	L0-278053-RRBB-C1000-K200
				DEEP BLUE	455	72085	266,77	1,94			
	800	361,0	288,8	RED	657	61149	331,64	2,53	626,33	2,17	L0-278053-RRBB-C1000-K200
				DEEP BLUE	455	79629	294,69	1,87			

Parameters were calculated for temperatures $T_j = 25^\circ\text{C}$

Values of these parameters were calculated for default bin and with tolerances of 15%.



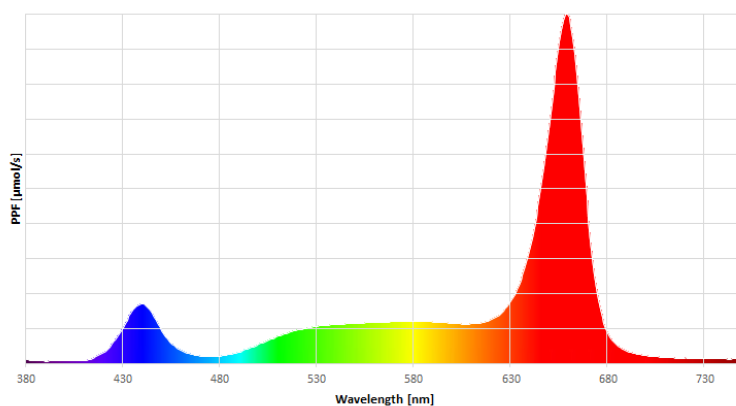
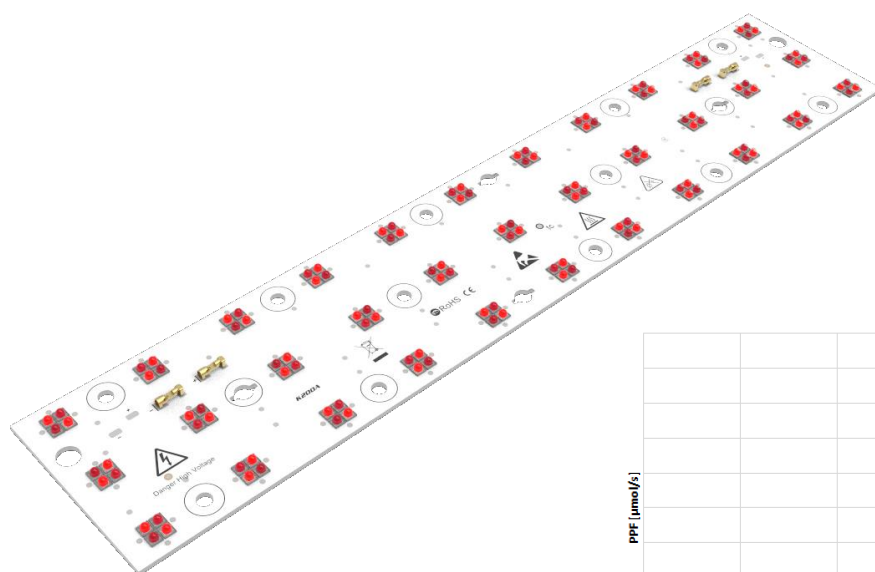
GROWEMITY 3x11 RRWW - K200

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm] / CCT [K]	Radiant Power [mW] / Luminous Flux [lm]	PPF [$\mu\text{mol/s}$]	PPF/W [$\mu\text{mol/J}$]	Total PPF [$\mu\text{mol/s}$]	Total PPF/W [$\mu\text{mol/J}$]	Article Number
GrowEmity 3x11 RRFF - K200	350	323,4	113,2	RED	657	28050	152,13	3,06	281,49	2,49	LO-278053-RRFF-C1000-K200
				WHITE	5000	9761	129,36	2,04			
	500	336,6	168,3	RED	657	39551	214,50	2,89	387,42	2,30	LO-278053-RRFF-C1000-K200
				WHITE	5000	13373	172,92	1,84			
	700	353,1	247,2	RED	657	53576	290,57	2,62	514,97	2,08	LO-278053-RRFF-C1000-K200
				WHITE	5000	17571	224,40	1,65			
	800	360,4	288,3	RED	657	61149	331,64	2,53	578,48	2,01	LO-278053-RRFF-C1000-K200
				WHITE	5000	19328	246,84	1,57			

Parameters were calculated for temperatures $T_j = 25^\circ\text{C}$

Radiant power and wavelength for color LEDs; Luminous flux and color temperature for white LEDs.

Values of these parameters were calculated for default bin and with tolerances of 15%.

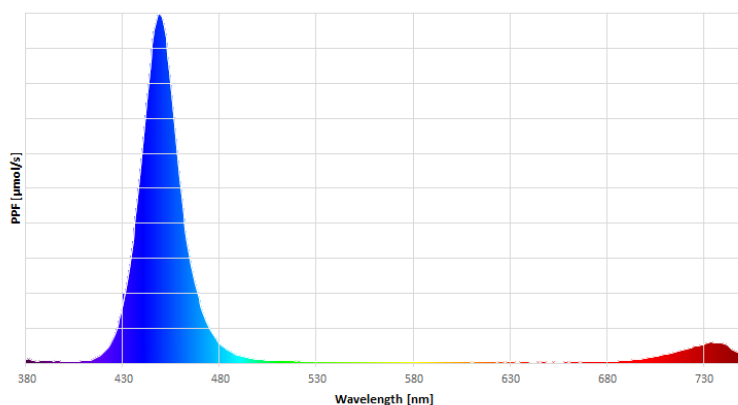
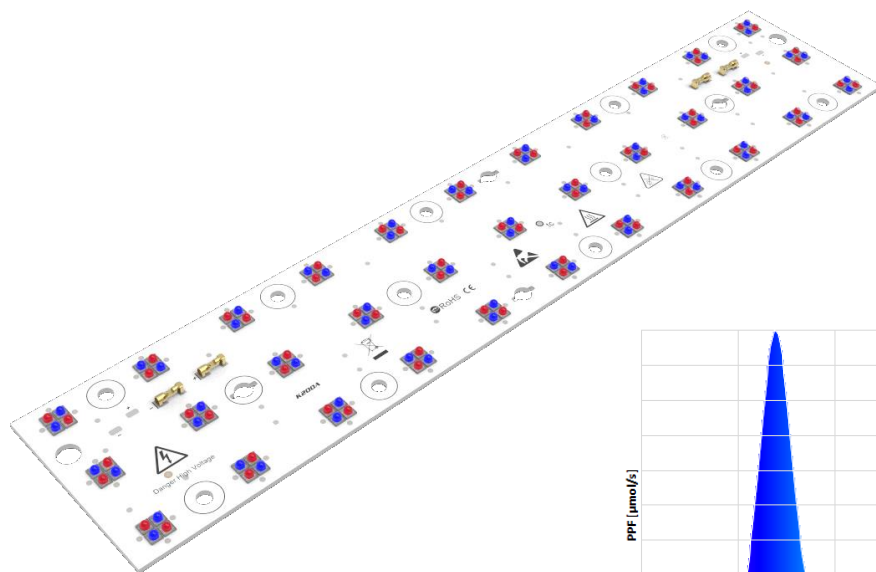


GROWEMITY 3x11 FFBB - K200

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm] / CCT [K]	Radiant Power [mW] / Luminous Flux [lm]	PPF [$\mu\text{mol/s}$]	PPF/W [$\mu\text{mol/J}$]	Total PPF [$\mu\text{mol/s}$]	Total PPF/W [$\mu\text{mol/J}$]	Article Number
GrowEmity 3x11 FFBB - K200	350	310,2	108,6	FAR RED	727	17490	10,56	0,25	165,66	1,53	LO-278053-FFBB-C1000-K200
				DEEP BLUE	455	41910	155,10	2,36			
	500	320,1	160,1	FAR RED	727	24661	14,89	0,23	230,48	1,44	LO-278053-FFBB-C1000-K200
				DEEP BLUE	455	58255	215,59	2,25			
	700	332,6	232,8	FAR RED	727	33406	20,17	0,21	286,94	1,23	LO-278053-FFBB-C1000-K200
				DEEP BLUE	455	72085	266,77	1,94			
	800	336,6	269,3	FAR RED	727	38128	23,02	0,21	317,71	1,18	LO-278053-FFBB-C1000-K200
				DEEP BLUE	455	79629	294,69	1,87			

Parameters were calculated for temperatures $T_j = 25^\circ\text{C}$

Values of these parameters were calculated for default bin and with tolerances of 15%.



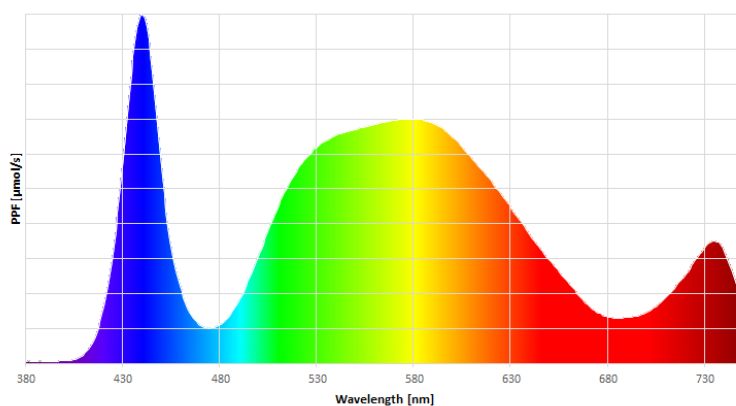
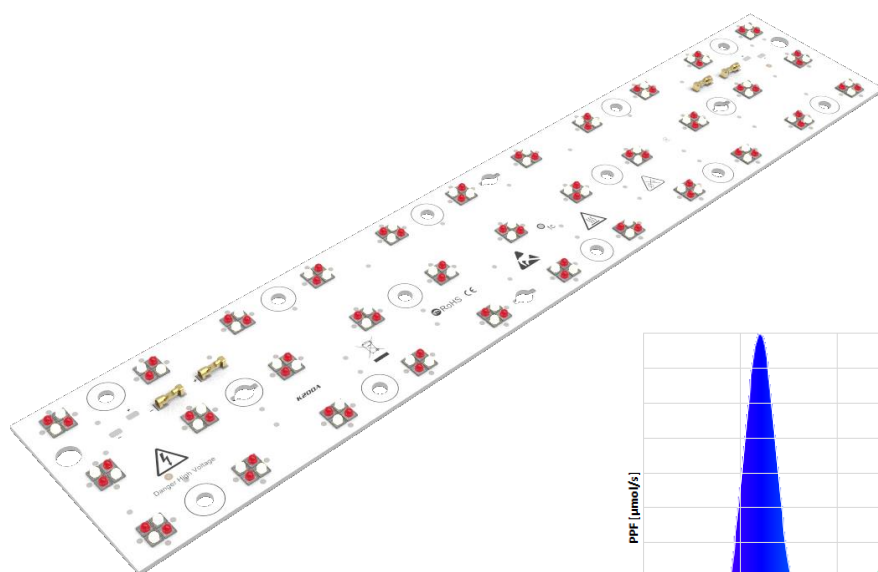
GROWEMITY 3x11 FFWW - K200

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm] / CCT [K]	Radiant Power [mW] / Luminous Flux [lm]	PPF [$\mu\text{mol/s}$]	PPF/W [$\mu\text{mol/J}$]	Total PPF [$\mu\text{mol/s}$]	Total PPF/W [$\mu\text{mol/J}$]	Article Number
GrowEmity 3x11 FFWW - K200	350	303,6	106,3	FAR RED	727	17490	10,56	0,25	139,92	1,32	LO-278053-FFWW-C1000-K200
				WHITE	5000	9761	129,36	2,04			
	500	316,8	158,4	FAR RED	727	24661	14,89	0,23	187,81	1,19	LO-278053-FFWW-C1000-K200
				WHITE	5000	13373	172,92	1,84			
	700	331,3	231,9	FAR RED	727	33406	20,17	0,21	244,57	1,05	LO-278053-FFWW-C1000-K200
				WHITE	5000	17571	224,40	1,65			
	800	335,9	268,8	FAR RED	727	38128	23,02	0,21	269,86	1,00	LO-278053-FFWW-C1000-K200
				WHITE	5000	19328	246,84	1,57			

Parameters were calculated for temperatures $T_J = 25^\circ\text{C}$

Radiant power and wavelength for color LEDs; Luminous flux and color temperature for white LEDs.

Values of these parameters were calculated for default bin and with tolerances of 15%.



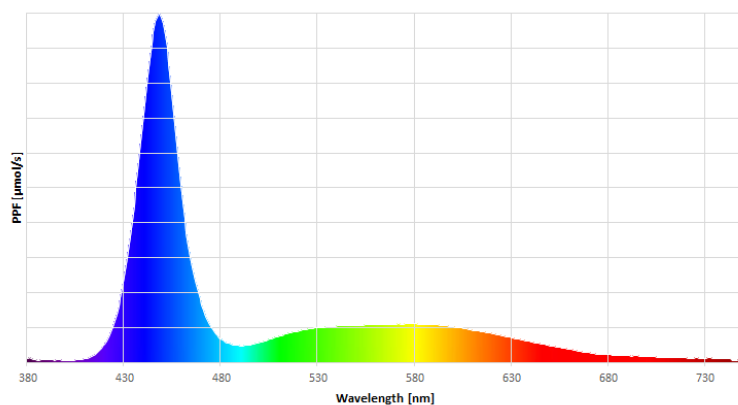
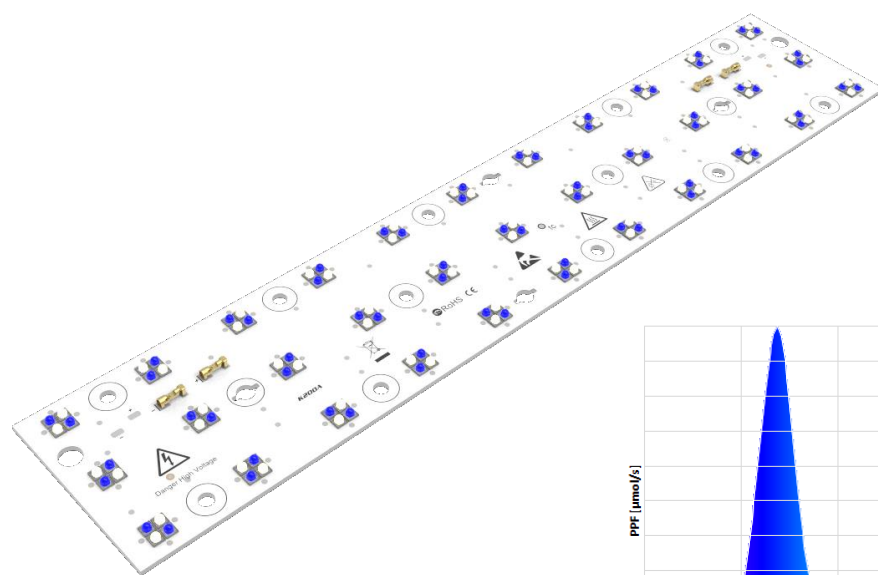
GROWEMITY 3x11 BBWW - K200

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm] / CCT [K]	Radiant Power [mW] / Luminous Flux [lm]	PPF [$\mu\text{mol/s}$]	PPF/W [$\mu\text{mol/J}$]	Total PPF [$\mu\text{mol/s}$]	Total PPF/W [$\mu\text{mol/J}$]	Article Number
GrowEmity 3x11 BBWW - K200	350	369,6	129,4	DEEP BLUE	455	41910	155,10	2,36	284,46	2,20	LO-278053-BBWW-C1000-K200
				WHITE	5000	9761	129,36	2,04			
	500	369,6	129,4	DEEP BLUE	455	41910	155,10	2,36	284,46	2,20	LO-278053-BBWW-C1000-K200
				WHITE	5000	9761	129,36	2,04			
	700	390,7	273,5	DEEP BLUE	455	72085	266,77	1,94	491,17	1,80	LO-278053-BBWW-C1000-K200
				WHITE	5000	17571	224,40	1,65			
	800	394,0	315,2	DEEP BLUE	455	79629	294,69	1,87	541,53	1,72	LO-278053-BBWW-C1000-K200
				WHITE	5000	19328	246,84	1,57			

Parameters were calculated for temperatures $T_j = 25^\circ\text{C}$

Radiant power and wavelength for color LEDs; Luminous flux and color temperature for white LEDs.

Values of these parameters were calculated for default bin and with tolerances of 15%.

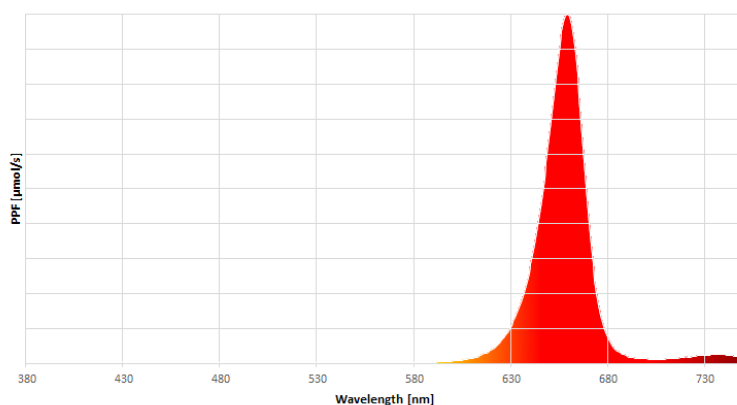
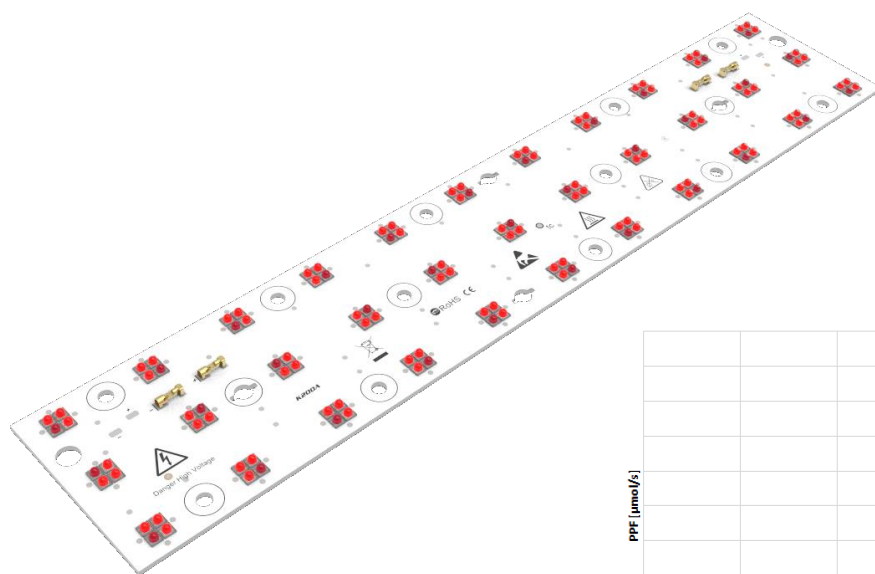


GROWEMITY 3x11 RRRF - K200

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm]	Radiant Power [mW]	PPF [$\mu\text{mol/s}$]	PPF/W [$\mu\text{mol/J}$]	Total PPF [$\mu\text{mol/s}$]	Total PPF/W [$\mu\text{mol/J}$]	Article Number
GrowEmity 3x11 RRRF - K200	350	273,9	95,9	RED	657	42075	228,20	3,06	233,48	2,44	LO-278053-RRRF-C1000-K200
				FAR RED	727	8745	5,28	0,25			
	500	287,1	143,6	RED	657	59326	321,75	2,89	329,20	2,29	LO-278053-RRRF-C1000-K200
				FAR RED	727	12330	7,44	0,23			
	700	305,9	214,1	RED	657	80363	435,85	2,62	445,94	2,08	LO-278053-RRRF-C1000-K200
				FAR RED	727	16703	10,08	0,21			
	800	315,2	252,1	RED	657	91724	497,47	2,53	508,98	2,02	LO-278053-RRRF-C1000-K200
				FAR RED	727	19064	11,51	0,21			

Parameters were calculated for temperatures $T_j = 25^\circ\text{C}$

Values of these parameters were calculated for default bin and with tolerances of 15%.

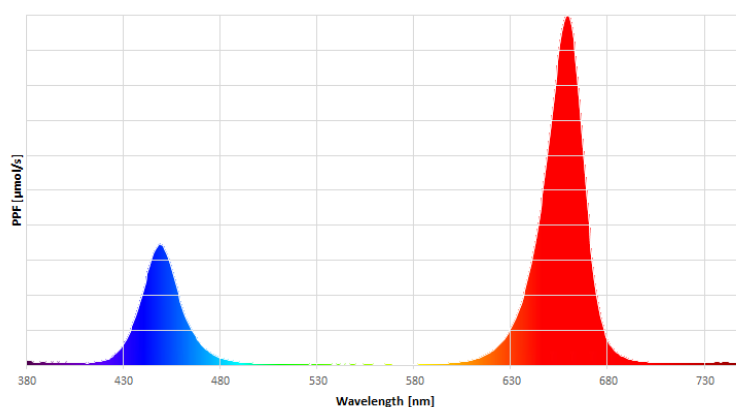
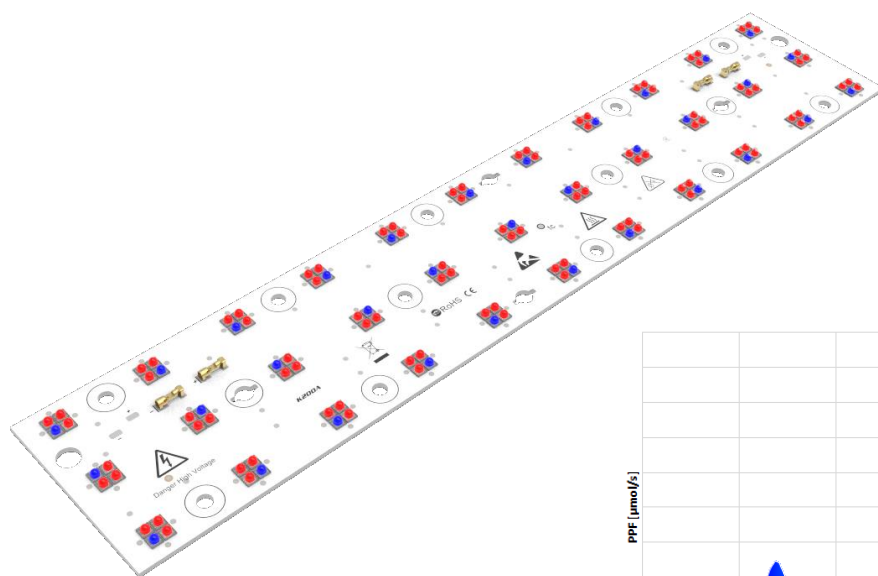


GROWEMITY 3x11 RRRB - K200

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm]	Radiant Power [mW]	PPF [$\mu\text{mol/s}$]	PPF/W [$\mu\text{mol/J}$]	Total PPF [$\mu\text{mol/s}$]	Total PPF/W [$\mu\text{mol/J}$]	Article Number
GrowEmity 3x11 RRRB - K200	350	306,9	107,4	RED	657	42075	228,20	3,06	305,75	2,85	LO-278053-RRRB-C1000-K200
				DEEP BLUE	455	20955	77,55	2,36			
	500	318,5	159,2	RED	657	59326	321,75	2,89	429,55	2,70	LO-278053-RRRB-C1000-K200
				DEEP BLUE	455	29127	107,79	2,25			
	700	335,6	234,9	RED	657	80363	435,85	2,62	569,24	2,42	LO-278053-RRRB-C1000-K200
				DEEP BLUE	455	36043	133,39	1,94			
	800	344,2	275,4	RED	657	91724	497,47	2,53	644,81	2,34	LO-278053-RRRB-C1000-K200
				DEEP BLUE	455	39815	147,35	1,87			

Parameters were calculated for temperatures $T_j = 25^\circ\text{C}$

Values of these parameters were calculated for default bin and with tolerances of 15%.



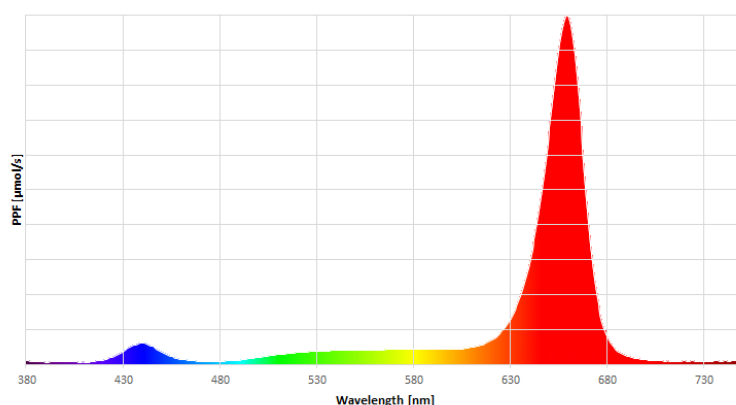
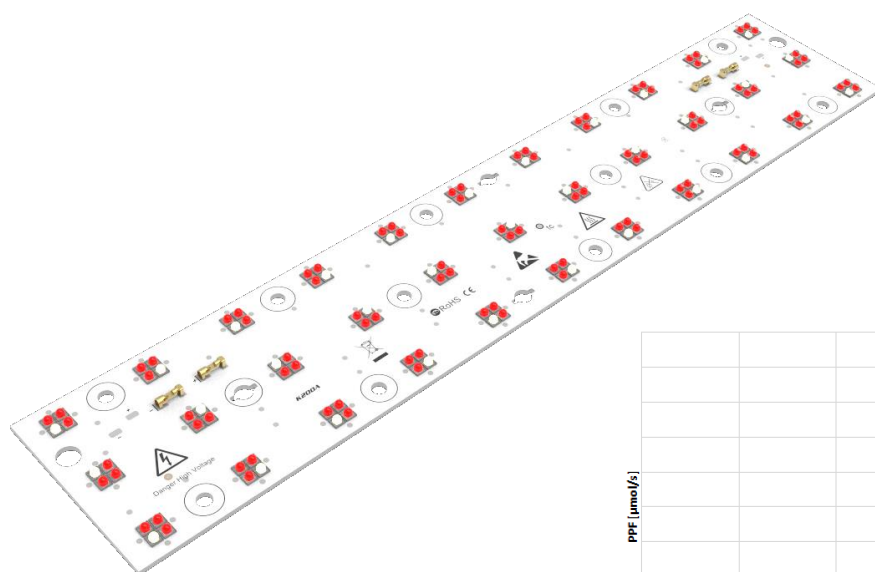
GROWEMITY 3x11 RRRW - K200

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm] / CCT [K]	Radiant Power [mW] / Luminous Flux [lm]	PPF [$\mu\text{mol/s}$]	PPF/W [$\mu\text{mol/J}$]	Total PPF [$\mu\text{mol/s}$]	Total PPF/W [$\mu\text{mol/J}$]	Article Number
GrowEmity 3x11 RRRW - K200	350	303,6	106,3	RED	657	42075	228,20	3,06	292,88	2,76	LO-278053-RRRW-C1000-K200
				WHITE	5000	4881	64,68	2,04			
	500	316,8	158,4	RED	657	59326	321,75	2,89	408,21	2,58	LO-278053-RRRW-C1000-K200
				WHITE	5000	6687	86,46	1,84			
	700	335,0	234,5	RED	657	80363	435,85	2,62	548,05	2,34	LO-278053-RRRW-C1000-K200
				WHITE	5000	8785	112,20	1,65			
	800	343,9	275,1	RED	657	91724	497,47	2,53	620,89	2,26	LO-278053-RRRW-C1000-K200
				WHITE	5000	9664	123,42	1,57			

Parameters were calculated for temperatures $T_J = 25^\circ\text{C}$

Radiant power and wavelength for color LEDs; Luminous flux and color temperature for white LEDs.

Values of these parameters were calculated for default bin and with tolerances of 15%.

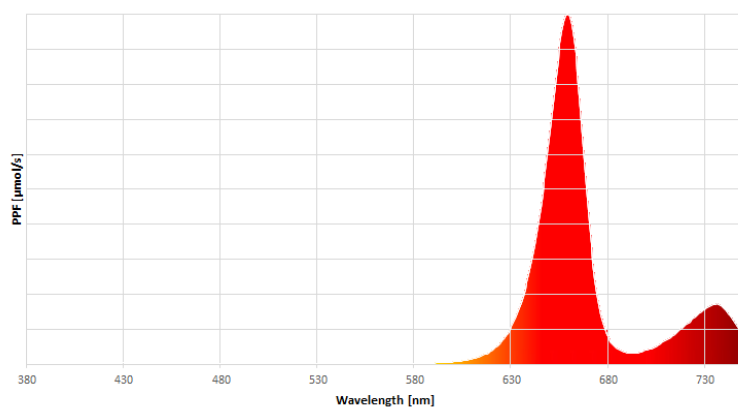
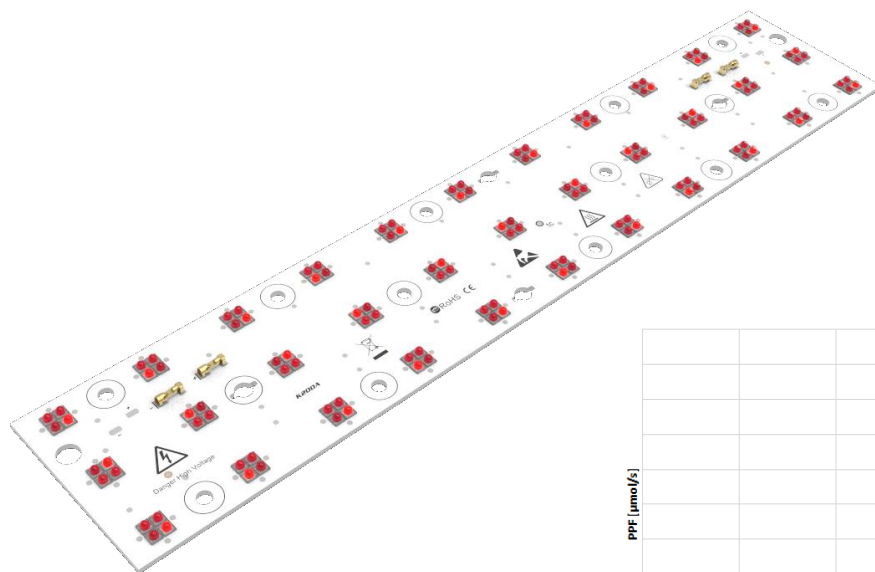


GROWEMITY 3x11 RFFF - K200

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm]	Radiant Power [mW]	PPF [$\mu\text{mol/s}$]	PPF/W [$\mu\text{mol/J}$]	Total PPF [$\mu\text{mol/s}$]	Total PPF/W [$\mu\text{mol/J}$]	Article Number
GrowEmity 3x11 RFFF - K200	350	254,1	88,9	RED	657	14025	76,07	3,06	91,91	1,03	LO-278053-RFFF-C1000-K200
				FAR RED	727	26235	15,84	0,25			
	500	267,3	133,7	RED	657	19775	107,25	2,89	129,59	0,97	LO-278053-RFFF-C1000-K200
				FAR RED	727	36991	22,33	0,23			
	700	284,1	198,9	RED	657	26788	145,28	2,62	175,54	0,88	LO-278053-RFFF-C1000-K200
				FAR RED	727	50109	30,25	0,21			
	800	290,7	232,6	RED	657	30575	165,82	2,53	200,35	0,86	LO-278053-RFFF-C1000-K200
				FAR RED	727	57192	34,53	0,21			

Parameters were calculated for temperatures $T_j = 25^\circ\text{C}$

Values of these parameters were calculated for default bin and with tolerances of 15%.

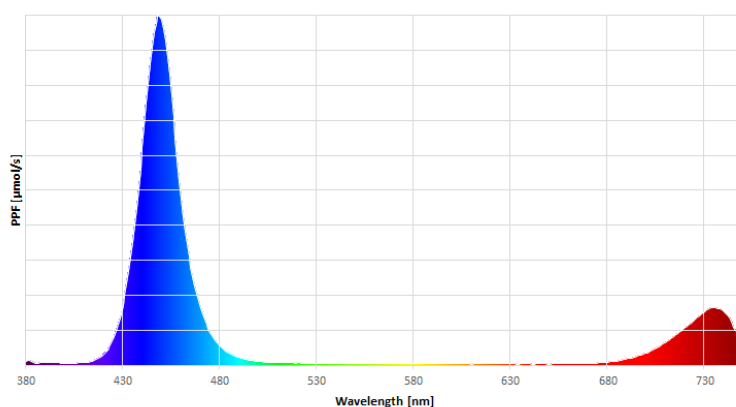
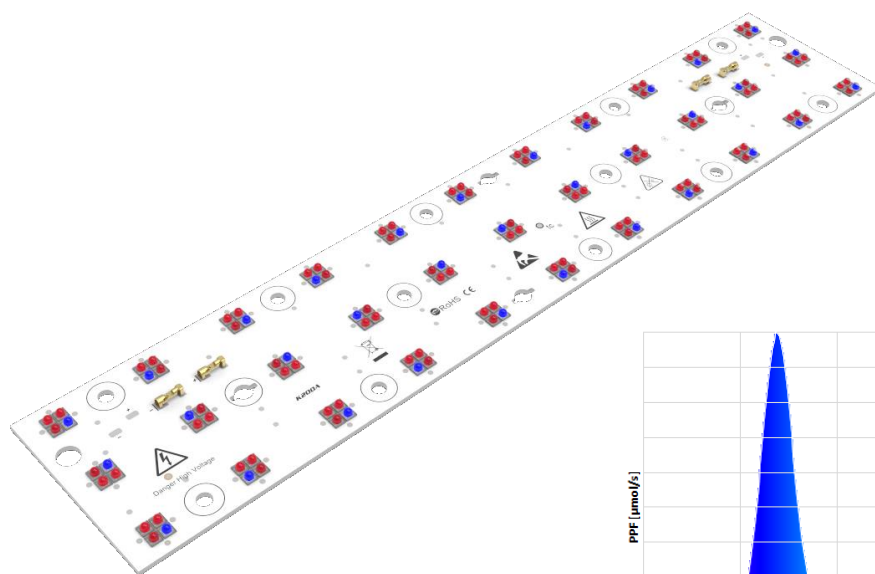


GROWEMITY 3x11 FFFB - K200

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm]	Radiant Power [mW]	PPF [$\mu\text{mol/s}$]	PPF/W [$\mu\text{mol/J}$]	Total PPF [$\mu\text{mol/s}$]	Total PPF/W [$\mu\text{mol/J}$]	Article Number
GrowEmity 3x11 FFFB - K200	350	277,2	97,0	FAR RED	727	26235	15,84	0,25	93,39	0,96	LO-278053-FFFB-C1000-K200
				DEEP BLUE	455	20955	77,55	2,36			
	500	288,8	144,4	FAR RED	727	36991	22,33	0,23	130,13	0,90	LO-278053-FFFB-C1000-K200
				DEEP BLUE	455	29127	107,79	2,25			
	700	302,9	212,1	FAR RED	727	50109	30,25	0,21	163,64	0,77	LO-278053-FFFB-C1000-K200
				DEEP BLUE	455	36043	133,39	1,94			
	800	307,6	246,0	FAR RED	727	57192	34,53	0,21	181,88	0,74	LO-278053-FFFB-C1000-K200
				DEEP BLUE	455	39815	147,35	1,87			

Parameters were calculated for temperatures $T_j = 25^\circ\text{C}$

Values of these parameters were calculated for default bin and with tolerances of 15%.



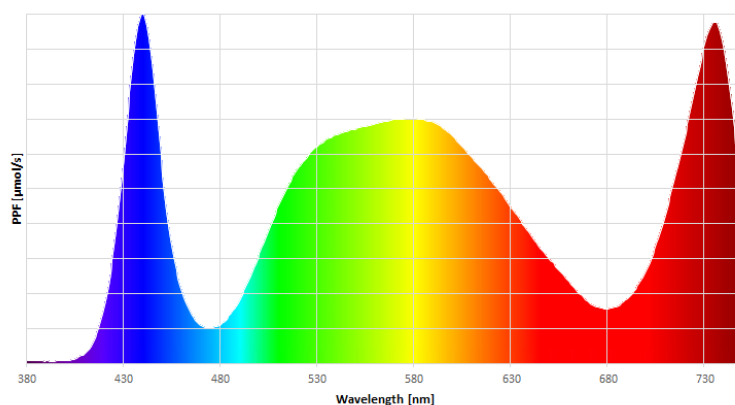
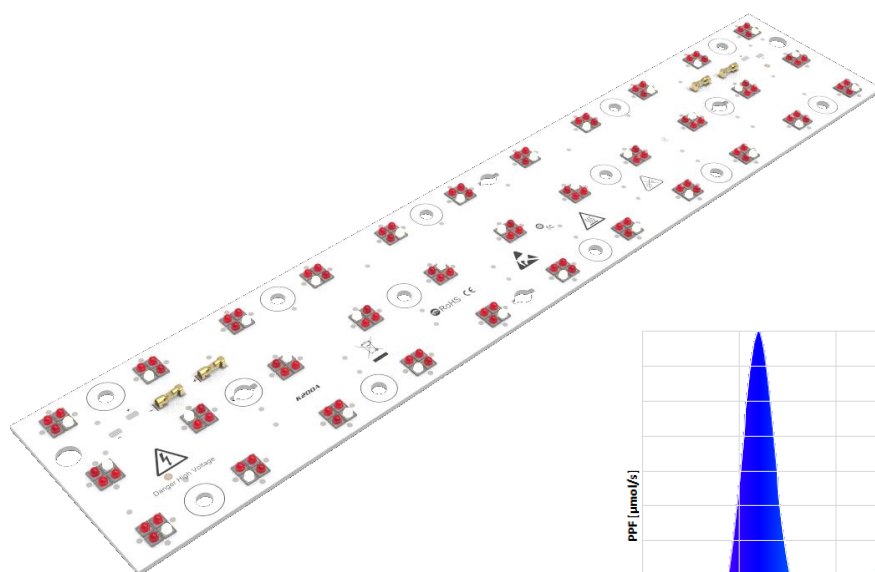
GROWEMITY 3x11 FFFW - K200

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm] / CCT [K]	Radiant Power [mW] / Luminous Flux [lm]	PPF [$\mu\text{mol/s}$]	PPF/W [$\mu\text{mol/J}$]	Total PPF [$\mu\text{mol/s}$]	Total PPF/W [$\mu\text{mol/J}$]	Article Number
GrowEmity 3x11 FFFW - K200	350	273,9	95,9	FAR RED	727	26235	15,84	0,25	80,52	0,84	L0-278053-FFFW-C1000-K200
				WHITE	5000	4881	64,68	2,04			
	500	287,1	143,6	FAR RED	727	36991	22,33	0,23	108,79	0,76	L0-278053-FFFW-C1000-K200
				WHITE	5000	6687	86,46	1,84			
	700	302,3	211,6	FAR RED	727	50109	30,25	0,21	142,45	0,67	L0-278053-FFFW-C1000-K200
				WHITE	5000	8785	112,20	1,65			
	800	307,2	245,8	FAR RED	727	57192	34,53	0,21	157,95	0,64	L0-278053-FFFW-C1000-K200
				WHITE	5000	9664	123,42	1,57			

Parameters were calculated for temperatures $T_J = 25^\circ\text{C}$

Radiant power and wavelength for color LEDs; Luminous flux and color temperature for white LEDs.

Values of these parameters were calculated for default bin and with tolerances of 15%.

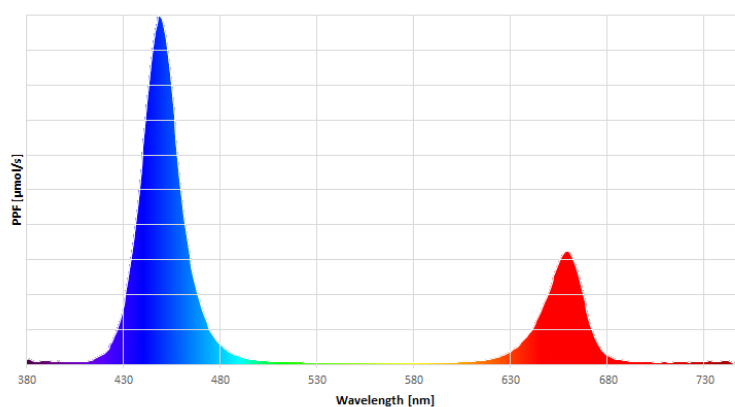
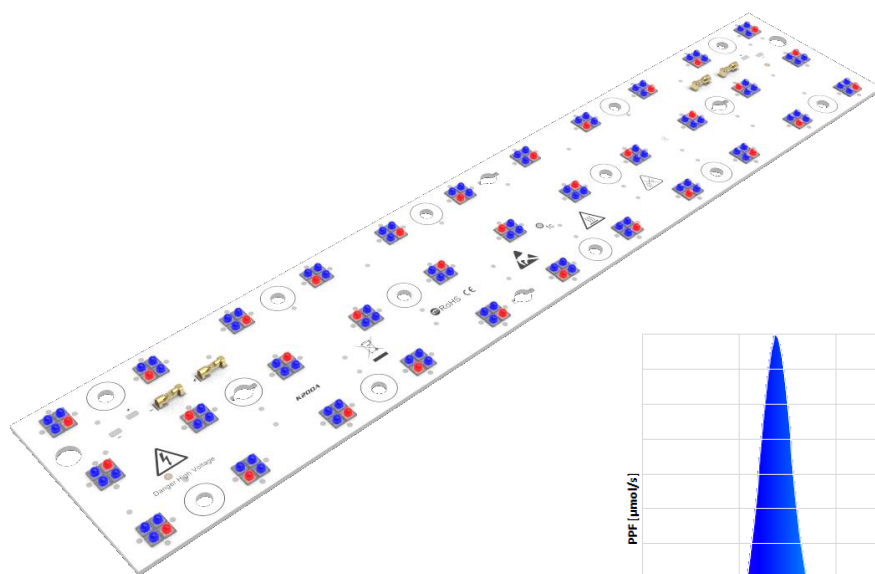


GROWEMITY 3x11 RBBB - K200

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm]	Radiant Power [mW]	PPF [$\mu\text{mol/s}$]	PPF/W [$\mu\text{mol/J}$]	Total PPF [$\mu\text{mol/s}$]	Total PPF/W [$\mu\text{mol/J}$]	Article Number
GrowEmity 3x11 RBBB - K200	350	353,1	123,6	RED	657	14025	76,07	3,06	308,72	2,50	LO-278053-RBBB-C1000-K200
				DEEP BLUE	455	62865	232,65	2,36			
	500	361,4	180,7	RED	657	19775	107,25	2,89	430,64	2,38	LO-278053-RBBB-C1000-K200
				DEEP BLUE	455	87382	323,38	2,25			
	700	373,2	261,3	RED	657	26788	145,28	2,62	545,44	2,09	LO-278053-RBBB-C1000-K200
				DEEP BLUE	455	108128	400,16	1,94			
	800	377,9	302,3	RED	657	30575	165,82	2,53	607,86	2,01	LO-278053-RBBB-C1000-K200
				DEEP BLUE	455	119444	442,04	1,87			

Parameters were calculated for temperatures $T_j = 25^\circ\text{C}$

Values of these parameters were calculated for default bin and with tolerances of 15%.

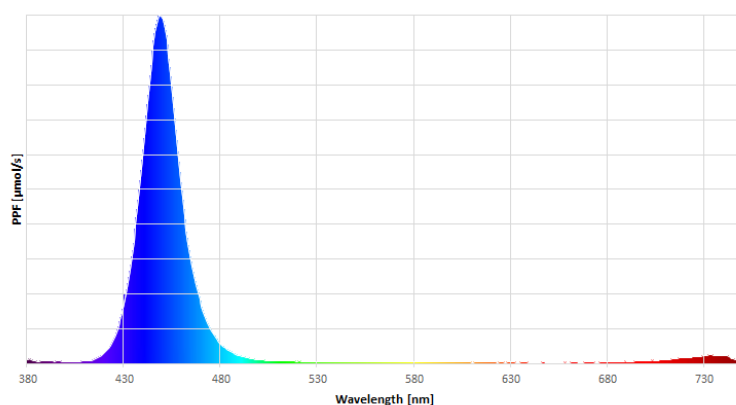
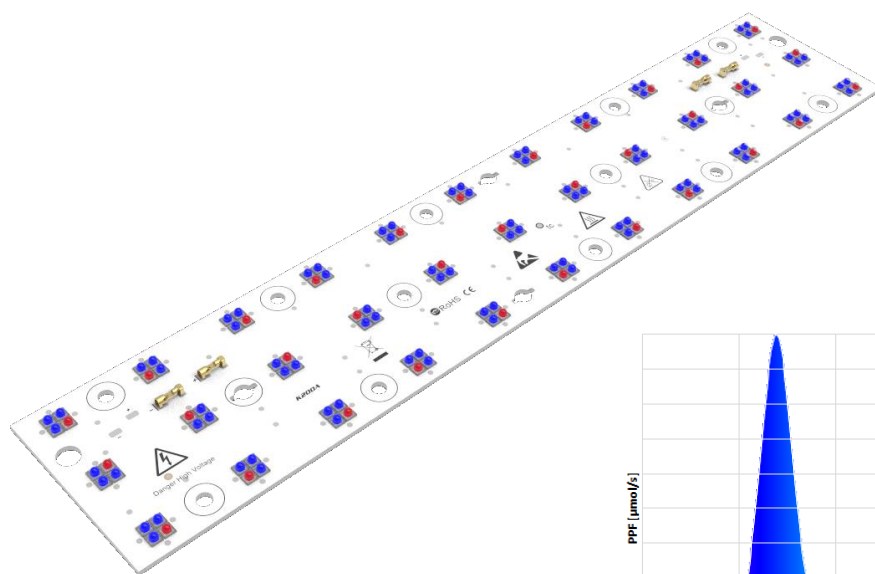


GROWEMITY 3x11 FB8B - K200

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm]	Radiant Power [mW]	PPF [$\mu\text{mol/s}$]	PPF/W [$\mu\text{mol/J}$]	Total PPF [$\mu\text{mol/s}$]	Total PPF/W [$\mu\text{mol/J}$]	Article Number
GrowEmity 3x11 FB8B - K200	350	343,2	120,1	FAR RED	727	8745	5,28	0,25	237,93	1,98	LO-278053-FB8B-C1000-K200
				DEEP BLUE	455	62865	232,65	2,36			
	500	351,5	175,7	FAR RED	727	12330	7,44	0,23	330,83	1,88	LO-278053-FB8B-C1000-K200
				DEEP BLUE	455	87382	323,38	2,25			
	700	362,3	253,6	FAR RED	727	16703	10,08	0,21	410,24	1,62	LO-278053-FB8B-C1000-K200
				DEEP BLUE	455	108128	400,16	1,94			
	800	365,6	292,5	FAR RED	727	19064	11,51	0,21	453,55	1,55	LO-278053-FB8B-C1000-K200
				DEEP BLUE	455	119444	442,04	1,87			

Parameters were calculated for temperatures $T_j = 25^\circ\text{C}$

Values of these parameters were calculated for default bin and with tolerances of 15%.



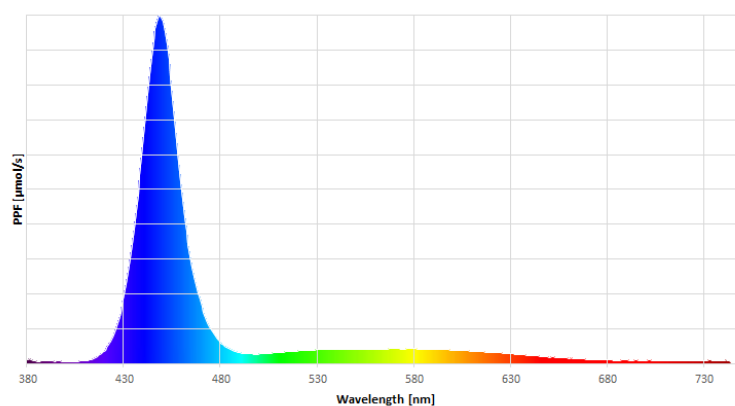
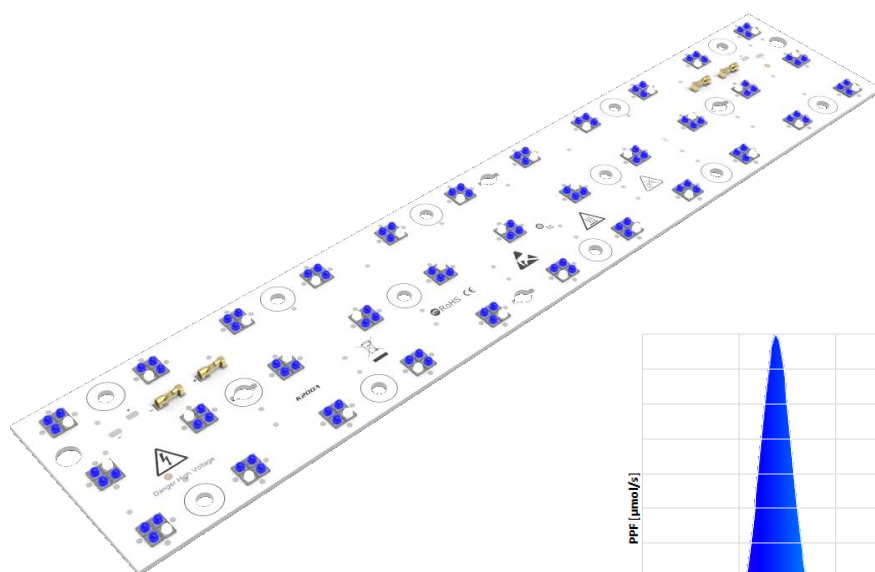
GROWEMITY 3x11 BBBW - K200

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm] / CCT [K]	Radiant Power [mW] / Luminous Flux [lm]	PPF [$\mu\text{mol/s}$]	PPF/W [$\mu\text{mol/J}$]	Total PPF [$\mu\text{mol/s}$]	Total PPF/W [$\mu\text{mol/J}$]	Article Number
GrowEmity 3x11 BBBW - K200	350	372,9	130,5	DEEP BLUE	455	62865	232,65	2,36	297,33	2,28	L0-278053-BBBW-C1000-K200
				WHITE	5000	4881	64,68	2,04			
	500	381,2	190,6	DEEP BLUE	455	87382	323,38	2,25	409,84	2,15	L0-278053-BBBW-C1000-K200
				WHITE	5000	6687	86,46	1,84			
	700	391,4	274,0	DEEP BLUE	455	108128	400,16	1,94	512,36	1,87	L0-278053-BBBW-C1000-K200
				WHITE	5000	8785	112,20	1,65			
	800	394,4	315,5	DEEP BLUE	455	119444	442,04	1,87	565,46	1,79	L0-278053-BBBW-C1000-K200
				WHITE	5000	9664	123,42	1,57			

Parameters were calculated for temperatures $T_J = 25^\circ\text{C}$

Radiant power and wavelength for color LEDs; Luminous flux and color temperature for white LEDs.

Values of these parameters were calculated for default bin and with tolerances of 15%.



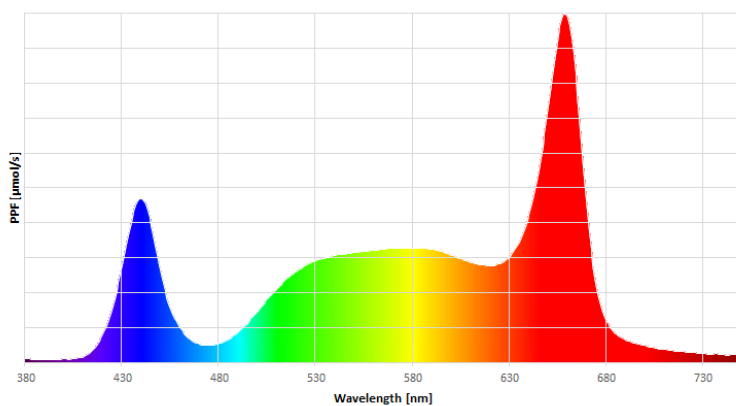
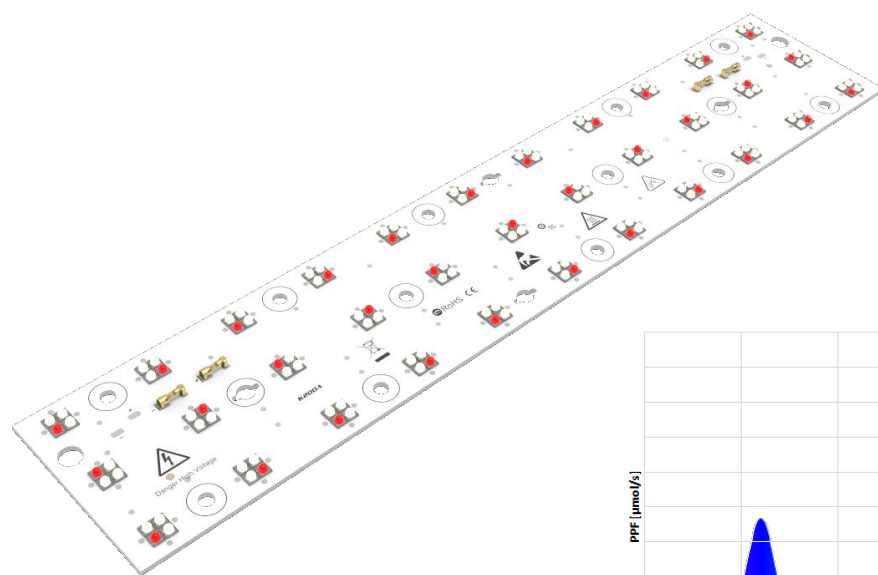
GROWEMITY 3x11 RWWW - K200

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm] / CCT [K]	Radiant Power [mW] / Luminous Flux [lm]	PPF [$\mu\text{mol/s}$]	PPF/W [$\mu\text{mol/J}$]	Total PPF [$\mu\text{mol/s}$]	Total PPF/W [$\mu\text{mol/J}$]	Article Number
GrowEmity 3x11 RWWW - K200	350	343,2	120,1	RED	657	14025	76,07	3,06	270,11	2,25	L0-278053-RWWW-C1000-K200
				WHITE	5000	14642	194,04	2,04			
	500	356,4	178,2	RED	657	19775	107,25	2,89	366,63	2,06	L0-278053-RWWW-C1000-K200
				WHITE	5000	20060	259,38	1,84			
	700	371,3	259,9	RED	657	26788	145,28	2,62	481,88	1,85	L0-278053-RWWW-C1000-K200
				WHITE	5000	26356	336,60	1,65			
	800	376,9	301,5	RED	657	30575	165,82	2,53	536,08	1,78	L0-278053-RWWW-C1000-K200
				WHITE	5000	28991	370,26	1,57			

Parameters were calculated for temperatures $T_j = 25^\circ\text{C}$

Radiant power and wavelength for color LEDs; Luminous flux and color temperature for white LEDs.

Values of these parameters were calculated for default bin and with tolerances of 15%.



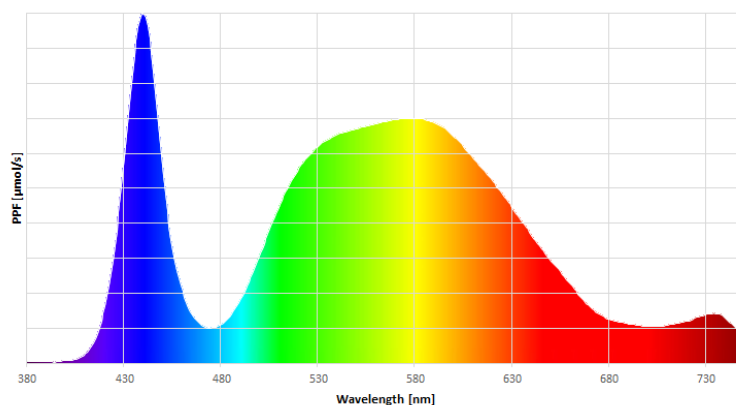
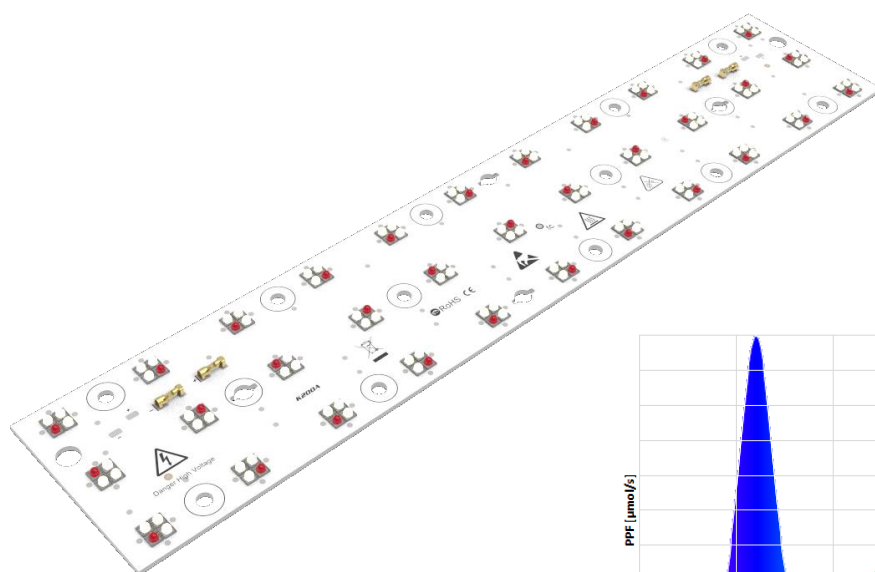
GROWEMITY 3x11 FWWW - K200

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm] / CCT [K]	Radiant Power [mW] / Luminous Flux [lm]	PPF [$\mu\text{mol/s}$]	PPF/W [$\mu\text{mol/J}$]	Total PPF [$\mu\text{mol/s}$]	Total PPF/W [$\mu\text{mol/J}$]	Article Number
GrowEmity 3x11 FWWW - K200	350	333,3	116,7	FAR RED	727	8745	5,28	0,25	199,32	1,71	L0-278053-FWWW-C1000-K200
				WHITE	5000	14642	194,04	2,04			
	500	346,5	173,3	FAR RED	727	12330	7,44	0,23	266,82	1,54	L0-278053-FWWW-C1000-K200
				WHITE	5000	20060	259,38	1,84			
	700	360,4	252,3	FAR RED	727	16703	10,08	0,21	346,68	1,37	L0-278053-FWWW-C1000-K200
				WHITE	5000	26356	336,60	1,65			
	800	364,7	291,7	FAR RED	727	19064	11,51	0,21	381,77	1,31	L0-278053-FWWW-C1000-K200
				WHITE	5000	28991	370,26	1,57			

Parameters were calculated for temperatures $T_J = 25^\circ\text{C}$

Radiant power and wavelength for color LEDs; Luminous flux and color temperature for white LEDs.

Values of these parameters were calculated for default bin and with tolerances of 15%.



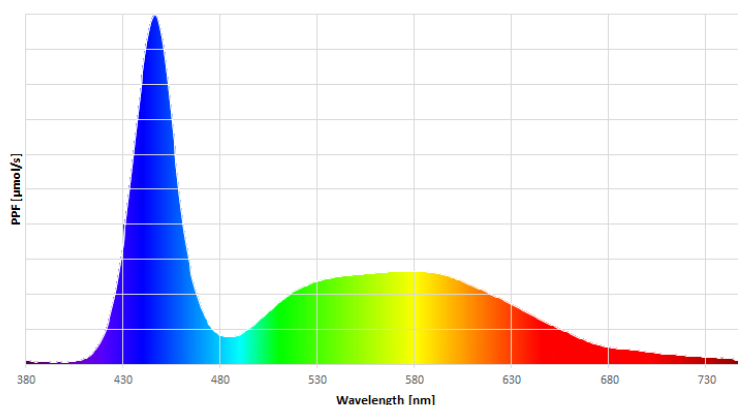
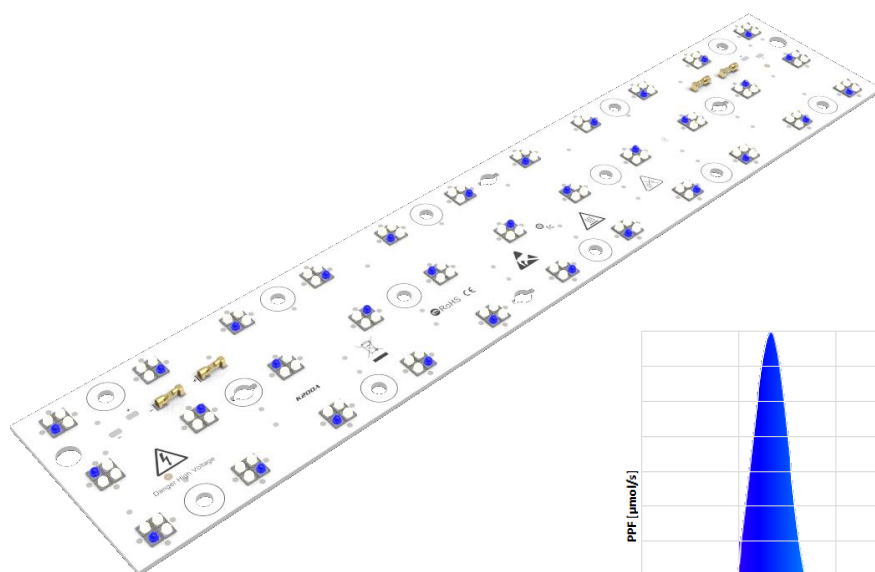
GROWEMITY 3x11 BWWW - K200

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm] / CCT [K]	Radiant Power [mW] / Luminous Flux [lm]	PPF [$\mu\text{mol/s}$]	PPF/W [$\mu\text{mol/J}$]	Total PPF [$\mu\text{mol/s}$]	Total PPF/W [$\mu\text{mol/J}$]	Article Number
GrowEmity 3x11 BWWW - K200	350	366,3	128,2	DEEP BLUE	455	20955	77,55	2,36	271,59	2,12	L0-278053-BWWW-C1000-K200
				WHITE	5000	14642	194,04	2,04			
	500	377,9	188,9	DEEP BLUE	455	29127	107,79	2,25	367,17	1,94	L0-278053-BWWW-C1000-K200
				WHITE	5000	20060	259,38	1,84			
	700	390,1	273,0	DEEP BLUE	455	36043	133,39	1,94	469,99	1,72	L0-278053-BWWW-C1000-K200
				WHITE	5000	26356	336,60	1,65			
	800	393,7	315,0	DEEP BLUE	455	39815	147,35	1,87	517,61	1,64	L0-278053-BWWW-C1000-K200
				WHITE	5000	28991	370,26	1,57			

Parameters were calculated for temperatures $T_J = 25^\circ\text{C}$

Radiant power and wavelength for color LEDs; Luminous flux and color temperature for white LEDs.

Values of these parameters were calculated for default bin and with tolerances of 15%.

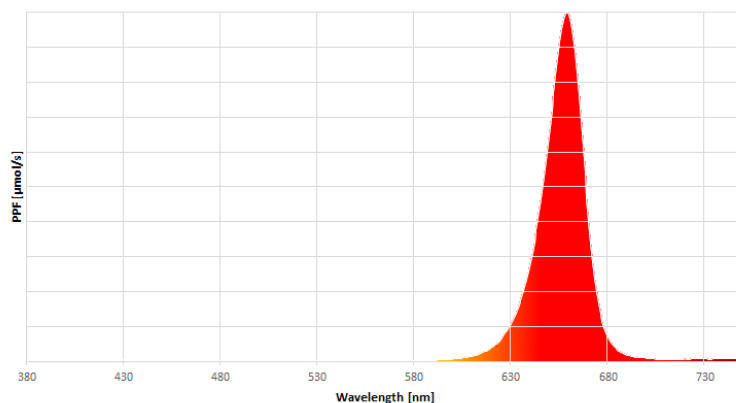
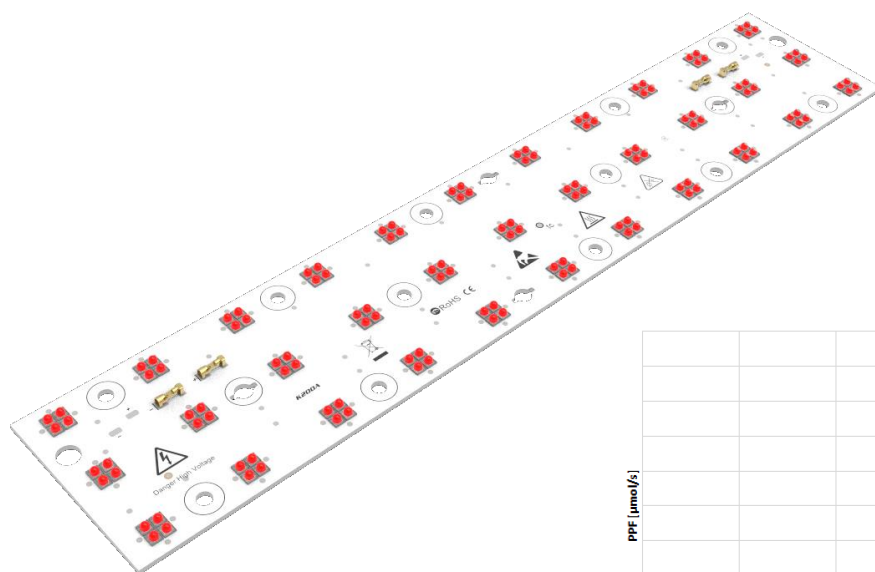


GROWEMITY 3x11 RRRR - K200

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm]	Radiant Power [mW]	PPF [$\mu\text{mol/s}$]	PPF/W [$\mu\text{mol/J}$]	Article Number
GrowEmity 3x11 RRRR - K200	350	283,8	99,3	RED	657	56100	304,26	3,06	L0-278053-RRRR-C1000-K200
	500	297,0	148,5	RED	657	79101	429,01	2,89	L0-278053-RRRR-C1000-K200
	700	316,8	221,8	RED	657	107151	581,14	2,62	L0-278053-RRRR-C1000-K200
	800	327,4	261,9	RED	657	122298	663,29	2,53	L0-278053-RRRR-C1000-K200

Parameters were calculated for temperatures $T_J = 25^\circ\text{C}$

Values of these parameters were calculated for default bin and with tolerances of 15%.

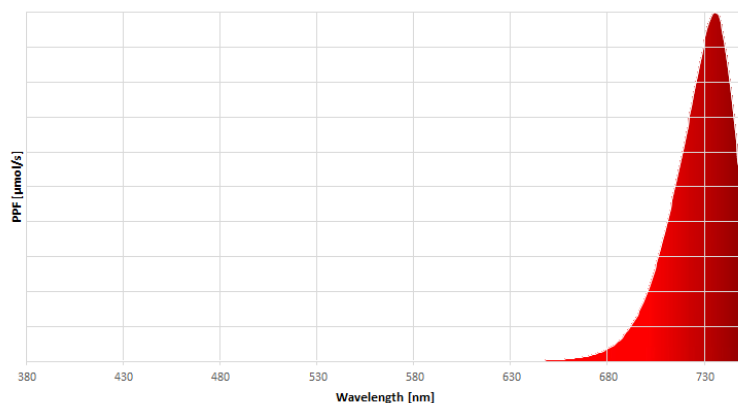
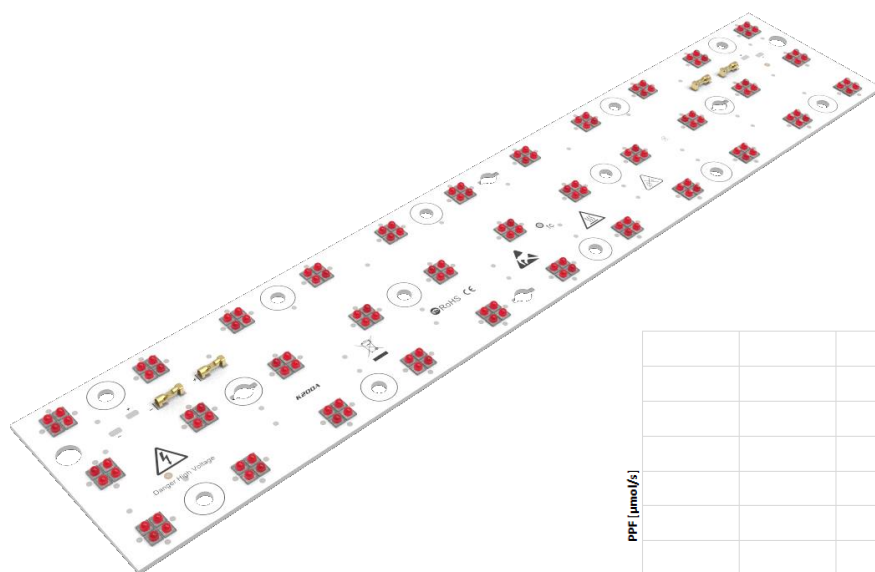


GROWEMITY 3x11 FFFF- K200

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm]	Radiant Power [mW]	PPF [$\mu\text{mol/s}$]	PPF/W [$\mu\text{mol/J}$]	Article Number
GrowEmity 3x11 FFFF - K200	350	244,2	85,5	FAR RED	727	34980	21,12	0,25	L0-278053-FFFF-C1000-K200
	500	257,4	128,7	FAR RED	727	49322	29,78	0,23	L0-278053-FFFF-C1000-K200
	700	273,2	191,3	FAR RED	727	66812	40,34	0,21	L0-278053-FFFF-C1000-K200
	800	278,5	222,8	FAR RED	727	76256	46,04	0,21	L0-278053-FFFF-C1000-K200

Parameters were calculated for temperatures $T_J = 25^\circ\text{C}$

Values of these parameters were calculated for default bin and with tolerances of 15%.

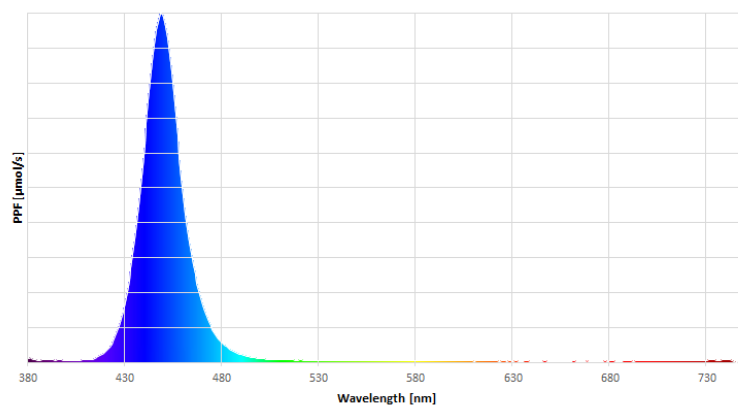
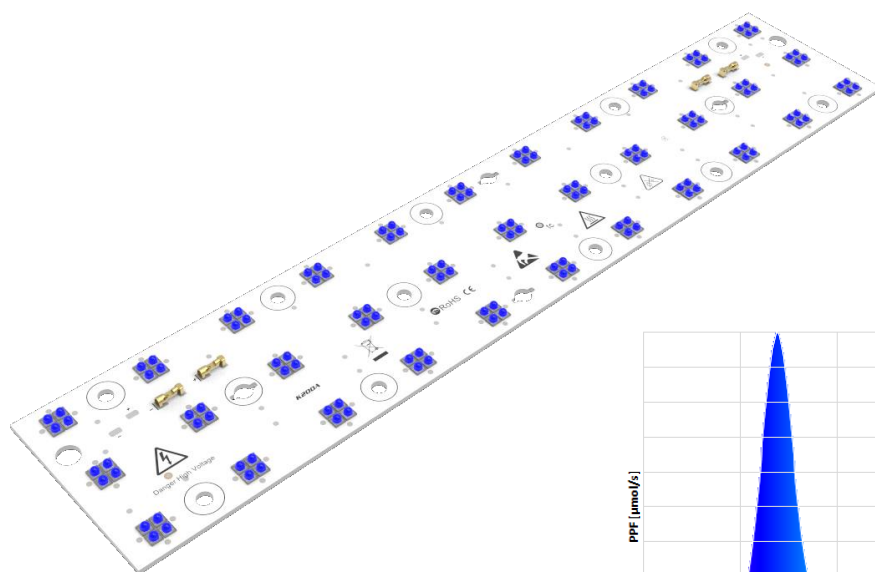


GROWEMITY 3x11 BBBB - K200

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm]	Radiant Power [mW]	PPF [$\mu\text{mol/s}$]	PPF/W [$\mu\text{mol/J}$]	Article Number
GrowEmity 3x11 BBBB - K200	350	376,2	131,7	DEEP BLUE	455	83820	310,20	2,36	L0-278053-BBBB-C1000-K200
	500	382,8	191,4	DEEP BLUE	455	116510	431,18	2,25	L0-278053-BBBB-C1000-K200
	700	392,0	274,4	DEEP BLUE	455	144170	533,54	1,94	L0-278053-BBBB-C1000-K200
	800	394,7	315,7	DEEP BLUE	455	159258	589,38	1,87	L0-278053-BBBB-C1000-K200

Parameters were calculated for temperatures $T_J = 25^\circ\text{C}$

Values of these parameters were calculated for default bin and with tolerances of 15%.

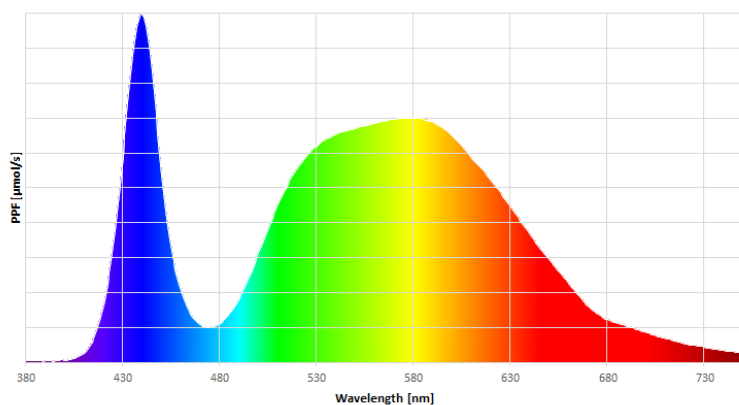
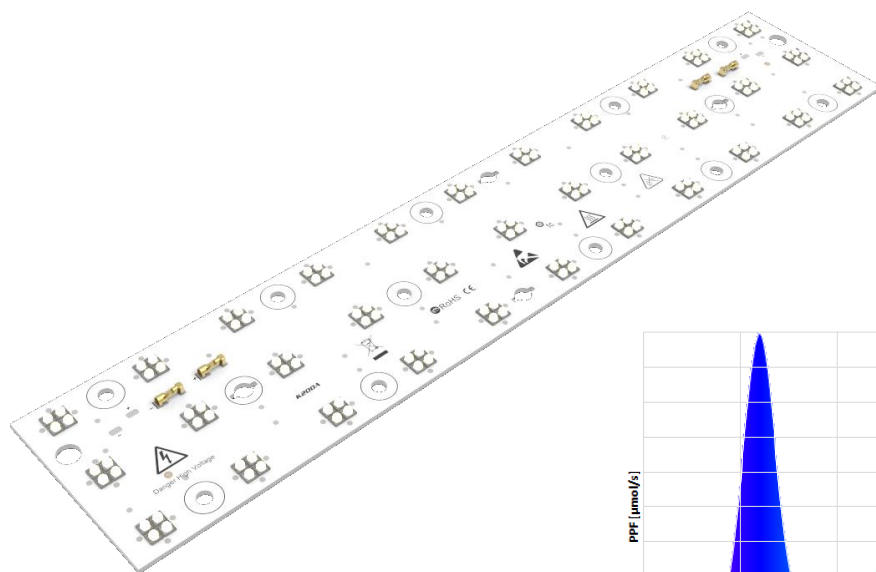


GROWEMITY 3x11 MONO - K200

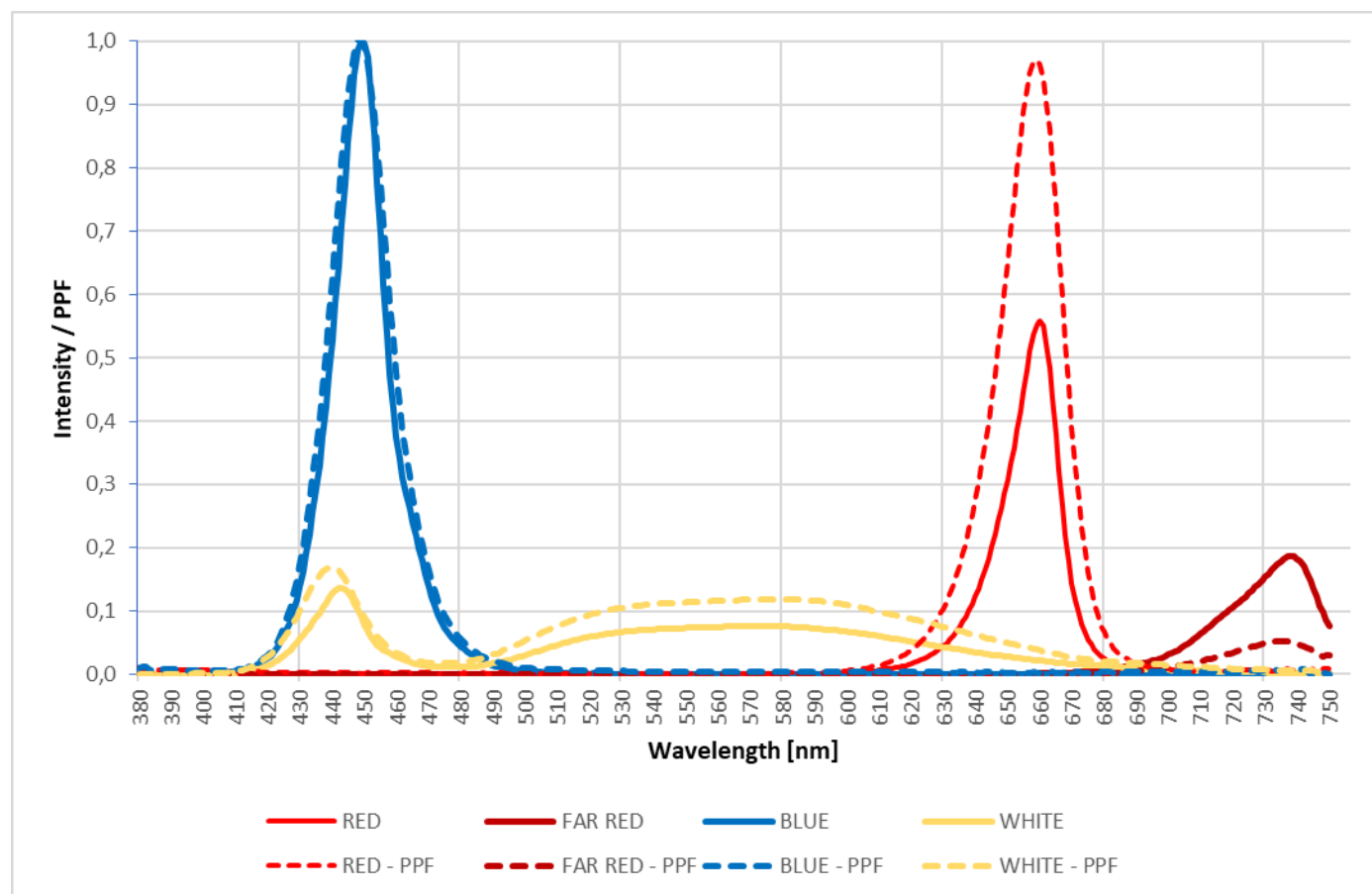
	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	CCT [K]	Luminous Flux [lm]	PPF [$\mu\text{mol/s}$]	PPF/W [$\mu\text{mol/J}$]	Article Number
GrowEmity 3x11 MONO - K200	350	363,0	127,1	WHITE	5000	19523	258,72	2,04	L0-278053-MONO-C1000-K200
	500	376,2	188,1	WHITE	5000	26746	345,84	1,84	L0-278053-MONO-C1000-K200
	700	389,4	272,6	WHITE	5000	35141	448,80	1,65	L0-278053-MONO-C1000-K200
	800	393,4	314,7	WHITE	5000	38655	493,68	1,57	L0-278053-MONO-C1000-K200

Parameters were calculated for temperatures $T_J = 25^\circ\text{C}$

Values of these parameters were calculated for default bin and with tolerances of 15%.



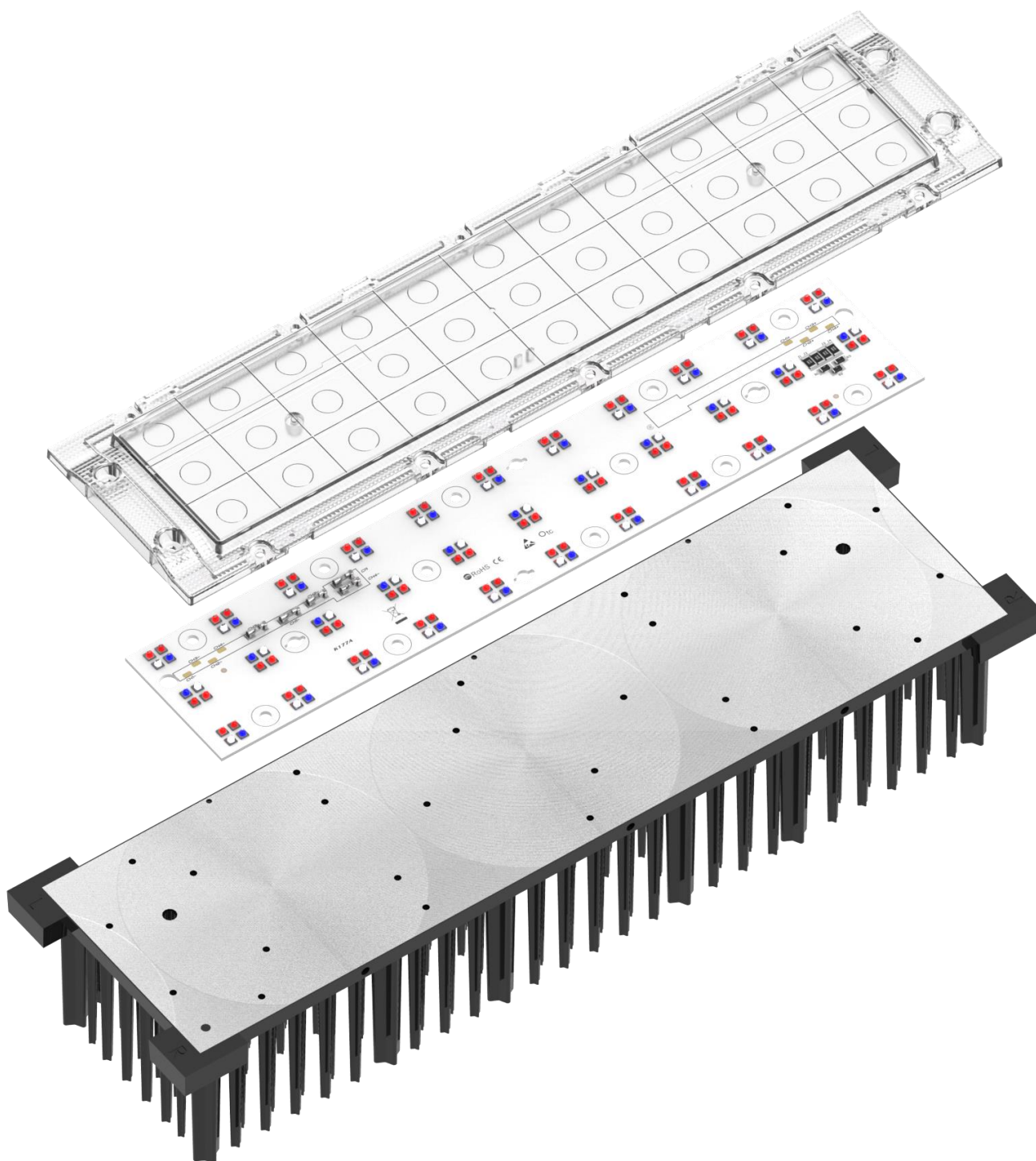
SPECTRUM OF LEDs



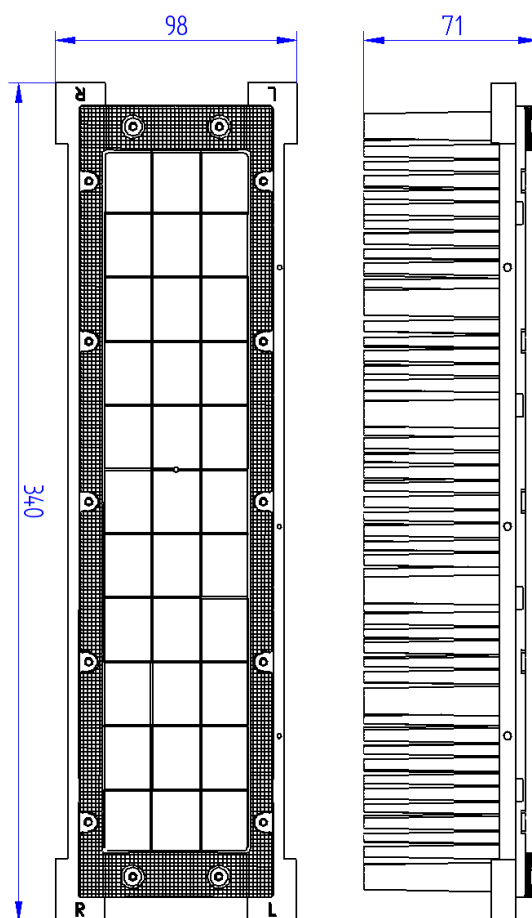
Spectrum graph of the red, far red, blue and white LEDs at 350 mA current. Spectrum can be changed by choosing LEDs and power output.

GrowEmity modules can be ordered as ready unit with heat-sink and optic. Couple of units can be mounted together, to create the GrowEmity light source with the same or different type of LEDs configuration. It ensures better efficiency and flexibility of GrowEmity lighting system. For the GrowEmity 3x11 – K177 are recommended:

- **COMPATIBLE HEAT-SINK** – COOLBLOCK® HC-01-3x11 MechaTronix
- **COMPATIBLE OPTIC** – FLORENCE-3R-IP LEDiL



Almost half of the input power is converted to heat, which means that GrowEmity light sources must be mounted to a heat-sink with thermal tape for better heat dissipation.

SIZE

COOLING

GrowEmity light source isn't self-cooling and additional heat-sink is required. The lifetime of the light source depends on the operating temperature and used LEDs. The temperature should be measured in the middle of the board. The temperature can be measured with thermocouple or simple temperature probe. Lifetime of LEDs decreases with the rise of temperature and luminous intensity in higher temperatures may be lower than nominal. Construction of the lamp or any place of installation should ensure correct heat dissipation from LED light sources. Overheat can damage or destroy some elements or entire LED light source. Never use overheated light source again as it may be damaged and can cause losses or even fire. We are not responsible for any loss, or damage resulting from overheating! Guarantee become void in such cases.

SAFETY

LED light source can change light intensity, but even dimmed LEDs generate high-intensity light. Looking into LEDs beam is unhealthy and may cause irreversible injury to eye's retina. Never look into the beam without protection glasses with an appropriate filter. Additionally, they may change LEDs light intensity almost immediately. If people are photosensitive, LEDs light may be a trigger to epileptic seizures and alter the perception, especially when light change very fast.

LED light source can work on high power supply current, so never touch components and wires of LED light source when power supply is on.

PROTECTION MEASURES AGAINST DAMAGE

LED light sources are delicate, even small mechanical stress may damage them. Such stresses should be avoided. If it is impossible, it should be kept to the minimum. Mechanical stresses such as pressure, bending, breaking, drilling, etc. may cause irreversible damage. Damaged LED light source aren't suitable for use.

Electrostatic Discharge (ESD) is a serious threat to electronics devices. The human body can accumulate very high electrostatic charge which can decrease the lifetime of electronics significantly and in worst cases may destroy electronic components. To avoid damages use of electrostatic protection is required. It is needed to follow ESD precautions during manipulation of these devices. Do not touch electronic components directly to avoid damages. Observe the official regulations for electrical devices (like DIN, VDE, EN). It is necessary to isolate components like controllers, LED light sources, power supply, wires etc. from any metal parts which can conduct electrostatic charges or cause a short circuit. LED light source aren't equipped with short circuit protection. During a short circuit, very high current is flowing from a power supply and can destroy it, causing risk of fire. Electronics must not be modified. Any modification causes loss of guarantee. The electric wiring/connection must comply with all current and valid national requirements, be constructed by a certified electrical tradesman, and comply with all the requirements set forth in this manual. We are not responsible for any loss, or damage resulting from electrostatic voltage discharge and a short circuit caused by inappropriate handling or wrong construction of the lamp! Guarantee become void in such cases.

Additionally LED light source can be damaged by some chemical substances. Depends on elements the damage may be different. It is important not to use chemical substances like acids, organic acids, sulphur, alkalis, organic solvents, mineral oils, vegetable oils and synthetic oils, etc. We are not responsible for any loss, or damage resulting from improper use of LED light source! Guarantee become void in such cases.

Do not operate LED light source when they aren't working properly. If LED light source are working incorrectly, turn off a power supply. Damaged LED light source may cause electric shock or short circuit.

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Subject to errors and technical changes.