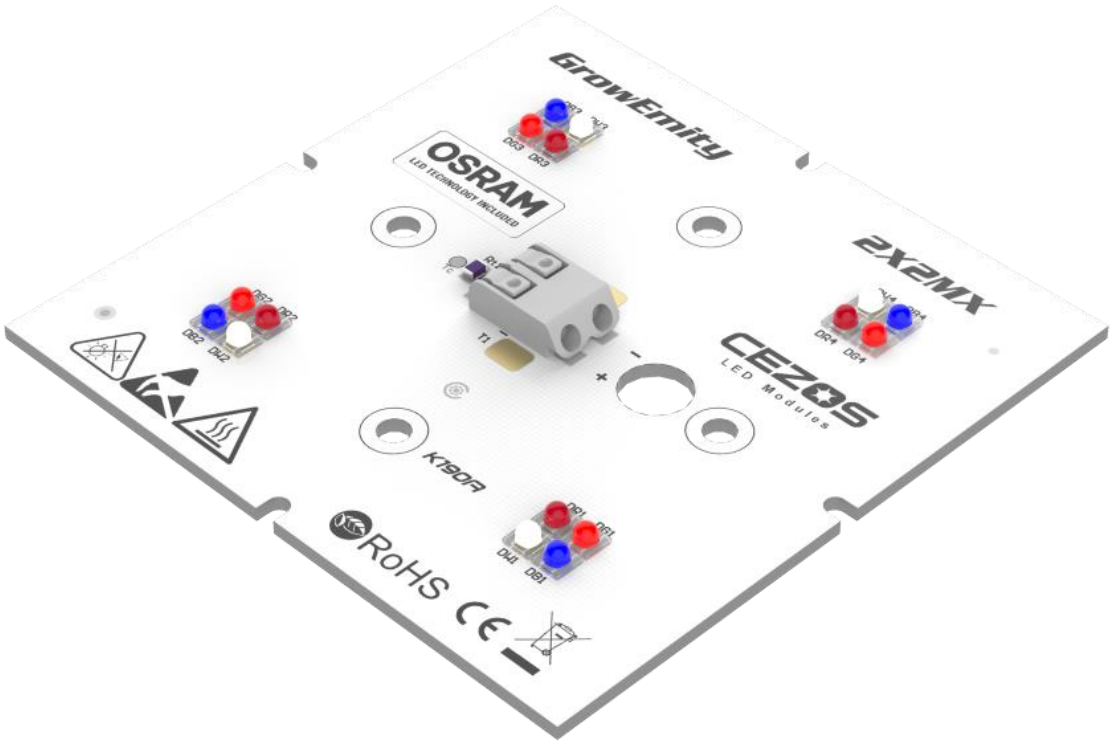
GrowEmity 2x2MX - K190



GrowEmity 2x2MX – K190

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 4 LEDs).

Colour	λ [nm] / CCT [K]	Input Current [mA]	Forward Voltage [V]	Power [W]	Radiant Power [mW] / Luminous Flux [lm]	PPF [µmol/s]	PPF/W [µmol/J]
RED	625	350	8,4	2,9	329	7,52	2,56
		500	8,8	4,4	466	10,64	2,41
		700	9,3	6,5	645	14,72	2,25
		800	9,6	7,6	728	16,61	2,17
		1000	10,1	10,1	893	20,40	2,02
HYPER RED SQUARE*	657	350	8,0	2,8	1920	10,48	3,74
		500	8,2	4,1	2746	14,99	3,66
		700	8,6	6,0	3840	20,96	3,49
		800	8,8	7,0	4416	24,10	3,44
		1000	9,0	9,0	5453	29,76	3,31
HYPER RED SSL	657	350	8,6	3,0	1700	9,22	3,06
		500	9,0	4,5	2397	13,00	2,89
		700	9,6	6,7	3247	17,61	2,62
		800	9,9	7,9	3706	20,10	2,53
		1000	10,3	10,3	4463	24,20	2,35
FAR RED	727	350	7,4	2,6	1060	0,64	0,25
		500	7,8	3,9	1495	0,90	0,23
		700	8,3	5,8	2025	1,22	0,21
		800	8,4	6,8	2311	1,40	0,21
		1000	8,9	8,9	2783	1,68	0,19
DEEP BLUE SQUARE*	450	350	11,2	3,9	2912	10,92	2,78
		500	11,2	5,7	4144	15,54	2,73
		700	11,6	8,1	5600	21,00	2,59
		800	11,7	9,3	6160	23,10	2,47
		1000	11,9	11,9	7560	28,35	2,38
DEEP BLUE SSL	455	350	11,4	4,0	2540	9,40	2,36
		500	11,6	5,8	3531	13,07	2,25
		700	11,9	8,3	4369	16,17	1,94
		800	12,0	9,6	4826	17,86	1,87
		1000	12,2	12,2	6096	22,56	1,84
BLUE	470	350	11,4	4,0	112	6,48	1,62
		500	11,7	5,9	148	8,56	1,46
		700	12,2	8,5	192	11,08	1,30
		800	12,2	9,8	211	12,19	1,25
		1000	12,6	12,6	249	14,40	1,14
TRUE GREEN	528	350	13,4	4,7	484	4,48	0,95
		500	13,7	6,9	631	5,84	0,85
		700	14,2	9,9	804	7,44	0,75
		800	14,2	11,4	880	8,15	0,72
		1000	14,7	14,7	1033	9,56	0,65
AMBER	617	350	8,4	2,9	357	7,88	2,68
		500	8,8	4,4	502	11,08	2,51
		700	9,4	6,5	685	15,12	2,31
		800	9,6	7,6	769	16,99	2,22
		1000	10,1	10,1	938	20,72	2,05
YELLOW	590	350	8,8	3,1	328	3,48	1,13
		500	9,2	4,6	449	4,76	1,03
		700	9,8	6,8	573	6,08	0,89
		800	9,8	7,9	615	6,52	0,83
		1000	10,4	10,4	697	7,40	0,71
WHITE	5000	350	11,0	3,9	592	7,84	2,04
		500	11,4	5,7	810	10,48	1,84
		700	11,8	8,3	1065	13,60	1,65
		800	11,9	9,5	1171	14,96	1,57
		1000	13,3	13,3	1357	17,34	1,35

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

* LED on special request. They have higher intensity and efficacy then standard used.

Calculated parameters at T_J = 25°C

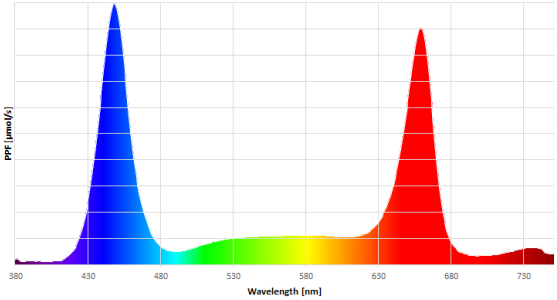
Name	GrowEmity 2x2MX – K190
Size	70x70 mm
Power Supply Type	Constant Current (CC)
Number Of Channels	1
Power Supply Current	Max. 1000 mA
Far Red LED	OSRAM - GF CSSPM1.24
Red LED	OSRAM - GH CSSPM1.24
Deep Blue LED	OSRAM - GD CSSPM1.14
White LED	OSRAM - GW CSHPM1.PM
Ambient Temperature	0 - 40°C
Material Type / Thickness	MCPCB / 1,5 mm

GrowEmity 2x2MX RFBW - K190

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm] / CCT [K]	Radiant Power [mW] / Luminous Flux [lm]	PPF [µmol/s]	PPF/W [µmol/J]	Total PPF [µmol/s]	Total PPF/W [µmol/J]	Article Number
GrowEmity 2x2MX RFBW-K190	350	38,4	13,4	RED	657	1700	9,22	3,06	27,10	2,02	Q0-070070-RFBW-C1000-K190
				FAR RED	727	1060	0,64	0,25			
				DEEP BLUE	455	2540	9,40	2,36			
				WHITE	5000	592	7,84	2,04			
	500	39,8	19,9	RED	657	2397	13,00	2,89	37,45	1,88	Q0-070070-RFBW-C1000-K190
				FAR RED	727	1495	0,90	0,23			
				DEEP BLUE	455	3531	13,07	2,25			
				WHITE	5000	810	10,48	1,84			
	700	41,6	29,1	RED	657	3247	17,61	2,62	48,60	1,67	Q0-070070-RFBW-C1000-K190
				FAR RED	727	2025	1,22	0,21			
				DEEP BLUE	455	4369	16,17	1,94			
				WHITE	5000	1065	13,60	1,65			
	800	42,2	33,8	RED	657	3706	20,10	2,53	54,31	1,61	Q0-070070-RFBW-C1000-K190
				FAR RED	727	2311	1,40	0,21			
				DEEP BLUE	455	4826	17,86	1,87			
				WHITE	5000	1171	14,96	1,57			

Parameters were calculated for temperatures T_J= 25°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%.

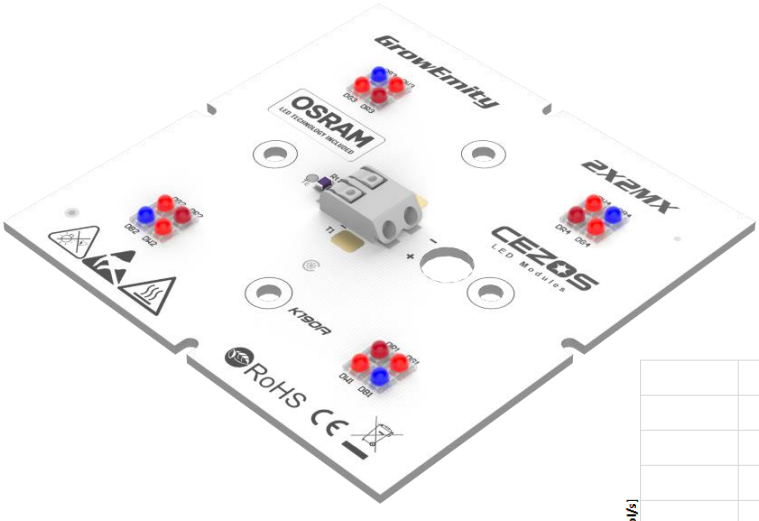
Different type of plants have different requirements for the best growth, so to maximized effect, GrowEmity light sources have many sets of LEDs configuration. Most commands LED types are: red, far red, hyper red, blue, deep blue and white with different colour temperature. Some examples are below.

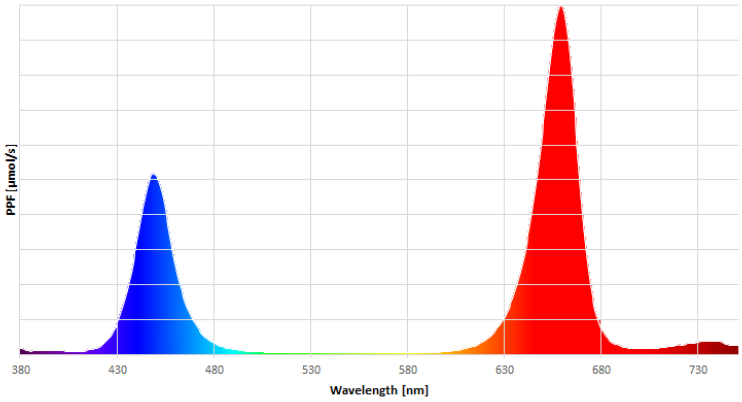


GrowEmity 2x2MX RRFB – K190

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm]	Radiant Power [mW]	PPF [µmol/s]	PPF/W [µmol/J]	Total PPF [µmol/s]	Total PPF/W [µmol/J]	Article Number
GrowEmity 2x2MX RRFB-K190	350	36,0	12,6	RED	657	3400	18,44	3,06	28,48	2,26	Q0-070070-RRFB-C1000-K190
				FAR RED	727	1060	0,64	0,25			
				DEEP BLUE	455	2540	9,40	2,36			
	500	37,4	18,7	RED	657	4794	26,00	2,89	39,97	2,14	Q0-070070-RRFB-C1000-K190
				FAR RED	727	1495	0,90	0,23			
				DEEP BLUE	455	3531	13,07	2,25			
	700	39,4	27,6	RED	657	6494	35,22	2,62	52,61	1,91	Q0-070070-RRFB-C1000-K190
				FAR RED	727	2025	1,22	0,21			
				DEEP BLUE	455	4369	16,17	1,94			
	800	40,2	32,2	RED	657	7412	40,20	2,53	59,45	1,85	Q0-070070-RRFB-C1000-K190
				FAR RED	727	2311	1,40	0,21			
				DEEP BLUE	455	4826	17,86	1,87			

Parameters were calculated for temperatures T_J= 25°C
Values of these parameters were calculated for default bin and with tolerances of 15%.

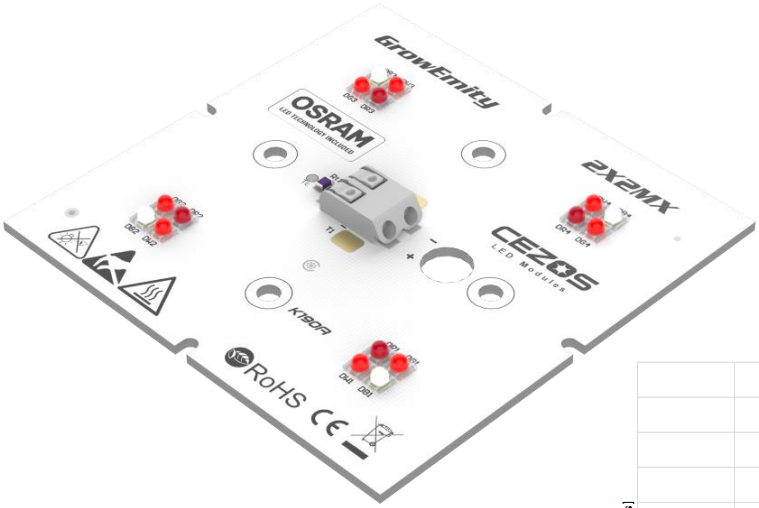


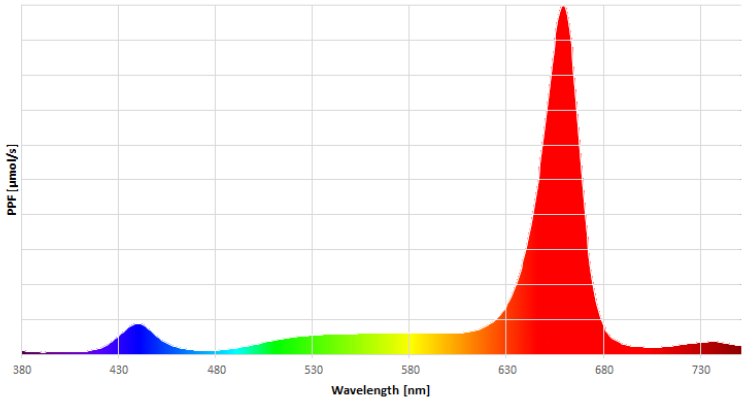


GrowEmity 2x2MX RRFW – K190

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm] / CCT [K]	Radiant Power [mW] / Luminous Flux [lm]	PPF [µmol/s]	PPF/W [µmol/J]	Total PPF [µmol/s]	Total PPF/W [µmol/J]	Article Number
GrowEmity 2x2MX RRFW-K190	350	35,6	12,5	RED	657	3400	18,44	3,06	26,92	2,16	Q0-070070-RRFW-C1000-K190
				FAR RED	727	1060	0,64	0,25			
				WHITE	5000	592	7,84	2,04			
	500	37,2	18,6	RED	657	4794	26,00	2,89	37,38	2,01	Q0-070070-RRFW-C1000-K190
				FAR RED	727	1495	0,90	0,23			
				WHITE	5000	810	10,48	1,84			
	700	39,3	27,5	RED	657	6494	35,22	2,62	50,04	1,82	Q0-070070-RRFW-C1000-K190
				FAR RED	727	2025	1,22	0,21			
				WHITE	5000	1065	13,60	1,65			
	800	40,2	32,2	RED	657	7412	40,20	2,53	56,55	1,76	Q0-070070-RRFW-C1000-K190
				FAR RED	727	2311	1,40	0,21			
				WHITE	5000	1171	14,96	1,57			

Parameters were calculated for temperatures T_J= 25°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%.

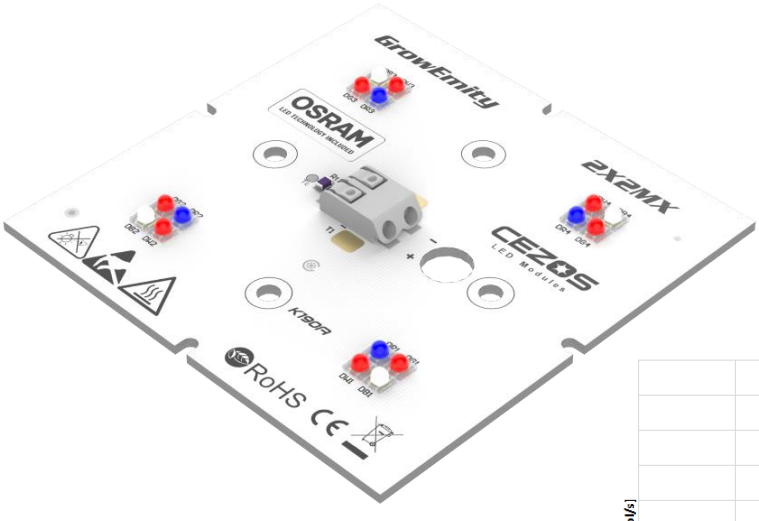


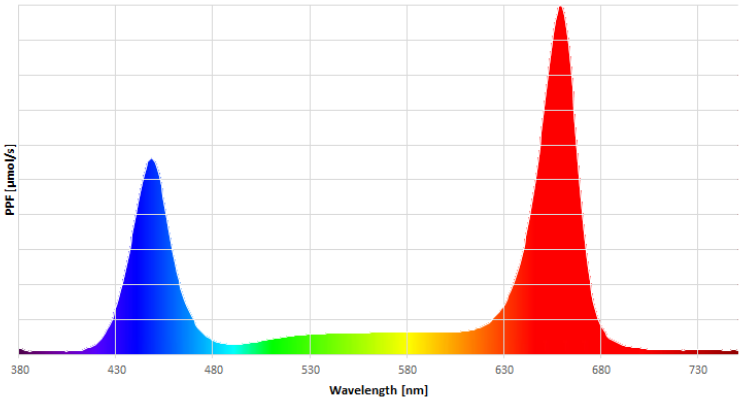


GrowEmitty 2x2MX RRBW – K190

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm] / CCT [K]	Radiant Power [mW] / Luminous Flux [lm]	PPF [µmol/s]	PPF/W [µmol/J]	Total PPF [µmol/s]	Total PPF/W [µmol/J]	Article Number
GrowEmitty 2x2MX RRBW-K190	350	39,6	13,9	RED	657	3400	18,44	3,06	35,68	2,57	Q0-070070-RRBW-C1000-K190
				DEEP BLUE	455	2540	9,40	2,36			
				WHITE	5000	592	7,84	2,04			
	500	41,0	20,5	RED	657	4794	26,00	2,89	49,55	2,42	Q0-070070-RRBW-C1000-K190
				DEEP BLUE	455	3531	13,07	2,25			
				WHITE	5000	810	10,48	1,84			
	700	42,9	30,0	RED	657	6494	35,22	2,62	64,99	2,17	Q0-070070-RRBW-C1000-K190
				DEEP BLUE	455	4369	16,17	1,94			
				WHITE	5000	1065	13,60	1,65			
	800	43,7	35,0	RED	657	7412	40,20	2,53	73,02	2,09	Q0-070070-RRBW-C1000-K190
				DEEP BLUE	455	4826	17,86	1,87			
				WHITE	5000	1171	14,96	1,57			

Parameters were calculated for temperatures T_J= 25°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%.





LED Light for you powered by OSRAM

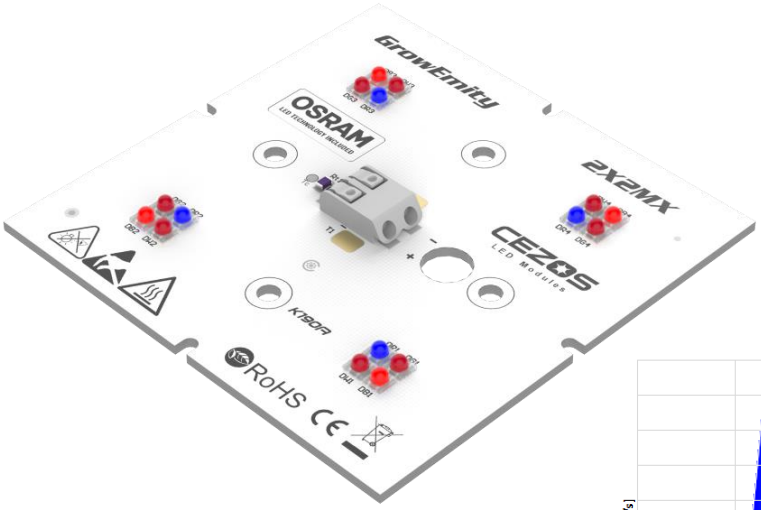
LEDiL

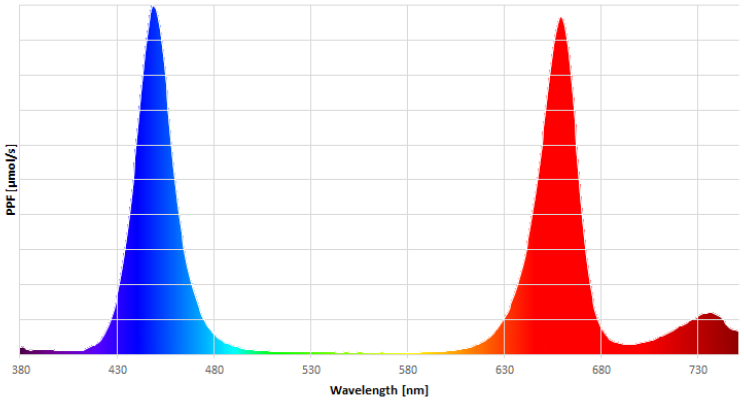
MTX MechaTronix

GrowEmitty 2x2MX RFFB – K190

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm]	Radiant Power [mW]	PPF [µmol/s]	PPF/W [µmol/J]	Total PPF [µmol/s]	Total PPF/W [µmol/J]	Article Number
GrowEmitty 2x2MX RFFB-K190	350	34,8	12,2	RED	657	1700	9,22	3,06	19,90	1,63	Q0-070070-RFFB-C1000-K190
				FAR RED	727	2120	1,28	0,25			
				DEEP BLUE	455	2540	9,40	2,36			
	500	36,2	18,1	RED	657	2397	13,00	2,89	27,87	1,54	Q0-070070-RFFB-C1000-K190
				FAR RED	727	2989	1,80	0,23			
				DEEP BLUE	455	3531	13,07	2,25			
	700	38,0	26,6	RED	657	3247	17,61	2,62	36,22	1,36	Q0-070070-RFFB-C1000-K190
				FAR RED	727	4049	2,44	0,21			
				DEEP BLUE	455	4369	16,17	1,94			
	800	38,8	31,0	RED	657	3706	20,10	2,53	40,75	1,31	Q0-070070-RFFB-C1000-K190
				FAR RED	727	4622	2,79	0,21			
				DEEP BLUE	455	4826	17,86	1,87			

Parameters were calculated for temperatures T_J= 25°C
Values of these parameters were calculated for default bin and with tolerances of 15%.

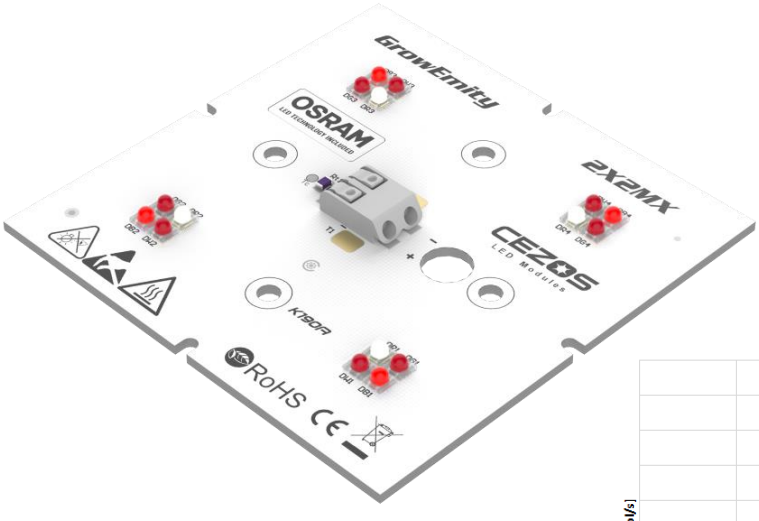


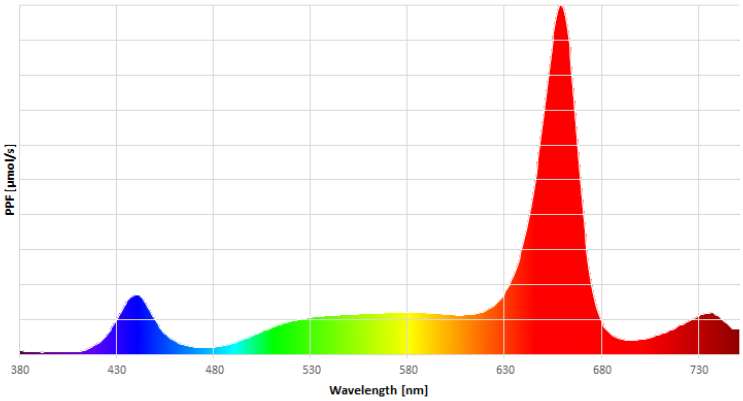


GrowEmity 2x2MX RFFW – K190

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm] / CCT [K]	Radiant Power [mW] / Luminous Flux [lm]	PPF [µmol/s]	PPF/W [µmol/J]	Total PPF [µmol/s]	Total PPF/W [µmol/J]	Article Number
GrowEmity 2x2MX RFFW-K190	350	34,4	12,0	RED	657	1700	9,22	3,06	18,34	1,52	Q0-070070-RFFW-C1000-K190
				FAR RED	727	2120	1,28	0,25			
				WHITE	5000	592	7,84	2,04			
	500	36,0	18,0	RED	657	2397	13,00	2,89	25,29	1,40	Q0-070070-RFFW-C1000-K190
				FAR RED	727	2989	1,80	0,23			
				WHITE	5000	810	10,48	1,84			
	700	38,0	26,6	RED	657	3247	17,61	2,62	33,66	1,27	Q0-070070-RFFW-C1000-K190
				FAR RED	727	4049	2,44	0,21			
				WHITE	5000	1065	13,60	1,65			
	800	38,7	31,0	RED	657	3706	20,10	2,53	37,85	1,22	Q0-070070-RFFW-C1000-K190
				FAR RED	727	4622	2,79	0,21			
				WHITE	5000	1171	14,96	1,57			

Parameters were calculated for temperatures T_J= 25°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%.





LED Light for you powered by OSRAM

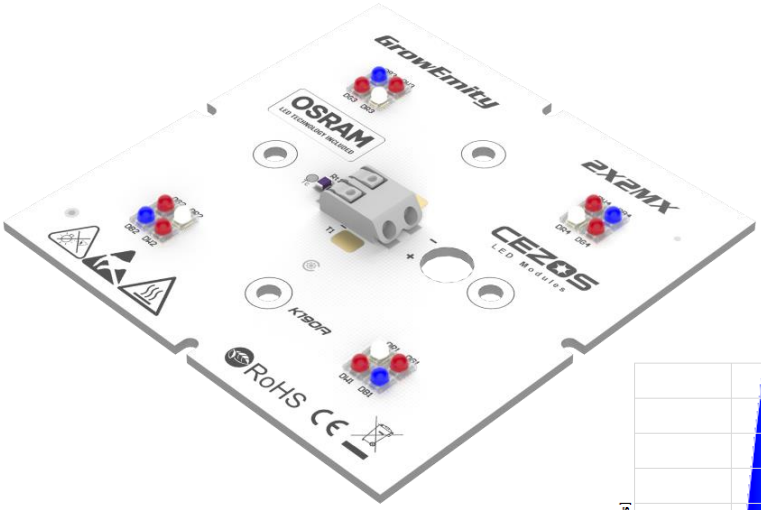
LEDiL

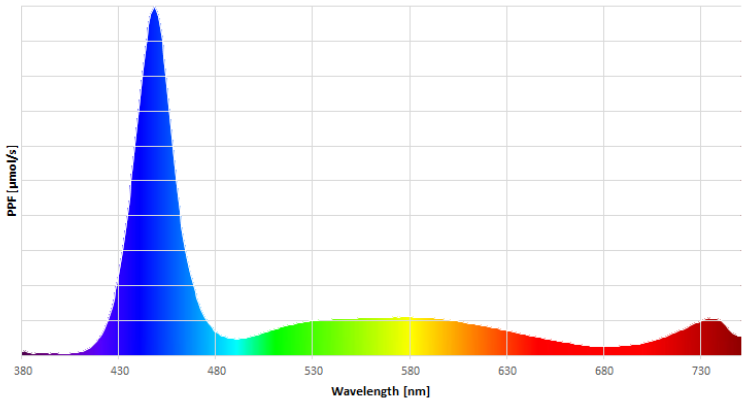
MTX MechaTronix

GrowEmitty 2x2MX FFBW – K190

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm] / CCT [K]	Radiant Power [mW] / Luminous Flux [lm]	PPF [µmol/s]	PPF/W [µmol/J]	Total PPF [µmol/s]	Total PPF/W [µmol/J]	Article Number
GrowEmitty 2x2MX FFBW-K190	350	37,2	13,0	FAR RED	727	2120	1,28	0,25	18,52	1,42	Q0-070070-FFBW-C1000-K190
				DEEP BLUE	455	2540	9,40	2,36			
				WHITE	5000	592	7,84	2,04			
	500	38,6	19,3	FAR RED	727	2989	1,80	0,23	25,35	1,31	Q0-070070-FFBW-C1000-K190
				DEEP BLUE	455	3531	13,07	2,25			
				WHITE	5000	810	10,48	1,84			
	700	40,2	28,2	FAR RED	727	4049	2,44	0,21	32,21	1,14	Q0-070070-FFBW-C1000-K190
				DEEP BLUE	455	4369	16,17	1,94			
				WHITE	5000	1065	13,60	1,65			
	800	40,8	32,6	FAR RED	727	4622	2,79	0,21	35,61	1,09	Q0-070070-FFBW-C1000-K190
				DEEP BLUE	455	4826	17,86	1,87			
				WHITE	5000	1171	14,96	1,57			

Parameters were calculated for temperatures T_J= 25°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%.

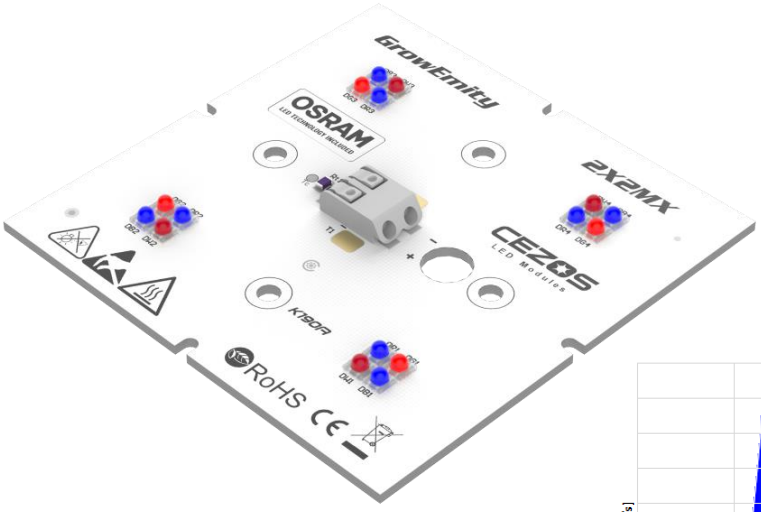


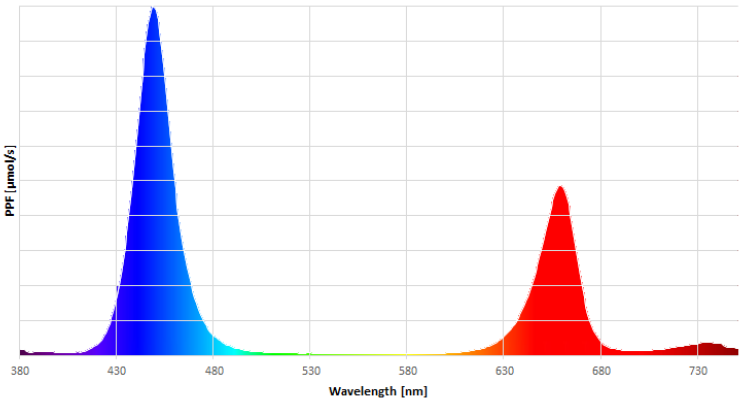


GrowEmity 2x2MX RFBB – K190

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm]	Radiant Power [mW]	PPF [µmol/s]	PPF/W [µmol/J]	Total PPF [µmol/s]	Total PPF/W [µmol/J]	Article Number
GrowEmity 2x2MX RFBB-K190	350	38,8	13,6	RED	657	1700	9,22	3,06	28,66	2,11	Q0-070070-RFBB-C1000-K190
				FAR RED	727	1060	0,64	0,25			
				DEEP BLUE	455	5080	18,80	2,36			
	500	40,0	20,0	RED	657	2397	13,00	2,89	40,03	2,00	Q0-070070-RFBB-C1000-K190
				FAR RED	727	1495	0,90	0,23			
				DEEP BLUE	455	7061	26,13	2,25			
	700	41,6	29,1	RED	657	3247	17,61	2,62	51,17	1,76	Q0-070070-RFBB-C1000-K190
				FAR RED	727	2025	1,22	0,21			
				DEEP BLUE	455	8738	32,34	1,94			
	800	42,3	33,8	RED	657	3706	20,10	2,53	57,21	1,69	Q0-070070-RFBB-C1000-K190
				FAR RED	727	2311	1,40	0,21			
				DEEP BLUE	455	9652	35,72	1,87			

Parameters were calculated for temperatures T_J= 25°C
Values of these parameters were calculated for default bin and with tolerances of 15%.

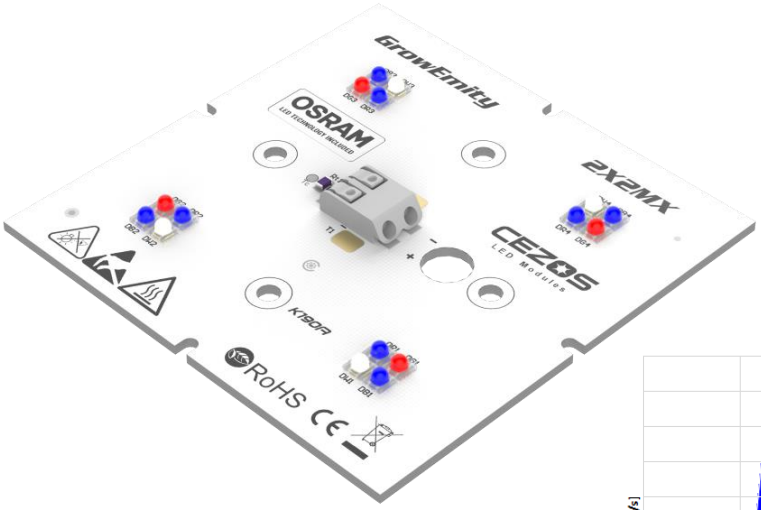


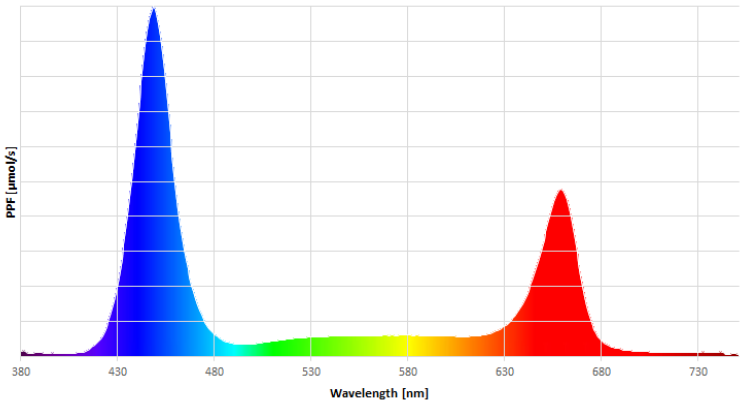


GrowEmity 2x2MX RBBW – K190

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm] / CCT [K]	Radiant Power [mW] / Luminous Flux [lm]	PPF [µmol/s]	PPF/W [µmol/J]	Total PPF [µmol/s]	Total PPF/W [µmol/J]	Article Number
GrowEmity 2x2MX RBBW-K190	350	42,4	14,8	RED	657	1700	9,22	3,06	35,86	2,42	Q0-070070-RBBW-C1000-K190
				DEEP BLUE	455	5080	18,80	2,36			
				WHITE	5000	592	7,84	2,04			
	500	43,6	21,8	RED	657	2397	13,00	2,89	49,61	2,28	Q0-070070-RBBW-C1000-K190
				DEEP BLUE	455	7061	26,13	2,25			
				WHITE	5000	810	10,48	1,84			
	700	45,2	31,6	RED	657	3247	17,61	2,62	63,55	2,01	Q0-070070-RBBW-C1000-K190
				DEEP BLUE	455	8738	32,34	1,94			
				WHITE	5000	1065	13,60	1,65			
	800	45,8	36,6	RED	657	3706	20,10	2,53	70,78	1,93	Q0-070070-RBBW-C1000-K190
				DEEP BLUE	455	9652	35,72	1,87			
				WHITE	5000	1171	14,96	1,57			

Parameters were calculated for temperatures T_J= 25°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%.





LED Light for you powered by OSRAM

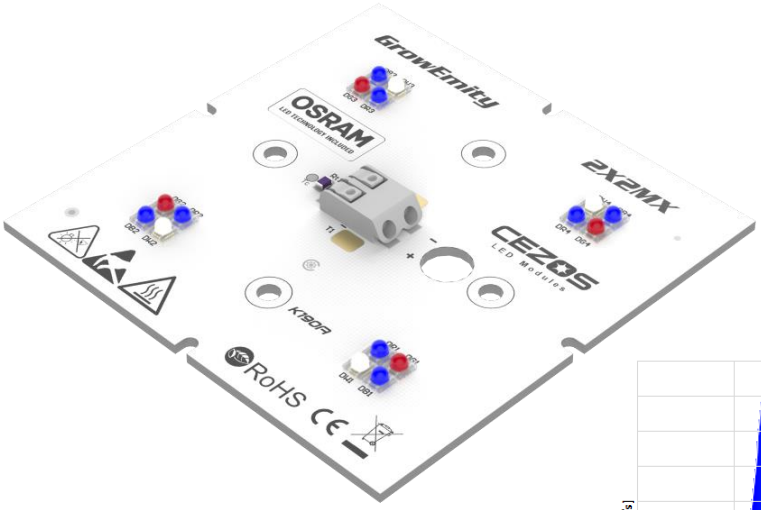
LEDiL

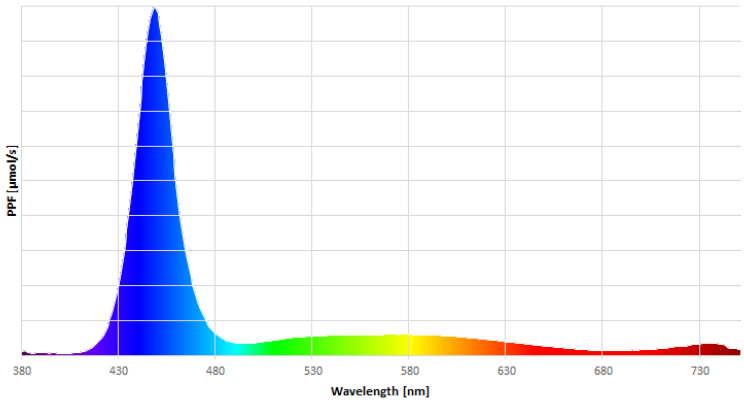
MTX MechaTronix

GrowEmity 2x2MX FBBW – K190

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm] / CCT [K]	Radiant Power [mW] / Luminous Flux [lm]	PPF [µmol/s]	PPF/W [µmol/J]	Total PPF [µmol/s]	Total PPF/W [µmol/J]	Article Number
GrowEmity 2x2MX FBBW-K190	350	41,2	14,4	FAR RED	727	1060	0,64	0,25	27,28	1,89	Q0-070070-FBBW-C1000-K190
				DEEP BLUE	455	5080	18,80	2,36			
				WHITE	5000	592	7,84	2,04			
	500	42,4	21,2	FAR RED	727	1495	0,90	0,23	37,51	1,77	Q0-070070-FBBW-C1000-K190
				DEEP BLUE	455	7061	26,13	2,25			
				WHITE	5000	810	10,48	1,84			
	700	43,8	30,7	FAR RED	727	2025	1,22	0,21	47,16	1,54	Q0-070070-FBBW-C1000-K190
				DEEP BLUE	455	8738	32,34	1,94			
				WHITE	5000	1065	13,60	1,65			
	800	44,3	35,4	FAR RED	727	2311	1,40	0,21	52,08	1,47	Q0-070070-FBBW-C1000-K190
				DEEP BLUE	455	9652	35,72	1,87			
				WHITE	5000	1171	14,96	1,57			

Parameters were calculated for temperatures T_J= 25°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%.





LED Light for you powered by OSRAM

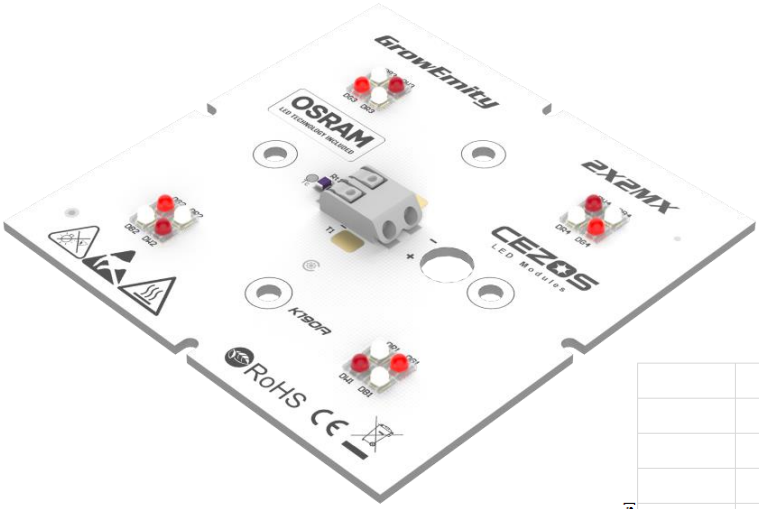
LEDiL

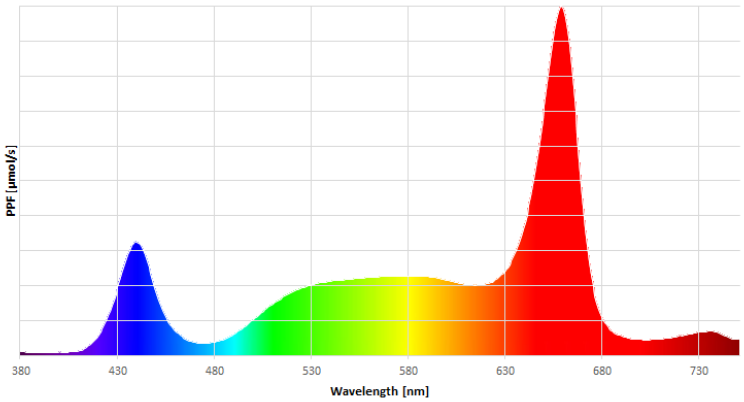
MTX MechaTronix

GrowEmity 2x2MX RFWW – K190

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm] / CCT [K]	Radiant Power [mW] / Luminous Flux [lm]	PPF [µmol/s]	PPF/W [µmol/J]	Total PPF [µmol/s]	Total PPF/W [µmol/J]	Article Number
GrowEmity 2x2MX RFWW-K190	350	38,0	13,3	RED	657	1700	9,22	3,06	25,54	1,92	Q0-070070-RFWW-C1000-K190
				FAR RED	727	1060	0,64	0,25			
				WHITE	5000	1183	15,68	2,04			
	500	39,6	19,8	RED	657	2397	13,00	2,89	34,86	1,76	Q0-070070-RFWW-C1000-K190
				FAR RED	727	1495	0,90	0,23			
				WHITE	5000	1621	20,96	1,84			
	700	41,5	29,0	RED	657	3247	17,61	2,62	46,03	1,59	Q0-070070-RFWW-C1000-K190
				FAR RED	727	2025	1,22	0,21			
				WHITE	5000	2130	27,20	1,65			
	800	42,2	33,8	RED	657	3706	20,10	2,53	51,41	1,52	Q0-070070-RFWW-C1000-K190
				FAR RED	727	2311	1,40	0,21			
				WHITE	5000	2343	29,92	1,57			

Parameters were calculated for temperatures T_J= 25°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%.

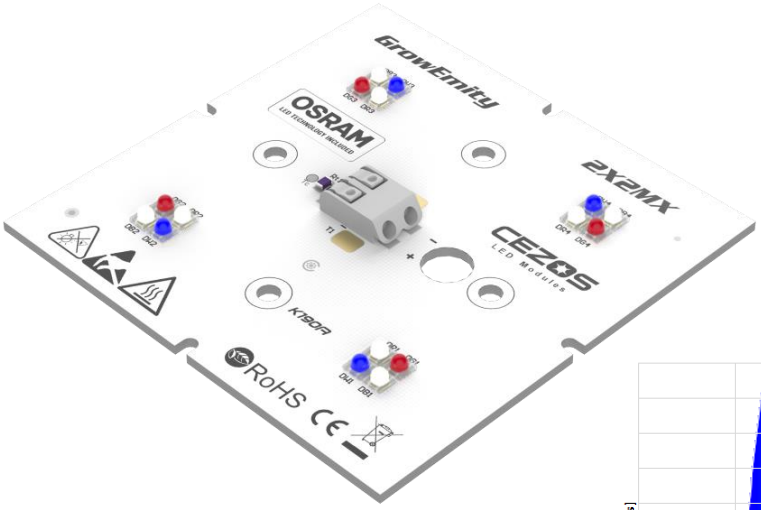


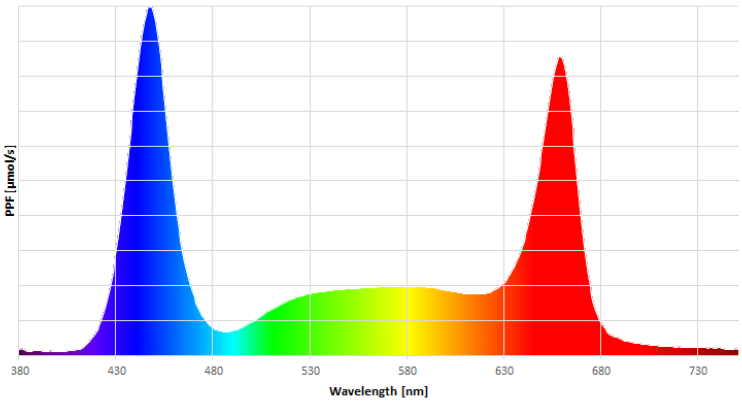


GrowEmity 2x2MX RBWW – K190

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm] / CCT [K]	Radiant Power [mW] / Luminous Flux [lm]	PPF [µmol/s]	PPF/W [µmol/J]	Total PPF [µmol/s]	Total PPF/W [µmol/J]	Article Number
GrowEmity 2x2MX RBWW-K190	350	42,0	14,7	RED	657	1700	9,22	3,06	34,30	2,33	Q0-070070-RBWW-C1000-K190
				DEEP BLUE	455	2540	9,40	2,36			
				WHITE	5000	1183	15,68	2,04			
	500	43,4	21,7	RED	657	2397	13,00	2,89	47,03	2,17	Q0-070070-RBWW-C1000-K190
				DEEP BLUE	455	3531	13,07	2,25			
				WHITE	5000	1621	20,96	1,84			
	700	45,1	31,6	RED	657	3247	17,61	2,62	60,98	1,93	Q0-070070-RBWW-C1000-K190
				DEEP BLUE	455	4369	16,17	1,94			
				WHITE	5000	2130	27,20	1,65			
	800	45,7	36,6	RED	657	3706	20,10	2,53	67,88	1,86	Q0-070070-RBWW-C1000-K190
				DEEP BLUE	455	4826	17,86	1,87			
				WHITE	5000	2343	29,92	1,57			

Parameters were calculated for temperatures T_J= 25°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%.

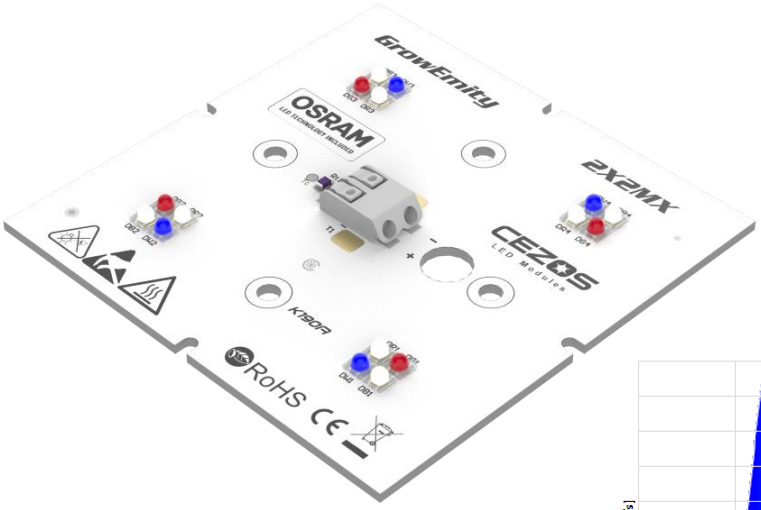


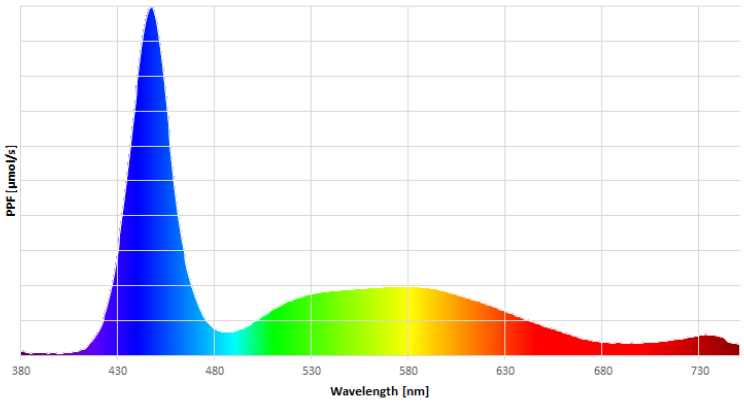


GrowEmitty 2x2MX FBWW – K190

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm] / CCT [K]	Radiant Power [mW] / Luminous Flux [lm]	PPF [µmol/s]	PPF/W [µmol/J]	Total PPF [µmol/s]	Total PPF/W [µmol/J]	Article Number
GrowEmitty 2x2MX FBWW-K190	350	40,8	14,3	FAR RED	727	1060	0,64	0,25	25,72	1,80	Q0-070070-FBWW-C1000-K190
				DEEP BLUE	455	2540	9,40	2,36			
				WHITE	5000	1183	15,68	2,04			
	500	42,2	21,1	FAR RED	727	1495	0,90	0,23	34,93	1,66	Q0-070070-FBWW-C1000-K190
				DEEP BLUE	455	3531	13,07	2,25			
				WHITE	5000	1621	20,96	1,84			
	700	43,8	30,6	FAR RED	727	2025	1,22	0,21	44,59	1,46	Q0-070070-FBWW-C1000-K190
				DEEP BLUE	455	4369	16,17	1,94			
				WHITE	5000	2130	27,20	1,65			
	800	44,2	35,4	FAR RED	727	2311	1,40	0,21	49,18	1,39	Q0-070070-FBWW-C1000-K190
				DEEP BLUE	455	4826	17,86	1,87			
				WHITE	5000	2343	29,92	1,57			

Parameters were calculated for temperatures T_J= 25°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%.





LED Light for you powered by OSRAM

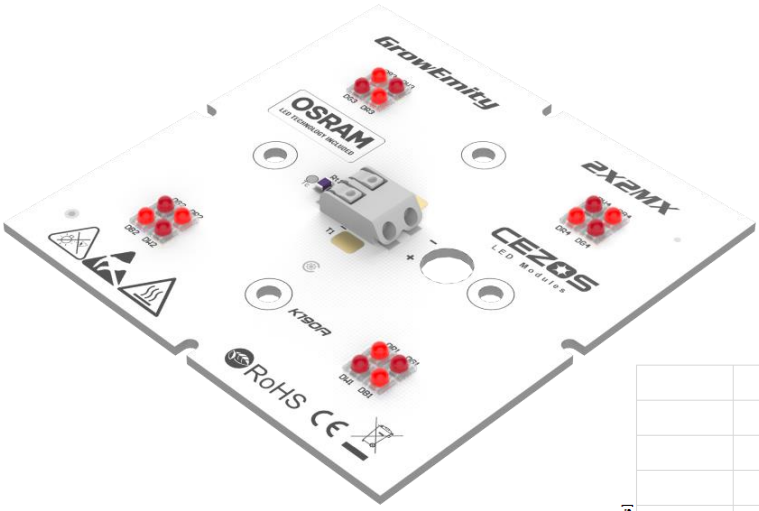
LEDiL

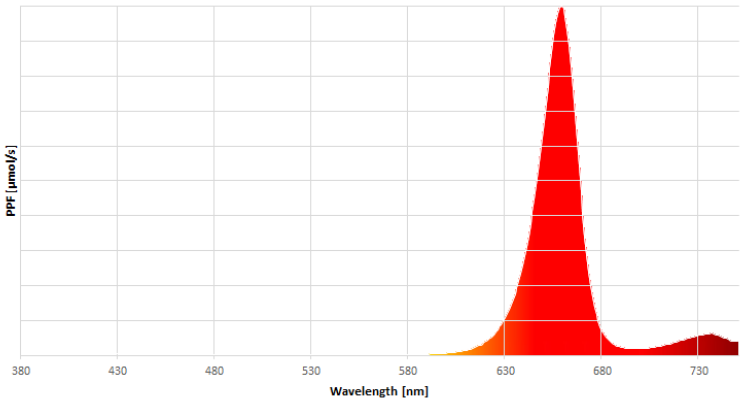
MechaTronix

GrowEmity 2x2MX RRFF – K190

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm]	Radiant Power [mW]	PPF [µmol/s]	PPF/W [µmol/J]	Total PPF [µmol/s]	Total PPF/W [µmol/J]	Article Number
GrowEmity 2x2MX RRFF-K190	350	32,0	11,2	RED	657	3400	18,44	3,06	19,72	1,76	Q0-070070-RRFF-C1000-K190
				FAR RED	727	2120	1,28	0,25			
	500	33,6	16,8	RED	657	4794	26,00	2,89	27,81	1,66	Q0-070070-RRFF-C1000-K190
				FAR RED	727	2989	1,80	0,23			
	700	35,8	25,0	RED	657	6494	35,22	2,62	37,67	1,50	Q0-070070-RRFF-C1000-K190
				FAR RED	727	4049	2,44	0,21			
	800	36,7	29,4	RED	657	7412	40,20	2,53	42,99	1,46	Q0-070070-RRFF-C1000-K190
				FAR RED	727	4622	2,79	0,21			

Parameters were calculated for temperatures T_J= 25°C
Values of these parameters were calculated for default bin and with tolerances of 15%.

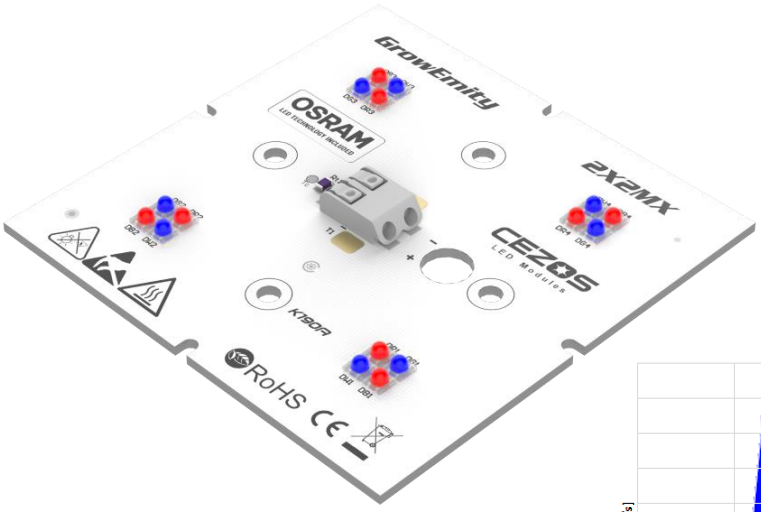


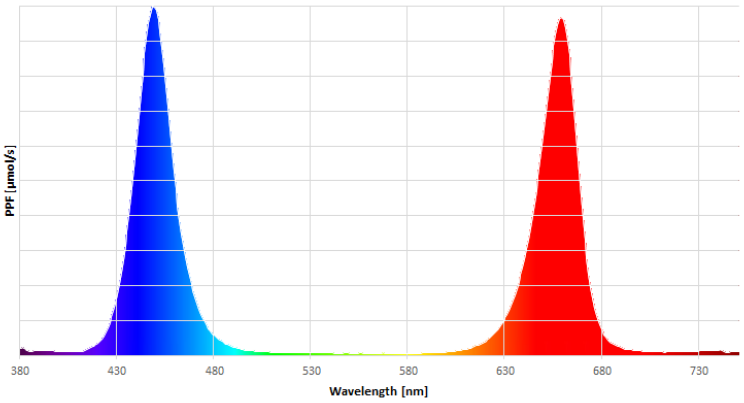


GrowEmity 2x2MX RRBB – K190

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm]	Radiant Power [mW]	PPF [µmol/s]	PPF/W [µmol/J]	Total PPF [µmol/s]	Total PPF/W [µmol/J]	Article Number
GrowEmity 2x2MX RRBB-K190	350	40,0	14,0	RED	657	3400	18,44	3,06	37,24	2,66	Q0-070070-RRBB-C1000-K190
				DEEP BLUE	455	5080	18,80	2,36			
	500	41,2	20,6	RED	657	4794	26,00	2,89	52,13	2,53	Q0-070070-RRBB-C1000-K190
				DEEP BLUE	455	7061	26,13	2,25			
	700	43,0	30,1	RED	657	6494	35,22	2,62	67,56	2,25	Q0-070070-RRBB-C1000-K190
				DEEP BLUE	455	8738	32,34	1,94			
	800	43,8	35,0	RED	657	7412	40,20	2,53	75,92	2,17	Q0-070070-RRBB-C1000-K190
				DEEP BLUE	455	9652	35,72	1,87			

Parameters were calculated for temperatures T_J= 25°C
Values of these parameters were calculated for default bin and with tolerances of 15%.

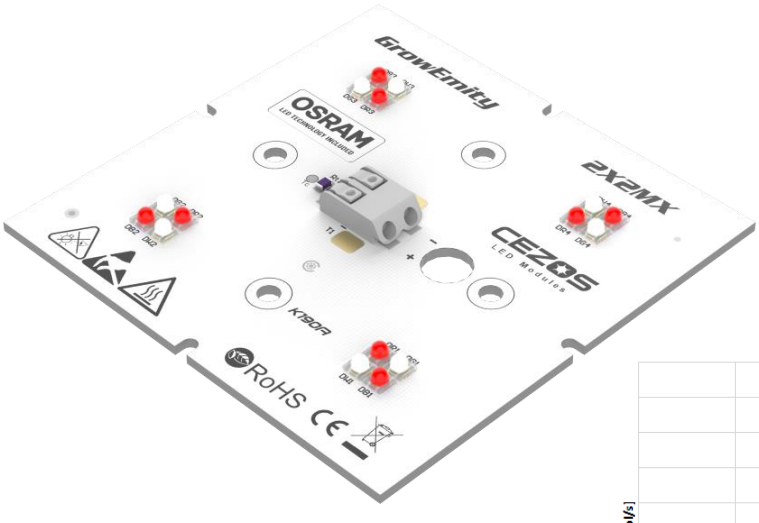


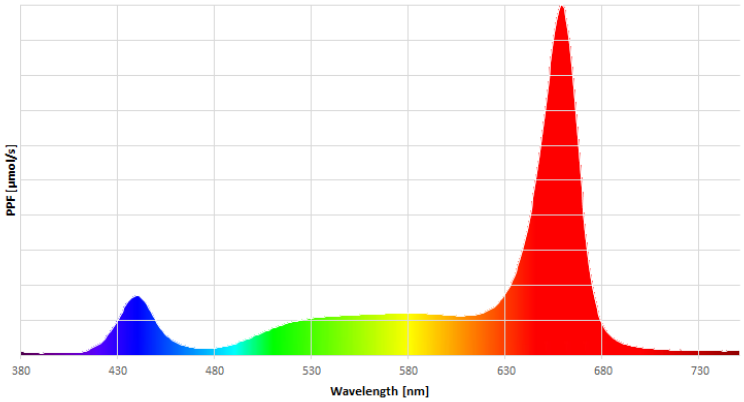


GrowEmity 2x2MX RRWW – K190

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm] / CCT [K]	Radiant Power [mW] / Luminous Flux [lm]	PPF [µmol/s]	PPF/W [µmol/J]	Total PPF [µmol/s]	Total PPF/W [µmol/J]	Article Number
GrowEmity 2x2MX RRWW-K190	350	39,2	13,7	RED	657	3400	18,44	3,06	34,12	2,49	Q0-070070-RRWW-C1000-K190
				WHITE	5000	1183	15,68	2,04			
	500	40,8	20,4	RED	657	4794	26,00	2,89	46,96	2,30	Q0-070070-RRWW-C1000-K190
				WHITE	5000	1621	20,96	1,84			
	700	42,8	30,0	RED	657	6494	35,22	2,62	62,42	2,08	Q0-070070-RRWW-C1000-K190
				WHITE	5000	2130	27,20	1,65			
	800	43,7	34,9	RED	657	7412	40,20	2,53	70,12	2,01	Q0-070070-RRWW-C1000-K190
				WHITE	5000	2343	29,92	1,57			

Parameters were calculated for temperatures T_J= 25°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%.

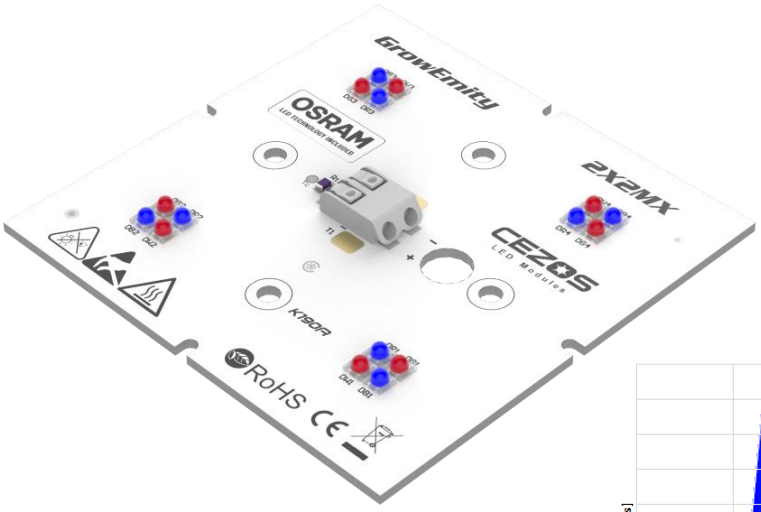


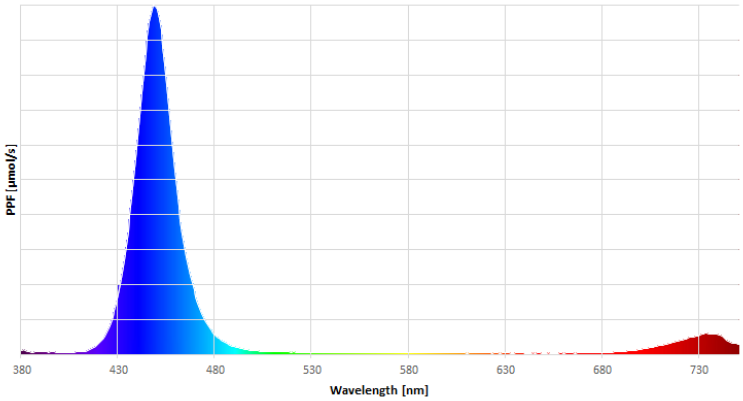


GrowEmity 2x2MX FFBB – K190

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm] / CCT [K]	Radiant Power [mW] / Luminous Flux [lm]	PPF [µmol/s]	PPF/W [µmol/J]	Total PPF [µmol/s]	Total PPF/W [µmol/J]	Article Number
GrowEmity 2x2MX FFBB-K190	350	37,6	13,2	FAR RED	727	2120	1,28	0,25	20,08	1,53	Q0-070070-FFBB-C1000-K190
				DEEP BLUE	455	5080	18,80	2,36			
	500	38,8	19,4	FAR RED	727	2989	1,80	0,23	27,94	1,44	Q0-070070-FFBB-C1000-K190
				DEEP BLUE	455	7061	26,13	2,25			
	700	40,3	28,2	FAR RED	727	4049	2,44	0,21	34,78	1,23	Q0-070070-FFBB-C1000-K190
				DEEP BLUE	455	8738	32,34	1,94			
	800	40,8	32,6	FAR RED	727	4622	2,79	0,21	38,51	1,18	Q0-070070-FFBB-C1000-K190
				DEEP BLUE	455	9652	35,72	1,87			

Parameters were calculated for temperatures T_J= 25°C
Values of these parameters were calculated for default bin and with tolerances of 15%.

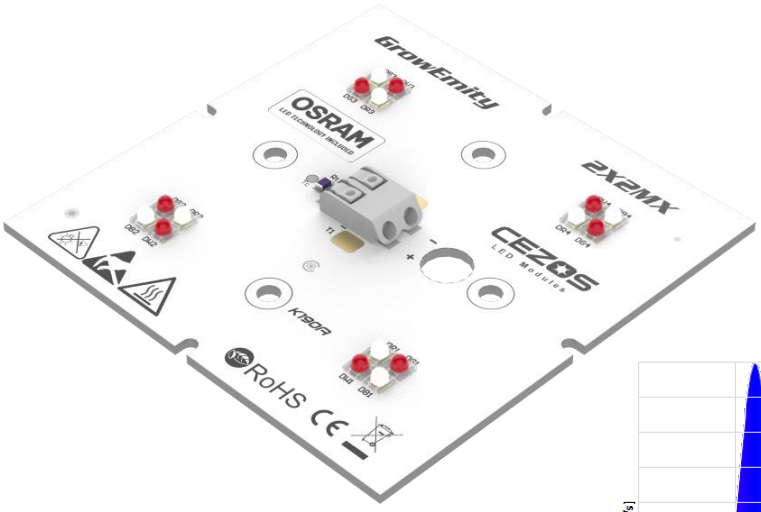


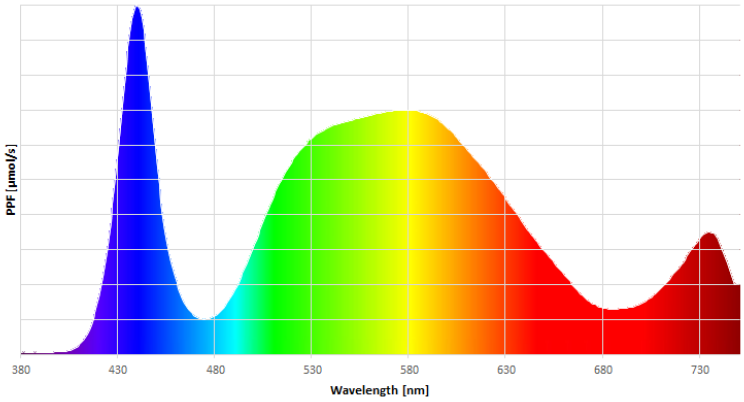


GrowEmity 2x2MX FFWW – K190

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm] / CCT [K]	Radiant Power [mW] / Luminous Flux [lm]	PPF [µmol/s]	PPF/W [µmol/J]	Total PPF [µmol/s]	Total PPF/W [µmol/J]	Article Number
GrowEmity 2x2MX FFWW-K190	350	36,8	12,9	FAR RED	727	2120	1,28	0,25	16,96	1,32	Q0-070070-FFWW-C1000-K190
				WHITE	5000	1183	15,68	2,04			
	500	38,4	19,2	FAR RED	727	2989	1,80	0,23	22,76	1,19	Q0-070070-FFWW-C1000-K190
				WHITE	5000	1621	20,96	1,84			
	700	40,2	28,1	FAR RED	727	4049	2,44	0,21	29,64	1,05	Q0-070070-FFWW-C1000-K190
				WHITE	5000	2130	27,20	1,65			
	800	40,7	32,6	FAR RED	727	4622	2,79	0,21	32,71	1,00	Q0-070070-FFWW-C1000-K190
				WHITE	5000	2343	29,92	1,57			

Parameters were calculated for temperatures T_J= 25°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%.

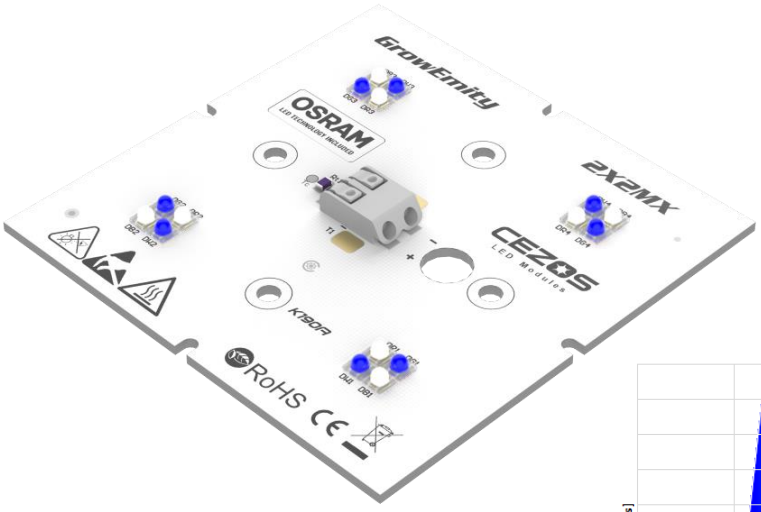


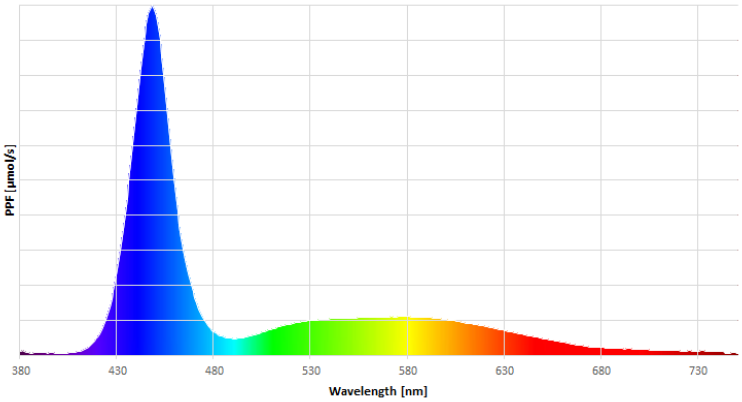


GrowEmity 2x2MX BBWW – K190

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm] / CCT [K]	Radiant Power [mW] / Luminous Flux [lm]	PPF [µmol/s]	PPF/W [µmol/J]	Total PPF [µmol/s]	Total PPF/W [µmol/J]	Article Number
GrowEmity 2x2MX BBWW-K190	350	44,8	15,7	DEEP BLUE	455	5080	18,80	2,36	34,48	2,20	Q0-070070-BBWW-C1000-K190
				WHITE	5000	1183	15,68	2,04			
	500	46,0	23,0	DEEP BLUE	455	7061	26,13	2,25	47,09	2,05	Q0-070070-BBWW-C1000-K190
				WHITE	5000	1621	20,96	1,84			
	700	47,4	33,2	DEEP BLUE	455	8738	32,34	1,94	59,54	1,80	Q0-070070-BBWW-C1000-K190
				WHITE	5000	2130	27,20	1,65			
	800	47,8	38,2	DEEP BLUE	455	9652	35,72	1,87	65,64	1,72	Q0-070070-BBWW-C1000-K190
				WHITE	5000	2343	29,92	1,57			

Parameters were calculated for temperatures T_J= 25°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%.

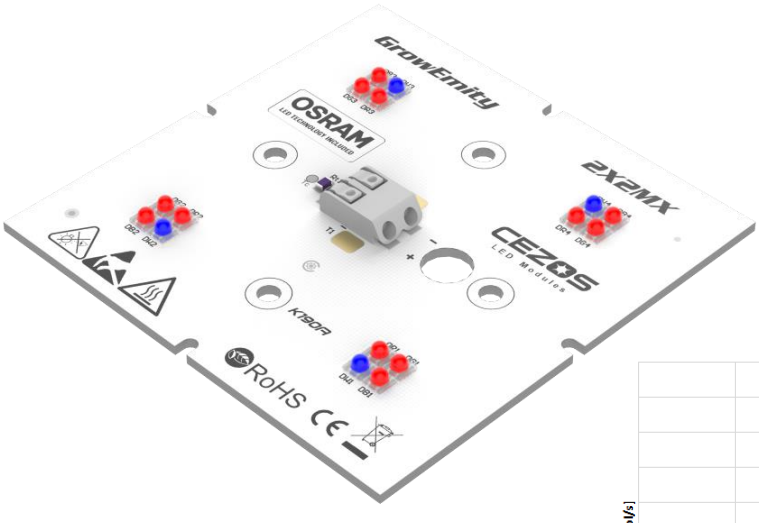


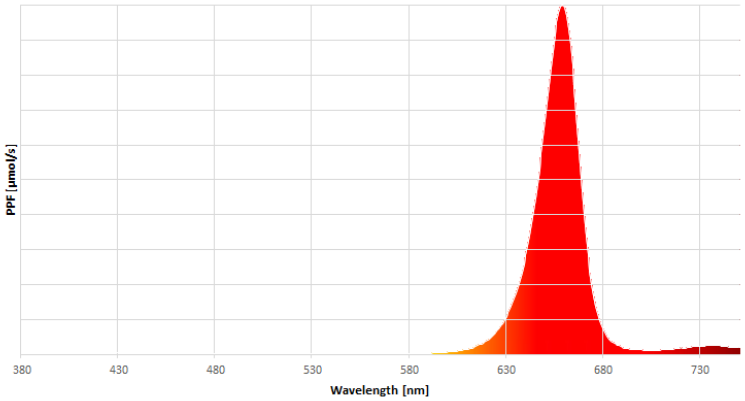


GrowEmity 2x2MX RRRF – K190

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm]	Radiant Power [mW]	PPF [µmol/s]	PPF/W [µmol/J]	Total PPF [µmol/s]	Total PPF/W [µmol/J]	Article Number
GrowEmity 2x2MX RRRF-K190	350	33,2	11,6	RED	657	5100	27,66	3,06	28,30	2,44	Q0-070070-RRRF-C1000-K190
				FAR RED	727	1060	0,64	0,25			
	500	34,8	17,4	RED	657	7191	39,00	2,89	39,90	2,29	Q0-070070-RRRF-C1000-K190
				FAR RED	727	1495	0,90	0,23			
	700	37,1	26,0	RED	657	9741	52,83	2,62	54,05	2,08	Q0-070070-RRRF-C1000-K190
				FAR RED	727	2025	1,22	0,21			
	800	38,2	30,6	RED	657	11118	60,30	2,53	61,69	2,02	Q0-070070-RRRF-C1000-K190
				FAR RED	727	2311	1,40	0,21			

Parameters were calculated for temperatures T_J= 25°C
Values of these parameters were calculated for default bin and with tolerances of 15%.

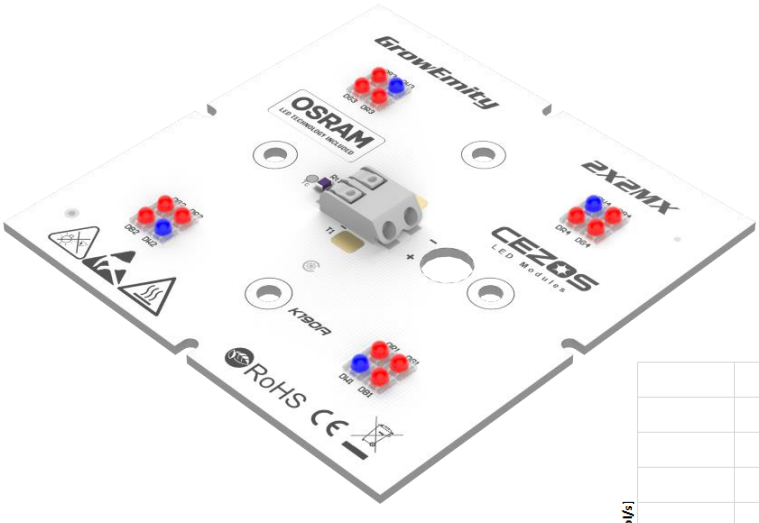


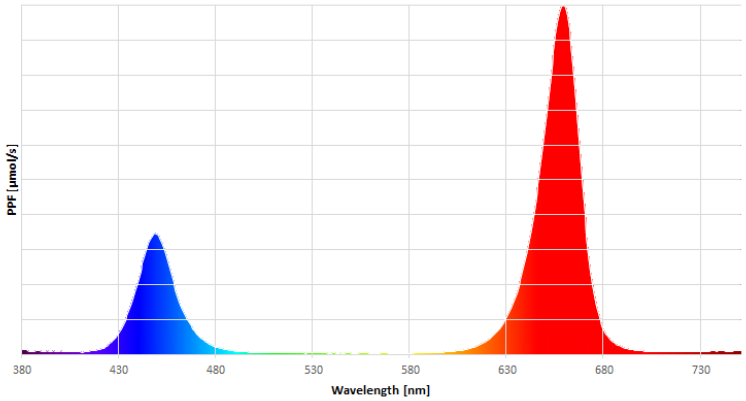


GrowEmity 2x2MX RRRB – K190

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm]	Radiant Power [mW]	PPF [µmol/s]	PPF/W [µmol/J]	Total PPF [µmol/s]	Total PPF/W [µmol/J]	Article Number
GrowEmity 2x2MX RRRB-K190	350	37,2	13,0	RED	657	5100	27,66	3,06	37,06	2,85	Q0-070070-RRRB-C1000-K190
				DEEP BLUE	455	2540	9,40	2,36			
	500	38,6	19,3	RED	657	7191	39,00	2,89	52,07	2,70	Q0-070070-RRRB-C1000-K190
				DEEP BLUE	455	3531	13,07	2,25			
	700	40,7	28,5	RED	657	9741	52,83	2,62	69,00	2,42	Q0-070070-RRRB-C1000-K190
				DEEP BLUE	455	4369	16,17	1,94			
	800	41,7	33,4	RED	657	11118	60,30	2,53	78,16	2,34	Q0-070070-RRRB-C1000-K190
				DEEP BLUE	455	4826	17,86	1,87			

Parameters were calculated for temperatures T_J= 25°C
Values of these parameters were calculated for default bin and with tolerances of 15%.

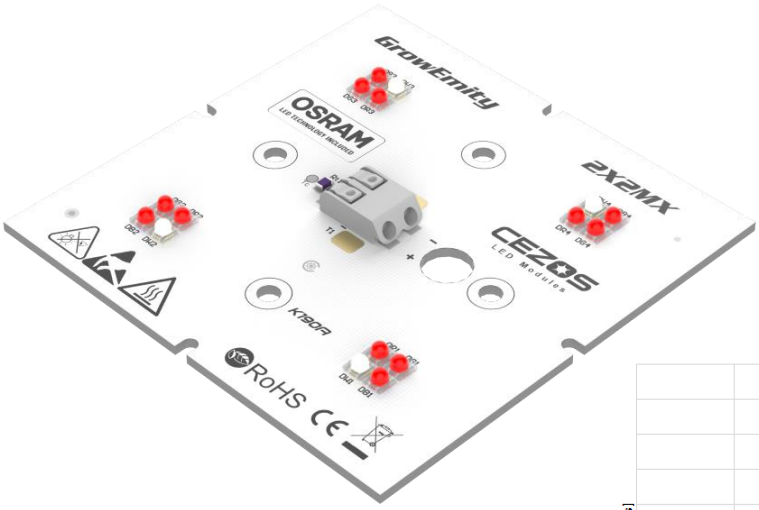


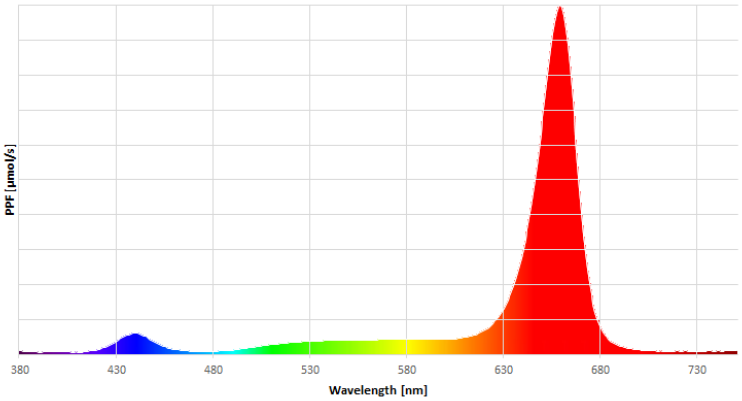


GrowEmity 2x2MX RRRW – K190

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm] / CCT [K]	Radiant Power [mW] / Luminous Flux [lm]	PPF [µmol/s]	PPF/W [µmol/J]	Total PPF [µmol/s]	Total PPF/W [µmol/J]	Article Number
GrowEmity 2x2MX RRRW-K190	350	36,8	12,9	RED	657	5100	27,66	3,06	35,50	2,76	Q0-070070-RRRW-C1000-K190
				WHITE	5000	592	7,84	2,04			
	500	38,4	19,2	RED	657	7191	39,00	2,89	49,48	2,58	Q0-070070-RRRW-C1000-K190
				WHITE	5000	810	10,48	1,84			
	700	40,6	28,4	RED	657	9741	52,83	2,62	66,43	2,34	Q0-070070-RRRW-C1000-K190
				WHITE	5000	1065	13,60	1,65			
	800	41,7	33,3	RED	657	11118	60,30	2,53	75,26	2,26	Q0-070070-RRRW-C1000-K190
				WHITE	5000	1171	14,96	1,57			

Parameters were calculated for temperatures T_J= 25°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%.

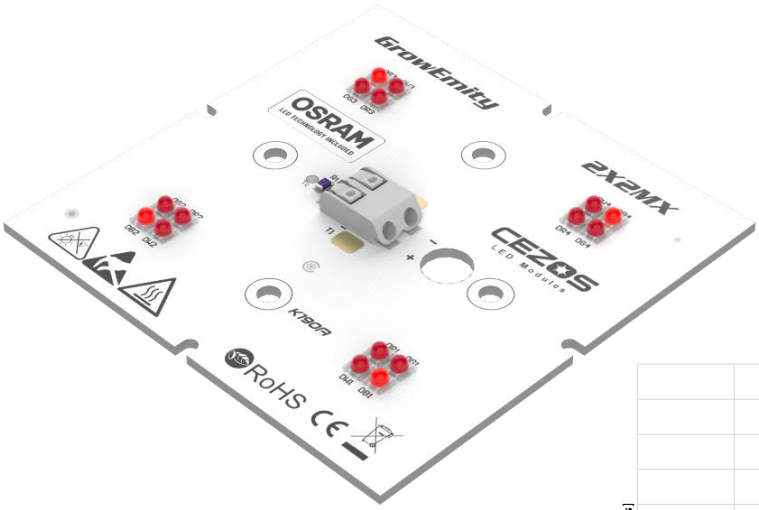


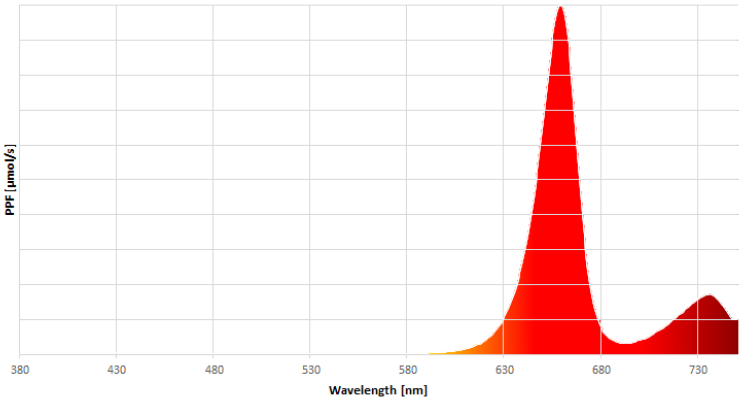


GrowEmity 2x2MX RFFF – K190

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm]	Radiant Power [mW]	PPF [µmol/s]	PPF/W [µmol/J]	Total PPF [µmol/s]	Total PPF/W [µmol/J]	Article Number
GrowEmity 2x2MX RFFF-K190	350	30,8	10,8	RED	657	1700	9,22	3,06	11,14	1,03	Q0-070070-RFFF-C1000-K190
				FAR RED	727	3180	1,92	0,25			
	500	32,4	16,2	RED	657	2397	13,00	2,89	15,71	0,97	Q0-070070-RFFF-C1000-K190
				FAR RED	727	4484	2,71	0,23			
	700	34,4	24,1	RED	657	3247	17,61	2,62	21,28	0,88	Q0-070070-RFFF-C1000-K190
				FAR RED	727	6074	3,67	0,21			
	800	35,2	28,2	RED	657	3706	20,10	2,53	24,29	0,86	Q0-070070-RFFF-C1000-K190
				FAR RED	727	6932	4,19	0,21			

Parameters were calculated for temperatures T_J= 25°C
Values of these parameters were calculated for default bin and with tolerances of 15%.

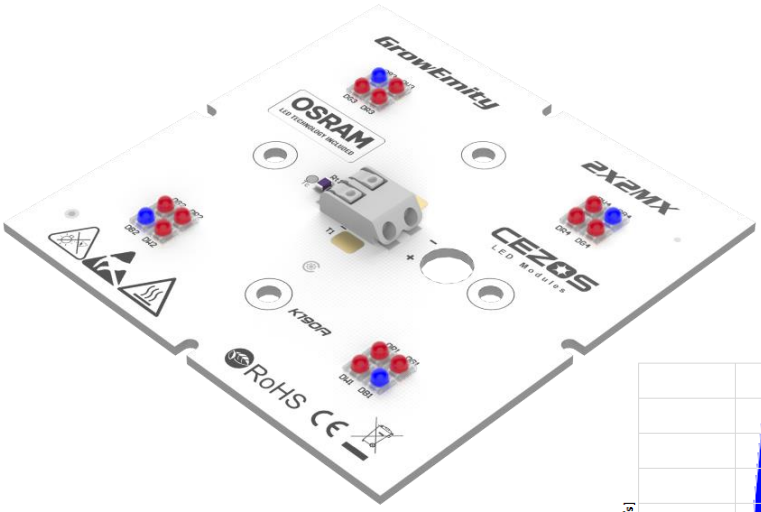


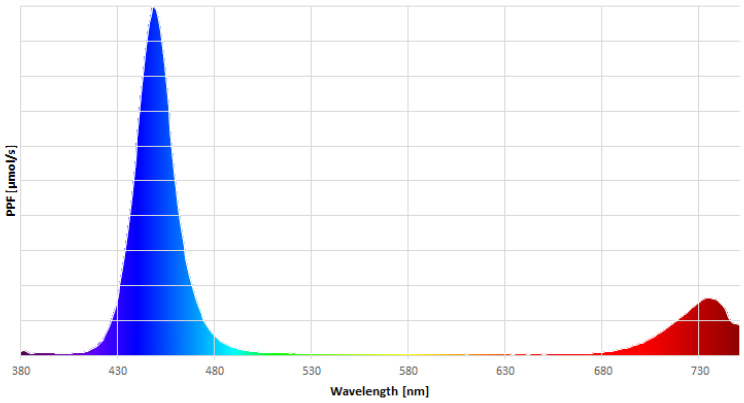


GrowEmity 2x2MX FFFB – K190

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm]	Radiant Power [mW]	PPF [µmol/s]	PPF/W [µmol/J]	Total PPF [µmol/s]	Total PPF/W [µmol/J]	Article Number
GrowEmity 2x2MX FFFB-K190	350	33,6	11,8	FAR RED	727	3180	1,92	0,25	11,32	0,96	Q0-070070-FFFB-C1000-K190
				DEEP BLUE	455	2540	9,40	2,36			
	500	35,0	17,5	FAR RED	727	4484	2,71	0,23	15,77	0,90	Q0-070070-FFFB-C1000-K190
				DEEP BLUE	455	3531	13,07	2,25			
	700	36,7	25,7	FAR RED	727	6074	3,67	0,21	19,84	0,77	Q0-070070-FFFB-C1000-K190
				DEEP BLUE	455	4369	16,17	1,94			
	800	37,3	29,8	FAR RED	727	6932	4,19	0,21	22,05	0,74	Q0-070070-FFFB-C1000-K190
				DEEP BLUE	455	4826	17,86	1,87			

Parameters were calculated for temperatures T_J= 25°C
Values of these parameters were calculated for default bin and with tolerances of 15%.

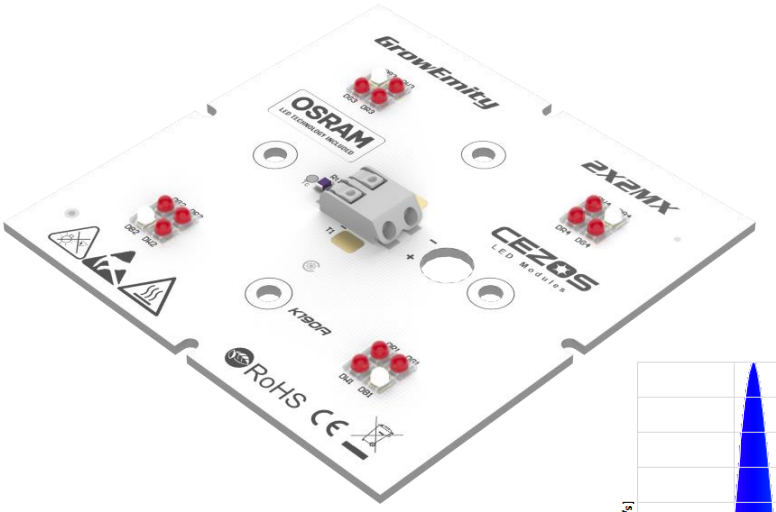


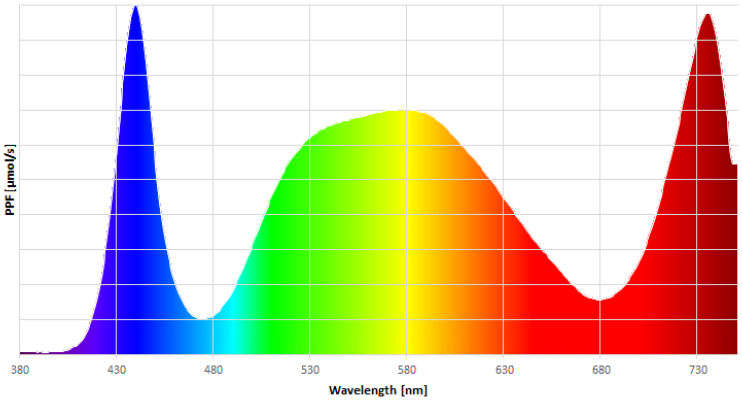


GrowEmity 2x2MX FFFW – K190

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm] / CCT [K]	Radiant Power [mW] / Luminous Flux [lm]	PPF [µmol/s]	PPF/W [µmol/J]	Total PPF [µmol/s]	Total PPF/W [µmol/J]	Article Number
GrowEmity 2x2MX FFFW-K190	350	33,2	11,6	FAR RED	727	3180	1,92	0,25	9,76	0,84	Q0-070070-FFFW-C1000-K190
				WHITE	5000	592	7,84	2,04			
	500	34,8	17,4	FAR RED	727	4484	2,71	0,23	13,19	0,76	Q0-070070-FFFW-C1000-K190
				WHITE	5000	810	10,48	1,84			
	700	36,6	25,6	FAR RED	727	6074	3,67	0,21	17,27	0,67	Q0-070070-FFFW-C1000-K190
				WHITE	5000	1065	13,60	1,65			
	800	37,2	29,8	FAR RED	727	6932	4,19	0,21	19,15	0,64	Q0-070070-FFFW-C1000-K190
				WHITE	5000	1171	14,96	1,57			

Parameters were calculated for temperatures T_J= 25°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%.

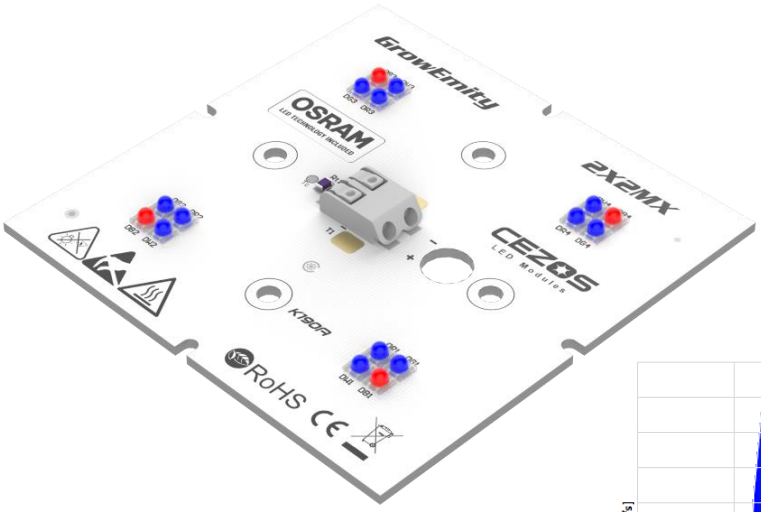


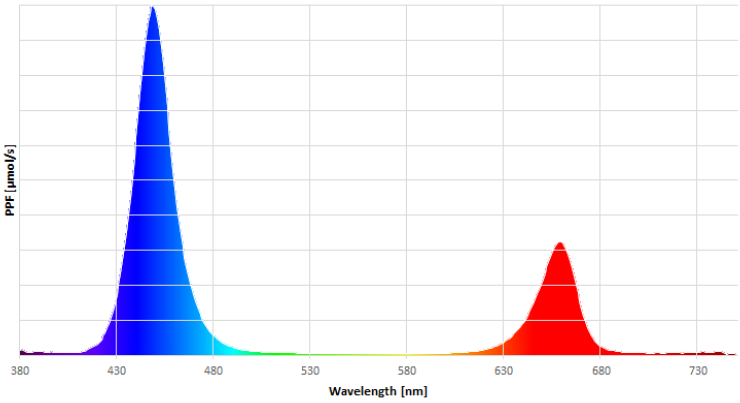


GrowEmity 2x2MX RBBB – K190

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm]	Radiant Power [mW]	PPF [µmol/s]	PPF/W [µmol/J]	Total PPF [µmol/s]	Total PPF/W [µmol/J]	Article Number
GrowEmity 2x2MX RBBB-K190	350	42,8	15,0	RED	657	1700	9,22	3,06	37,42	2,50	Q0-070070-RBBB-C1000-K190
				DEEP BLUE	455	7620	28,20	2,36			
	500	43,8	21,9	RED	657	2397	13,00	2,89	52,20	2,38	Q0-070070-RBBB-C1000-K190
				DEEP BLUE	455	10592	39,20	2,25			
	700	45,2	31,7	RED	657	3247	17,61	2,62	66,11	2,09	Q0-070070-RBBB-C1000-K190
				DEEP BLUE	455	13106	48,50	1,94			
	800	45,8	36,6	RED	657	3706	20,10	2,53	73,68	2,01	Q0-070070-RBBB-C1000-K190
				DEEP BLUE	455	14478	53,58	1,87			

Parameters were calculated for temperatures T_J= 25°C
Values of these parameters were calculated for default bin and with tolerances of 15%.

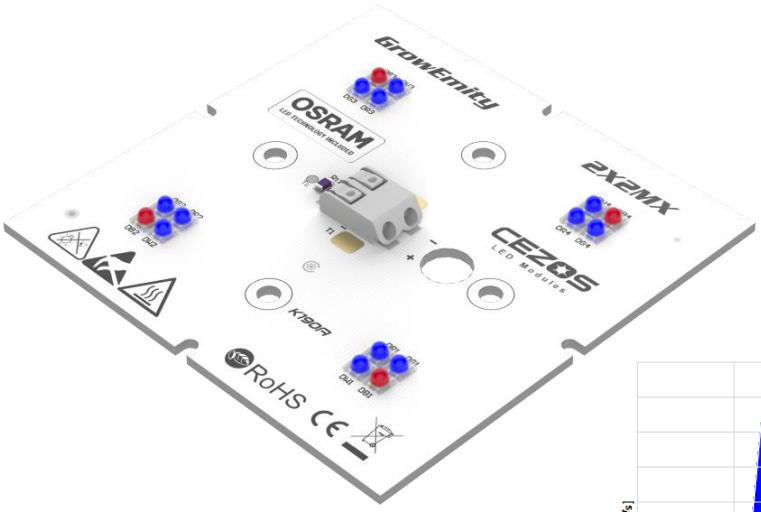


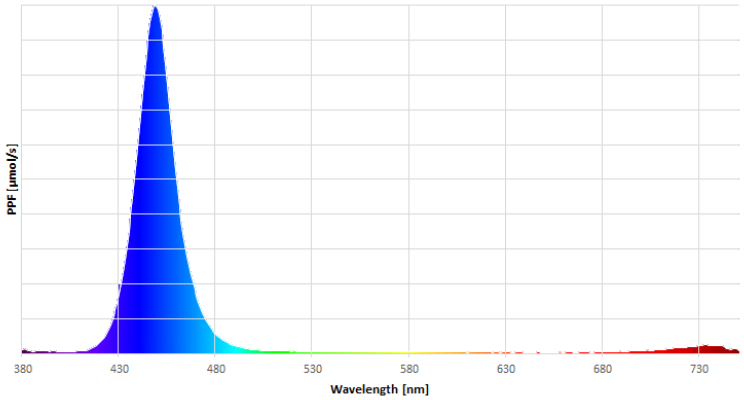


GrowEmity 2x2MX FBBB – K190

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm] / CCT [K]	Radiant Power [mW] / Luminous Flux [lm]	PPF [µmol/s]	PPF/W [µmol/J]	Total PPF [µmol/s]	Total PPF/W [µmol/J]	Article Number
GrowEmity 2x2MX FBBB-K190	350	41,6	14,6	FAR RED	727	1060	0,64	0,25	28,84	1,98	Q0-070070-FBBB-C1000-K190
				DEEP BLUE	455	7620	28,20	2,36			
	500	42,6	21,3	FAR RED	727	1495	0,90	0,23	40,10	1,88	Q0-070070-FBBB-C1000-K190
				DEEP BLUE	455	10592	39,20	2,25			
	700	43,9	30,7	FAR RED	727	2025	1,22	0,21	49,73	1,62	Q0-070070-FBBB-C1000-K190
				DEEP BLUE	455	13106	48,50	1,94			
	800	44,3	35,5	FAR RED	727	2311	1,40	0,21	54,98	1,55	Q0-070070-FBBB-C1000-K190
				DEEP BLUE	455	14478	53,58	1,87			

Parameters were calculated for temperatures T_J= 25°C
Values of these parameters were calculated for default bin and with tolerances of 15%.

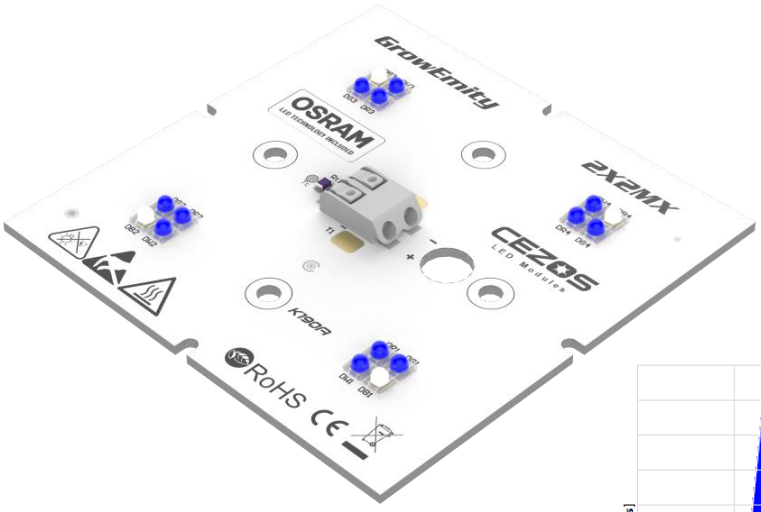


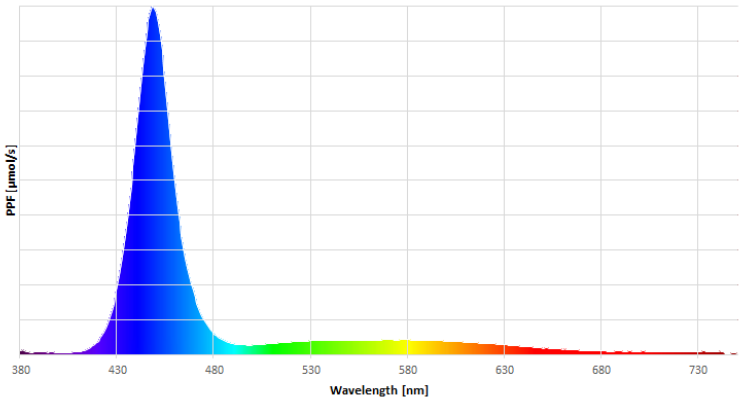


GrowEmity 2x2MX BBBW – K190

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm] / CCT [K]	Radiant Power [mW] / Luminous Flux [lm]	PPF [µmol/s]	PPF/W [µmol/J]	Total PPF [µmol/s]	Total PPF/W [µmol/J]	Article Number
GrowEmity 2x2MX BBBW-K190	350	45,2	15,8	DEEP BLUE	455	7620	28,20	2,36	36,04	2,28	Q0-070070-BBBW-C1000-K190
				WHITE	5000	592	7,84	2,04			
	500	46,2	23,1	DEEP BLUE	455	10592	39,20	2,25	49,68	2,15	Q0-070070-BBBW-C1000-K190
				WHITE	5000	810	10,48	1,84			
	700	47,4	33,2	DEEP BLUE	455	13106	48,50	1,94	62,10	1,87	Q0-070070-BBBW-C1000-K190
				WHITE	5000	1065	13,60	1,65			
	800	47,8	38,2	DEEP BLUE	455	14478	53,58	1,87	68,54	1,79	Q0-070070-BBBW-C1000-K190
				WHITE	5000	1171	14,96	1,57			

Parameters were calculated for temperatures T_J= 25°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%.

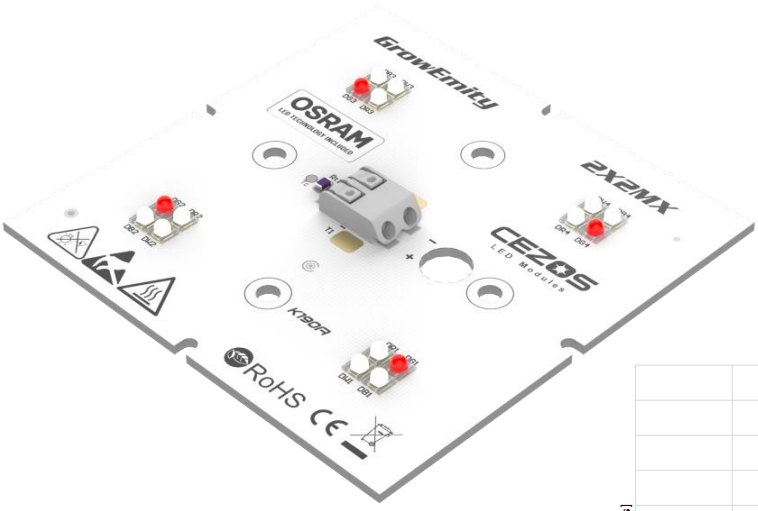


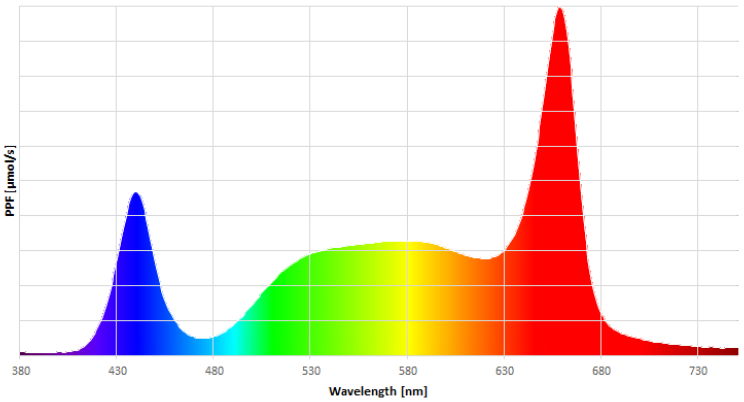


GrowEmity 2x2MX RWWW – K190

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm] / CCT [K]	Radiant Power [mW] / Luminous Flux [lm]	PPF [µmol/s]	PPF/W [µmol/J]	Total PPF [µmol/s]	Total PPF/W [µmol/J]	Article Number
GrowEmity 2x2MX RWWW-K190	350	41,6	14,6	RED	657	1700	9,22	3,06	32,74	2,25	Q0-070070-RWWW-C1000-K190
				WHITE	5000	1775	23,52	2,04			
	500	43,2	21,6	RED	657	2397	13,00	2,89	44,44	2,06	Q0-070070-RWWW-C1000-K190
				WHITE	5000	2431	31,44	1,84			
	700	45,0	31,5	RED	657	3247	17,61	2,62	58,41	1,85	Q0-070070-RWWW-C1000-K190
				WHITE	5000	3195	40,80	1,65			
	800	45,7	36,5	RED	657	3706	20,10	2,53	64,98	1,78	Q0-070070-RWWW-C1000-K190
				WHITE	5000	3514	44,88	1,57			

Parameters were calculated for temperatures T_J= 25°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%.

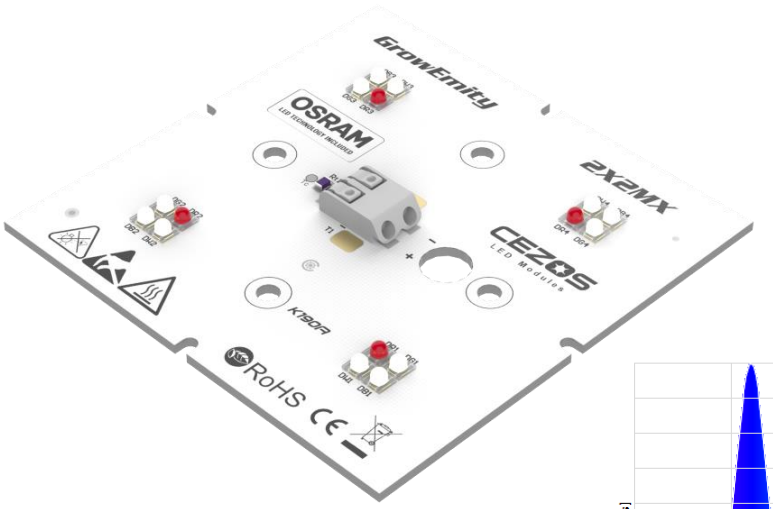


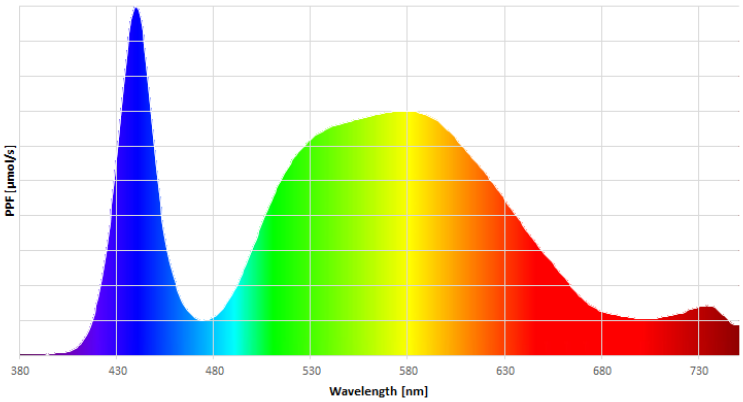


GrowEmity 2x2MX FWWW – K190

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm] / CCT [K]	Radiant Power [mW] / Luminous Flux [lm]	PPF [µmol/s]	PPF/W [µmol/J]	Total PPF [µmol/s]	Total PPF/W [µmol/J]	Article Number
GrowEmity 2x2MX FWWW-K190	350	40,4	14,1	FAR RED	727	1060	0,64	0,25	24,16	1,71	Q0-070070-FWWW-C1000-K190
				WHITE	5000	1775	23,52	2,04			
	500	42,0	21,0	FAR RED	727	1495	0,90	0,23	32,34	1,54	Q0-070070-FWWW-C1000-K190
				WHITE	5000	2431	31,44	1,84			
	700	43,7	30,6	FAR RED	727	2025	1,22	0,21	42,02	1,37	Q0-070070-FWWW-C1000-K190
				WHITE	5000	3195	40,80	1,65			
	800	44,2	35,4	FAR RED	727	2311	1,40	0,21	46,28	1,31	Q0-070070-FWWW-C1000-K190
				WHITE	5000	3514	44,88	1,57			

Parameters were calculated for temperatures T_J= 25°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%.

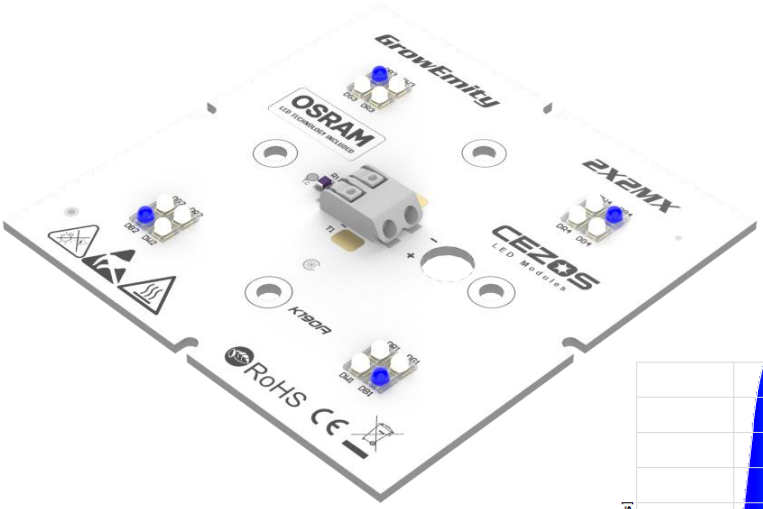


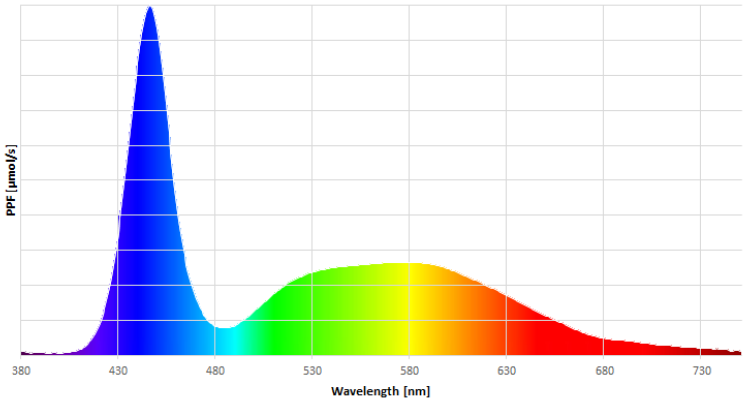


GrowEmity 2x2MX BWWW – K190

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm] / CCT [K]	Radiant Power [mW] / Luminous Flux [lm]	PPF [µmol/s]	PPF/W [µmol/J]	Total PPF [µmol/s]	Total PPF/W [µmol/J]	Article Number
GrowEmity 2x2MX BWWW-K190	350	44,4	15,5	DEEP BLUE	455	2540	9,40	2,36	32,92	2,12	Q0-070070-BWWW-C1000-K190
				WHITE	5000	1775	23,52	2,04			
	500	45,8	22,9	DEEP BLUE	455	3531	13,07	2,25	44,51	1,94	Q0-070070-BWWW-C1000-K190
				WHITE	5000	2431	31,44	1,84			
	700	47,3	33,1	DEEP BLUE	455	4369	16,17	1,94	56,97	1,72	Q0-070070-BWWW-C1000-K190
				WHITE	5000	3195	40,80	1,65			
	800	47,7	38,2	DEEP BLUE	455	4826	17,86	1,87	62,74	1,64	Q0-070070-BWWW-C1000-K190
				WHITE	5000	3514	44,88	1,57			

Parameters were calculated for temperatures T_J= 25°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%.

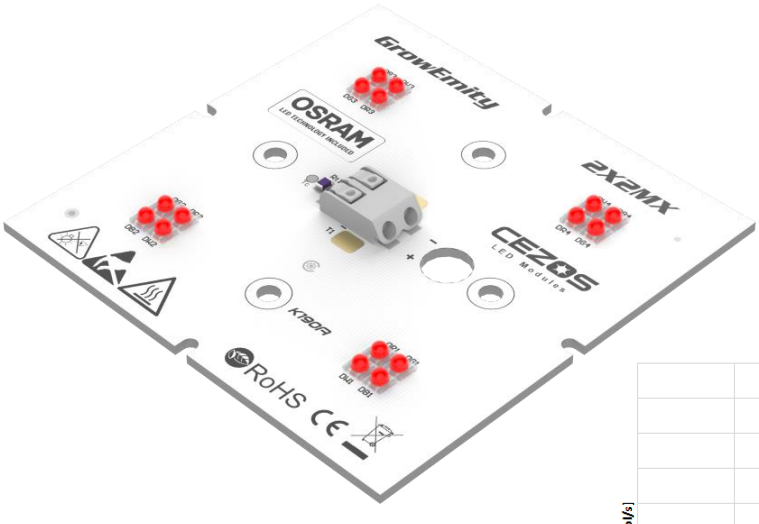


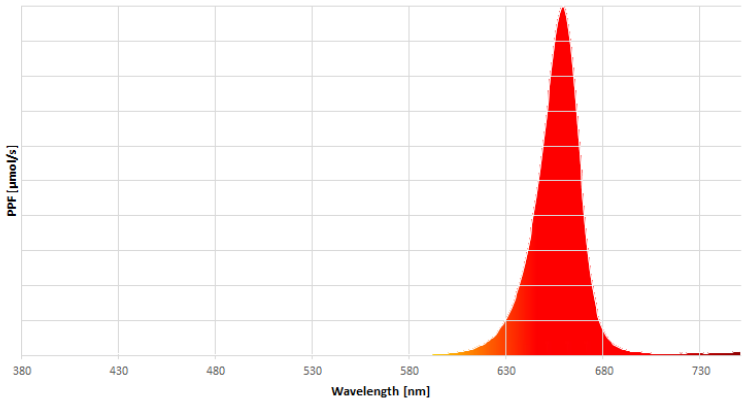


GrowEmity 2x2MX RRRR – K190

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm]	Radiant Power [mW]	PPF [µmol/s]	PPF/W [µmol/J]	Article Number
GrowEmity 2x2MX RRRR-K190	350	34,4	12,0	RED	657	6800	36,88	3,06	Q0-070070-RRRR-C1000-K190
	500	36,0	18,0	RED	657	9588	52,00	2,89	Q0-070070-RRRR-C1000-K190
	700	38,4	26,9	RED	657	12988	70,44	2,62	Q0-070070-RRRR-C1000-K190
	800	39,7	31,7	RED	657	14824	80,4	2,53	Q0-070070-RRRR-C1000-K190

Parameters were calculated for temperatures T_J= 25°C
Values of these parameters were calculated for default bin and with tolerances of 15%.

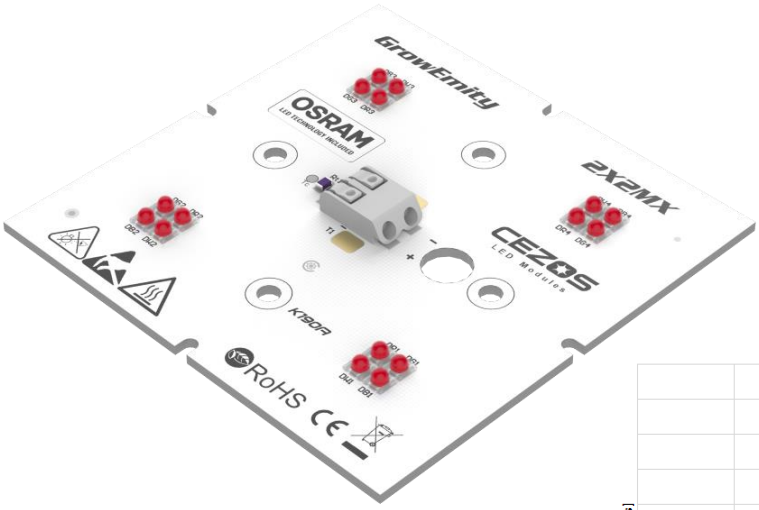


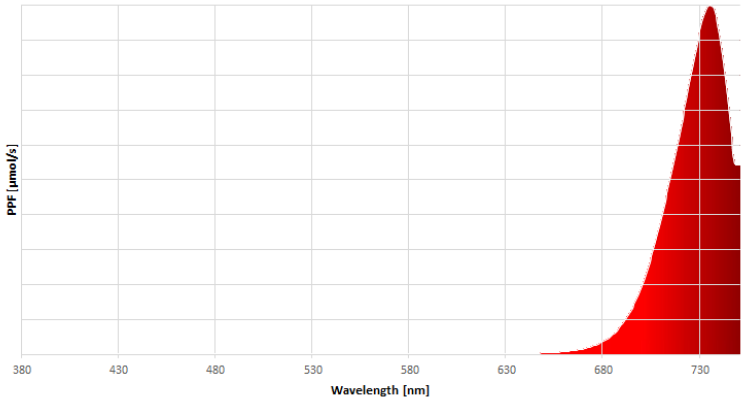


GrowEmity 2x2MX FFFF- K190

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm]	Radiant Power [mW]	PPF [µmol/s]	PPF/W [µmol/J]	Article Number
GrowEmity 2x2MX FFFF-K190	350	29,6	10,4	FAR RED	727	4240	2,56	0,25	Q0-070070-FFFF-C1000-K190
	500	31,2	15,6	FAR RED	727	5978	3,61	0,23	Q0-070070-FFFF-C1000-K190
	700	33,1	23,2	FAR RED	727	8098	4,89	0,21	Q0-070070-FFFF-C1000-K190
	800	33,8	27	FAR RED	727	9243	5,58	0,21	Q0-070070-FFFF-C1000-K190

Parameters were calculated for temperatures T_J= 25°C
Values of these parameters were calculated for default bin and with tolerances of 15%.

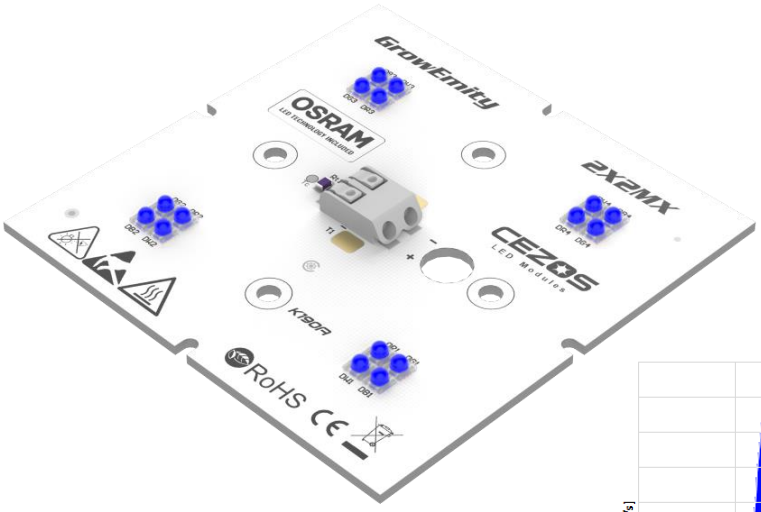


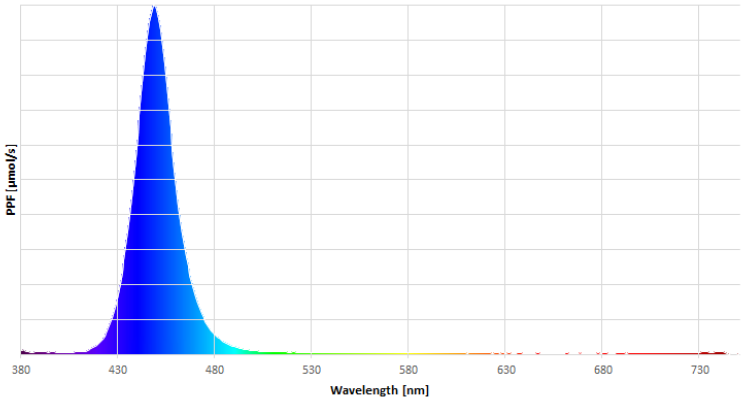


GrowEmity 2x2MX BBBB – K190

	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	λ [nm]	Radiant Power [mW]	PPF [µmol/s]	PPF/W [µmol/J]	Article Number
GrowEmity 2x2MX BBBB-K190	350	45,6	16,0	DEEP BLUE	455	10160	37,60	2,36	Q0-070070-BBBB-C1000-K190
	500	46,4	23,2	DEEP BLUE	455	14122	52,26	2,25	Q0-070070-BBBB-C1000-K190
	700	47,5	33,3	DEEP BLUE	455	17475	64,67	1,94	Q0-070070-BBBB-C1000-K190
	800	47,8	38,3	DEEP BLUE	455	19304	71,44	1,87	Q0-070070-BBBB-C1000-K190

Parameters were calculated for temperatures T_J= 25°C
Values of these parameters were calculated for default bin and with tolerances of 15%.

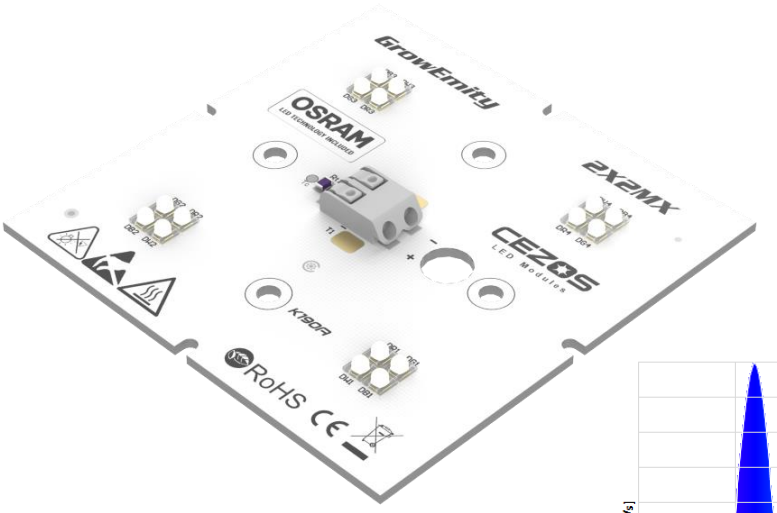


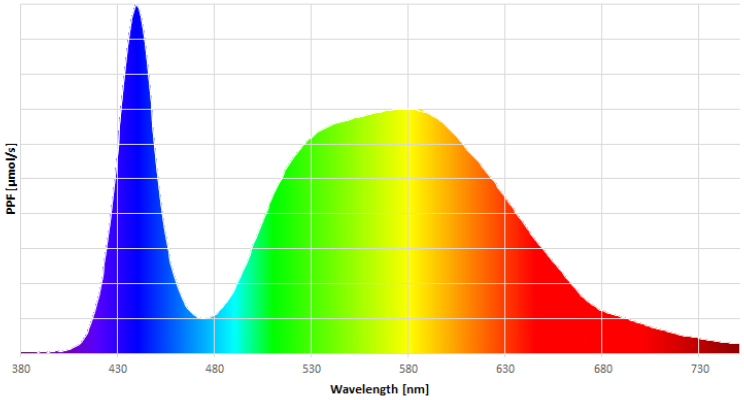


GrowEmity 2x2MX MONO – K190

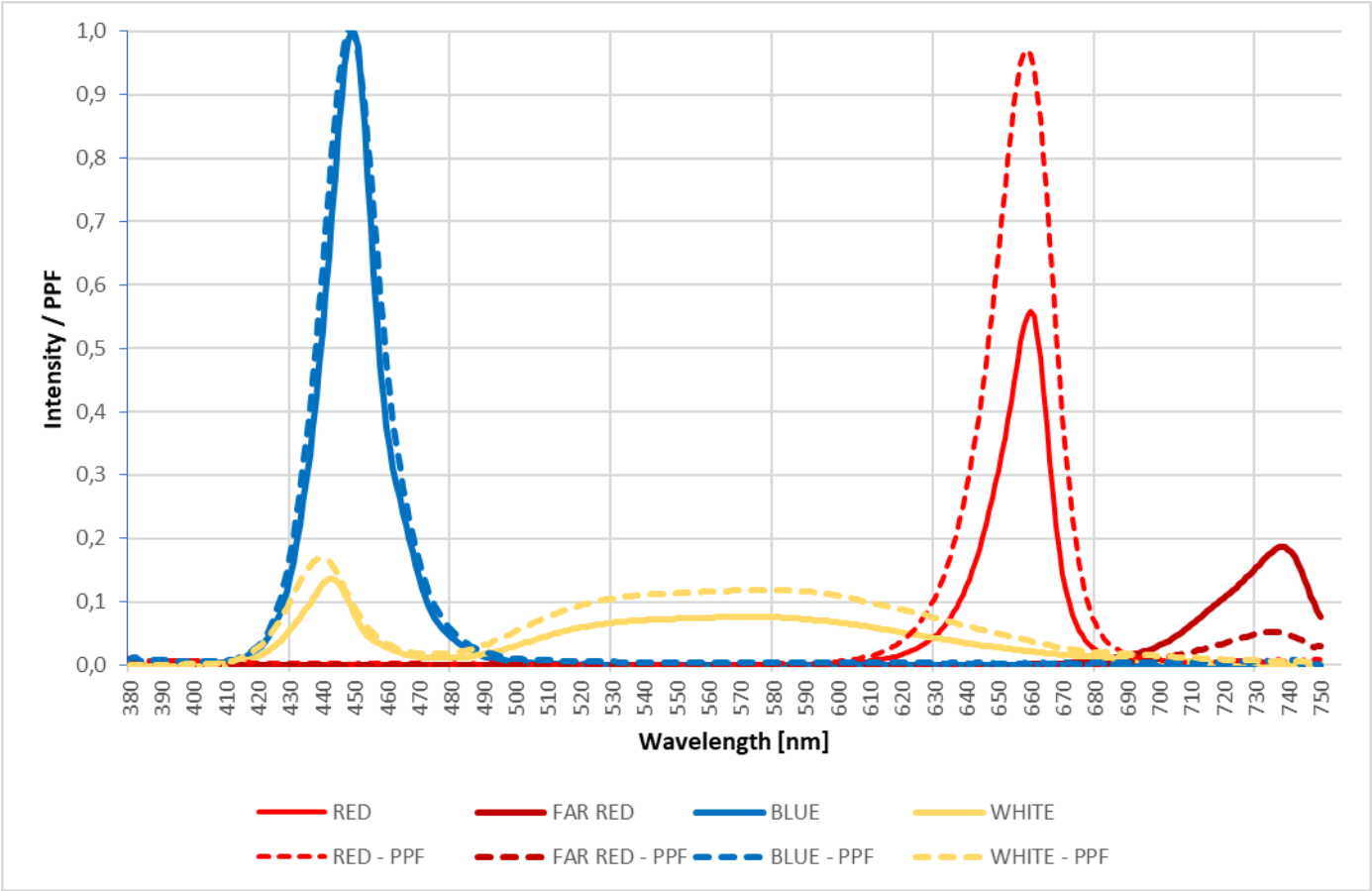
	Input Current [mA]	Forward Voltage [V]	Power [W]	Colour	CCT [K]	Luminous Flux [lm]	PPF [µmol/s]	PPF/W [µmol/J]	Article Number
GrowEmity 2x2 MX MONO-K190	350	44,0	15,4	WHITE	5000	2366	31,36	2,04	Q0-070070-MONO-C1300-K190
	500	45,6	22,8	WHITE	5000	3242	41,92	1,84	Q0-070070-MONO-C1300-K190
	700	47,2	33,0	WHITE	5000	4260	54,40	1,65	Q0-070070-MONO-C1300-K190
	800	47,7	38,1	WHITE	5000	4685	59,84	1,57	Q0-070070-MONO-C1300-K190

Parameters were calculated for temperatures T_J= 25°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.

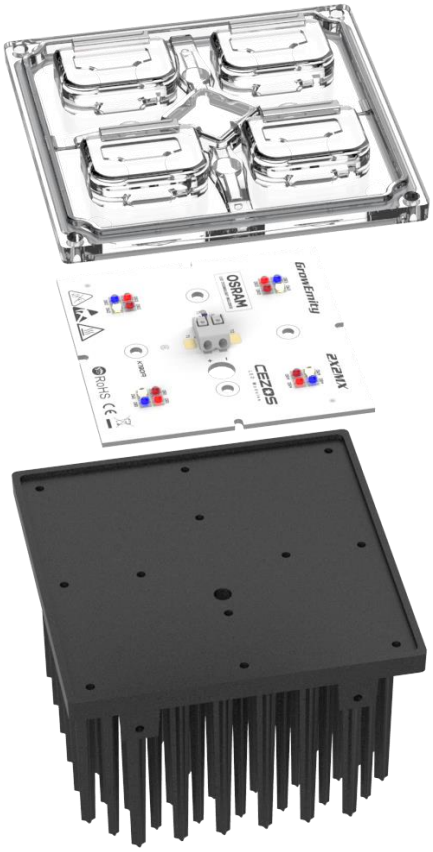
GrowEmity modules can be ordered as ready unit with heat-sink and optic. Couple of units can be mounted together, to create the GrowEmity light source with the same or different type of LEDs configuration. It ensures better efficiency and flexibility of GrowEmity lighting system. For the GrowEmity 2x2MX – K190 are recommended:

- **Compatible Heat-Sink:**

  COOLBLOCK ® SQ-01-2x2MX MechaTronix

- **Compatible Optic:**

  CS14632_STRADA-2X2MX-DWC
  CS14764_STRADA-2X2MX-VSM
  CS14841_STRADA-2X2MX-SCL
  CS15389_STRADA-2X2MX-T2-S
  CS14713_HB-2X2MX-W
  CS14840_HB-2X2MX-M
  FN14825_STRADA-2X2MXS-DWC2



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.

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.

CONTACT

CEZOS

81-534 Gdynia POLAND,

Olgierda 88/b

tel. +48 58 664 88 61

cezos@cezos.com

www.cezos.com

Subject to errors and technical changes.