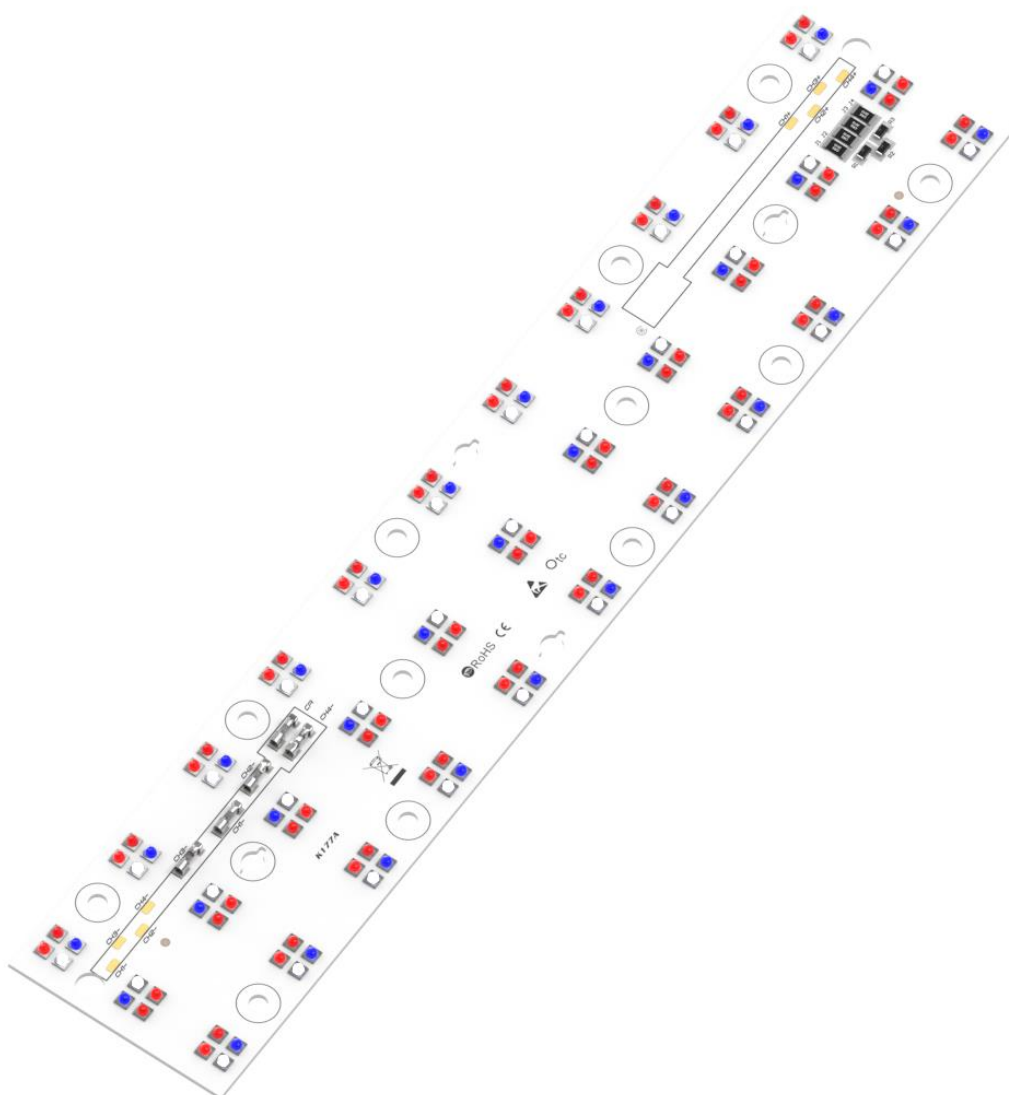


CEZOS

GrowEmity 3x11 - K177



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 – K177 |
| Size | 278x53 mm |
| Power Supply Type | Constant Current (CC) |
| Number Of Channels | 4 |
| 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 - K177

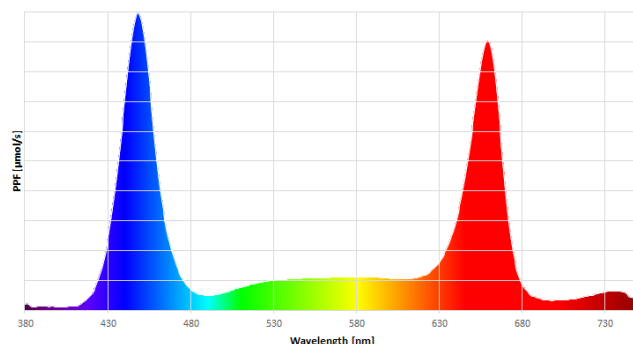
| | Input Current [mA] | Forward Voltage [V] | Power [W] | Total Power [W] | Colour | λ [nm] / CCT [K] | Radiant Power [mW] / Luminous Flux [lm] | PPF [$\mu\text{mol/s}$] | PPF/W [$\mu\text{mol/J}$] | Total PPF [$\mu\text{mol/s}$] | Total PPF/W [$\mu\text{mol/J}$] | Article Number |
|----------------------------|--------------------|---------------------|-----------|-----------------|-----------|--------------------------|---|---------------------------|-----------------------------|---------------------------------|-----------------------------------|---------------------------|
| GrowEmity 3x11 RFBW - K177 | 350 | 71,0 | 24,8 | 110,9 | RED | 657 | 14025 | 76,07 | 3,06 | 223,58 | 2,02 | LO-278053-RFBW-C1000-K177 |
| | | 61,1 | 21,4 | | FAR RED | 727 | 8745 | 5,28 | 0,25 | | | |
| | | 94,1 | 32,9 | | DEEP BLUE | 455 | 20955 | 77,55 | 2,36 | | | |
| | | 90,8 | 31,8 | | WHITE | 5000 | 4881 | 64,68 | 2,04 | | | |
| | 500 | 74,3 | 37,1 | 164,2 | RED | 657 | 19775 | 107,25 | 2,89 | 308,95 | 1,88 | LO-278053-RFBW-C1000-K177 |
| | | 64,4 | 32,2 | | FAR RED | 727 | 12330 | 7,44 | 0,23 | | | |
| | | 95,7 | 47,9 | | DEEP BLUE | 455 | 29127 | 107,79 | 2,25 | | | |
| | | 94,1 | 47,0 | | WHITE | 5000 | 6687 | 86,46 | 1,84 | | | |
| | 700 | 79,2 | 55,4 | 240,0 | RED | 657 | 26788 | 145,28 | 2,62 | 400,95 | 1,67 | LO-278053-RFBW-C1000-K177 |
| | | 68,3 | 47,8 | | FAR RED | 727 | 16703 | 10,08 | 0,21 | | | |
| | | 98,0 | 68,6 | | DEEP BLUE | 455 | 36043 | 133,39 | 1,94 | | | |
| | | 97,4 | 68,1 | | WHITE | 5000 | 8785 | 112,20 | 1,65 | | | |
| | 800 | 81,8 | 65,5 | 278,8 | RED | 657 | 30575 | 165,82 | 2,53 | 448,10 | 1,61 | LO-278053-RFBW-C1000-K177 |
| | | 69,6 | 55,7 | | FAR RED | 727 | 19064 | 11,51 | 0,21 | | | |
| | | 98,7 | 78,9 | | DEEP BLUE | 455 | 39815 | 147,35 | 1,87 | | | |
| | | 98,3 | 78,7 | | 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.

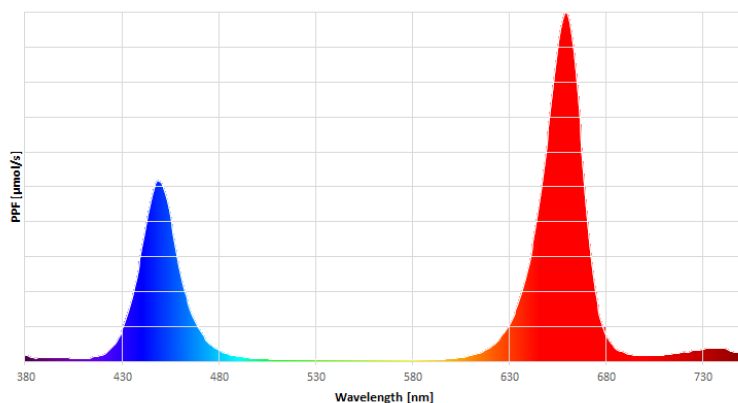
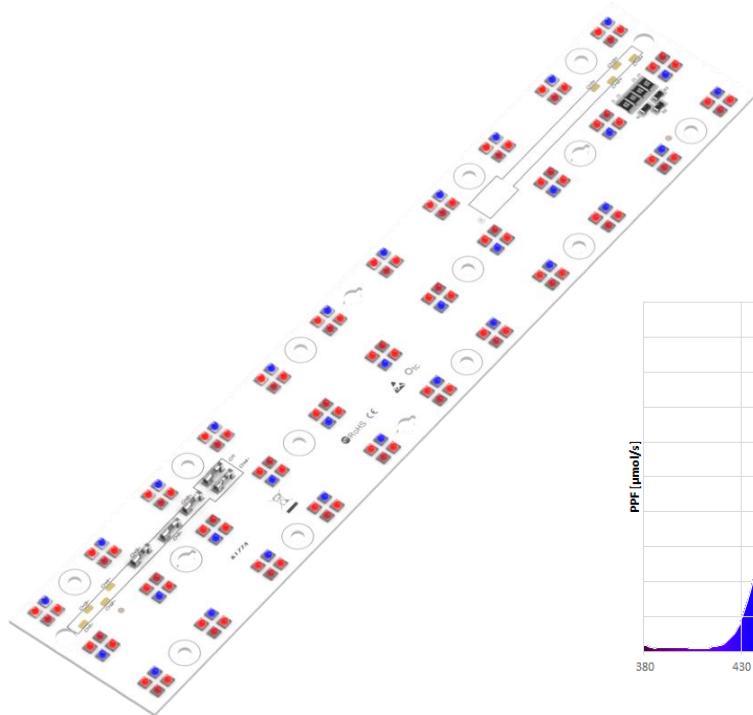


GROWEMITY 3x11 RRFB - K177

| | Input Current [mA] | Forward Voltage [V] | Power [W] | Total 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 - K177 | 350 | 71,0 | 24,8 | 104,0 | RED | 657 | 14025 | 76,07 | 3,06 | 234,96 | 2,26 | LO-278053-RRFB-C1000-K177 |
| | | 71,0 | 24,8 | | RED | 657 | 14025 | 76,07 | 3,06 | | | |
| | | 61,1 | 21,4 | | FAR RED | 727 | 8745 | 5,28 | 0,25 | | | |
| | | 94,1 | 32,9 | | DEEP BLUE | 455 | 20955 | 77,55 | 2,36 | | | |
| | 500 | 74,3 | 37,1 | 154,3 | RED | 657 | 19775 | 107,25 | 2,89 | 329,74 | 2,14 | LO-278053-RRFB-C1000-K177 |
| | | 74,3 | 37,1 | | RED | 657 | 19775 | 107,25 | 2,89 | | | |
| | | 64,4 | 32,2 | | FAR RED | 727 | 12330 | 7,44 | 0,23 | | | |
| | | 95,7 | 47,9 | | DEEP BLUE | 455 | 29127 | 107,79 | 2,25 | | | |
| | 700 | 79,2 | 55,4 | 227,3 | RED | 657 | 26788 | 145,28 | 2,62 | 434,04 | 1,91 | LO-278053-RRFB-C1000-K177 |
| | | 79,2 | 55,4 | | RED | 657 | 26788 | 145,28 | 2,62 | | | |
| | | 68,3 | 47,8 | | FAR RED | 727 | 16703 | 10,08 | 0,21 | | | |
| | | 98,0 | 68,6 | | DEEP BLUE | 455 | 36043 | 133,39 | 1,94 | | | |
| | 800 | 81,8 | 65,5 | 265,6 | RED | 657 | 30575 | 165,82 | 2,53 | 490,50 | 1,85 | LO-278053-RRFB-C1000-K177 |
| | | 81,8 | 65,5 | | RED | 657 | 30575 | 165,82 | 2,53 | | | |
| | | 69,6 | 55,7 | | FAR RED | 727 | 19064 | 11,51 | 0,21 | | | |
| | | 98,7 | 78,9 | | 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%.



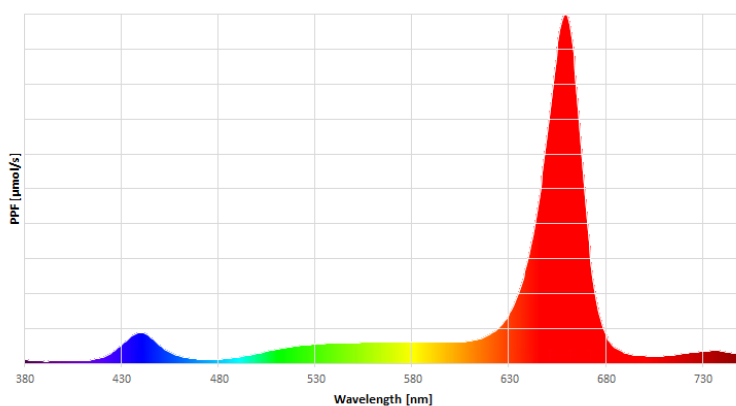
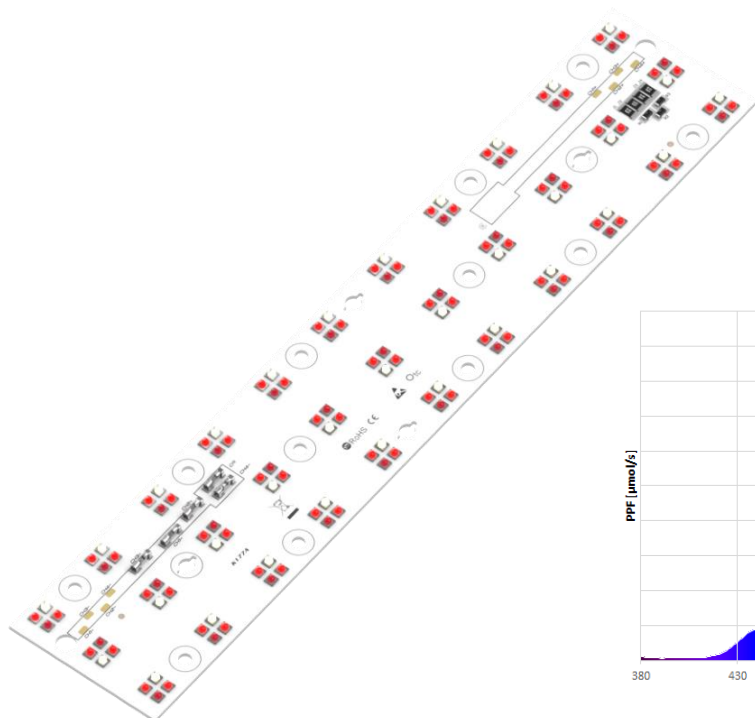
GROWEMITY 3x11 RRFW - K177

| | Input Current [mA] | Forward Voltage [V] | Power [W] | Total 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 - K177 | 350 | 71,0 | 24,8 | 102,8 | RED | 657 | 14025 | 76,07 | 3,06 | 222,09 | 2,16 | L0-278053-RRFW-C1000-K177 |
| | | 71,0 | 24,8 | | RED | 657 | 14025 | 76,07 | 3,06 | | | |
| | | 61,1 | 21,4 | | FAR RED | 727 | 8745 | 5,28 | 0,25 | | | |
| | | 90,8 | 31,8 | | WHITE | 5000 | 4881 | 64,68 | 2,04 | | | |
| | 500 | 74,3 | 37,1 | 153,5 | RED | 657 | 19775 | 107,25 | 2,89 | 308,41 | 2,01 | L0-278053-RRFW-C1000-K177 |
| | | 74,3 | 37,1 | | RED | 657 | 19775 | 107,25 | 2,89 | | | |
| | | 64,4 | 32,2 | | FAR RED | 727 | 12330 | 7,44 | 0,23 | | | |
| | | 94,1 | 47,0 | | WHITE | 5000 | 6687 | 86,46 | 1,84 | | | |
| | 700 | 79,2 | 55,4 | 226,8 | RED | 657 | 26788 | 145,28 | 2,62 | 412,85 | 1,82 | L0-278053-RRFW-C1000-K177 |
| | | 79,2 | 55,4 | | RED | 657 | 26788 | 145,28 | 2,62 | | | |
| | | 68,3 | 47,8 | | FAR RED | 727 | 16703 | 10,08 | 0,21 | | | |
| | | 97,4 | 68,1 | | WHITE | 5000 | 8785 | 112,20 | 1,65 | | | |
| | 800 | 81,8 | 65,5 | 265,3 | RED | 657 | 30575 | 165,82 | 2,53 | 466,57 | 1,76 | L0-278053-RRFW-C1000-K177 |
| | | 81,8 | 65,5 | | RED | 657 | 30575 | 165,82 | 2,53 | | | |
| | | 69,6 | 55,7 | | FAR RED | 727 | 19064 | 11,51 | 0,21 | | | |
| | | 98,3 | 78,7 | | 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%.



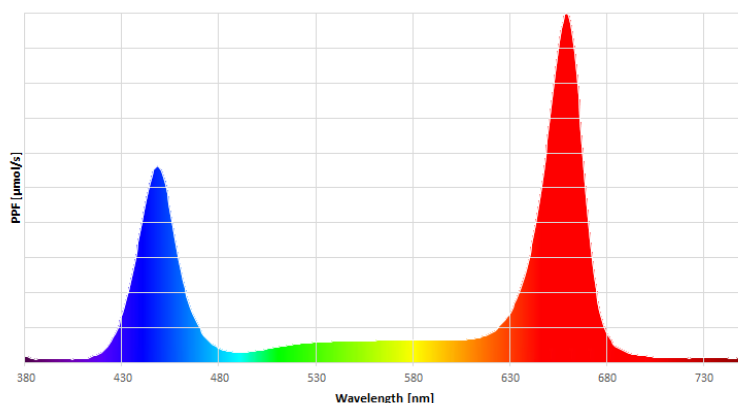
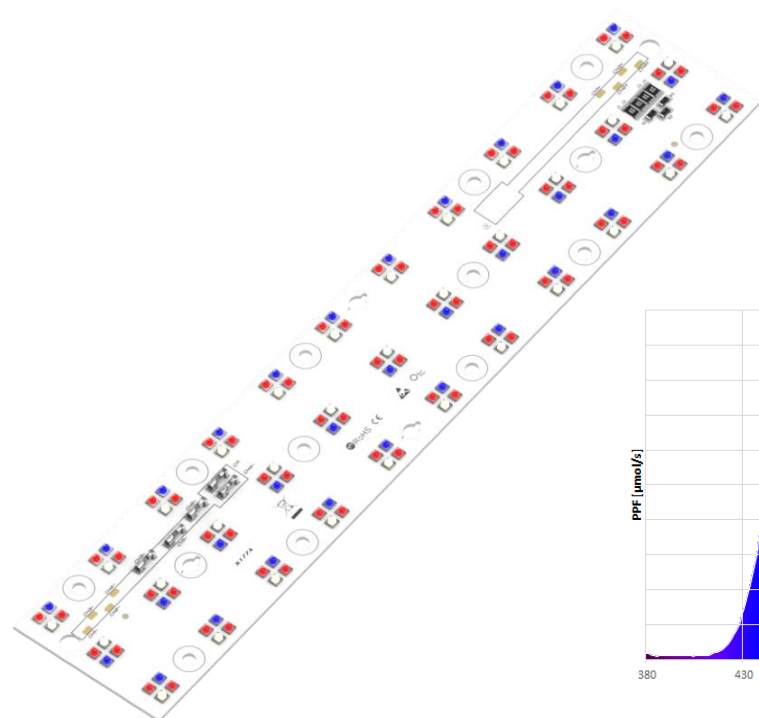
GROWEMITY 3x11 RRBW - K177

| | Input Current [mA] | Forward Voltage [V] | Power [W] | Power [W] | Colour | λ [nm] / CCT [K] | Radiant Power [mW] / Luminous Flux [lm] | PPF [$\mu\text{mol/s}$] | PPF/W [$\mu\text{mol/J}$] | PPF [$\mu\text{mol/s}$] | PPF/W [$\mu\text{mol/J}$] | Article Number |
|----------------------------|--------------------|---------------------|-----------|-----------|-----------|--------------------------|---|---------------------------|-----------------------------|---------------------------|-----------------------------|---------------------------|
| GrowEmity 3x11 RRBW - K177 | 350 | 71,0 | 24,8 | 114,3 | RED | 657 | 14025 | 76,07 | 3,06 | 294,36 | 2,57 | LO-278053-RRBW-C1000-K177 |
| | | 71,0 | 24,8 | | RED | 657 | 14025 | 76,07 | 3,06 | | | |
| | | 94,1 | 32,9 | | DEEP BLUE | 455 | 20955 | 77,55 | 2,36 | | | |
| | | 90,8 | 31,8 | | WHITE | 5000 | 4881 | 64,68 | 2,04 | | | |
| | 500 | 74,3 | 37,1 | 169,1 | RED | 657 | 19775 | 107,25 | 2,89 | 408,76 | 2,42 | LO-278053-RRBW-C1000-K177 |
| | | 74,3 | 37,1 | | RED | 657 | 19775 | 107,25 | 2,89 | | | |
| | | 95,7 | 47,9 | | DEEP BLUE | 455 | 29127 | 107,79 | 2,25 | | | |
| | | 94,1 | 47,0 | | WHITE | 5000 | 6687 | 86,46 | 1,84 | | | |
| | 700 | 79,2 | 55,4 | 247,6 | RED | 657 | 26788 | 145,28 | 2,62 | 536,15 | 2,17 | LO-278053-RRBW-C1000-K177 |
| | | 79,2 | 55,4 | | RED | 657 | 26788 | 145,28 | 2,62 | | | |
| | | 98,0 | 68,6 | | DEEP BLUE | 455 | 36043 | 133,39 | 1,94 | | | |
| | | 97,4 | 68,1 | | WHITE | 5000 | 8785 | 112,20 | 1,65 | | | |
| | 800 | 81,8 | 65,5 | 288,6 | RED | 657 | 30575 | 165,82 | 2,53 | 602,41 | 2,09 | LO-278053-RRBW-C1000-K177 |
| | | 81,8 | 65,5 | | RED | 657 | 30575 | 165,82 | 2,53 | | | |
| | | 98,7 | 78,9 | | DEEP BLUE | 455 | 39815 | 147,35 | 1,87 | | | |
| | | 98,3 | 78,7 | | 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%.

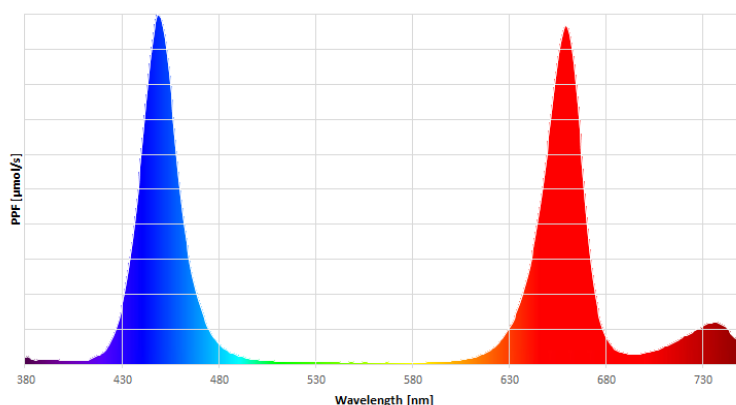
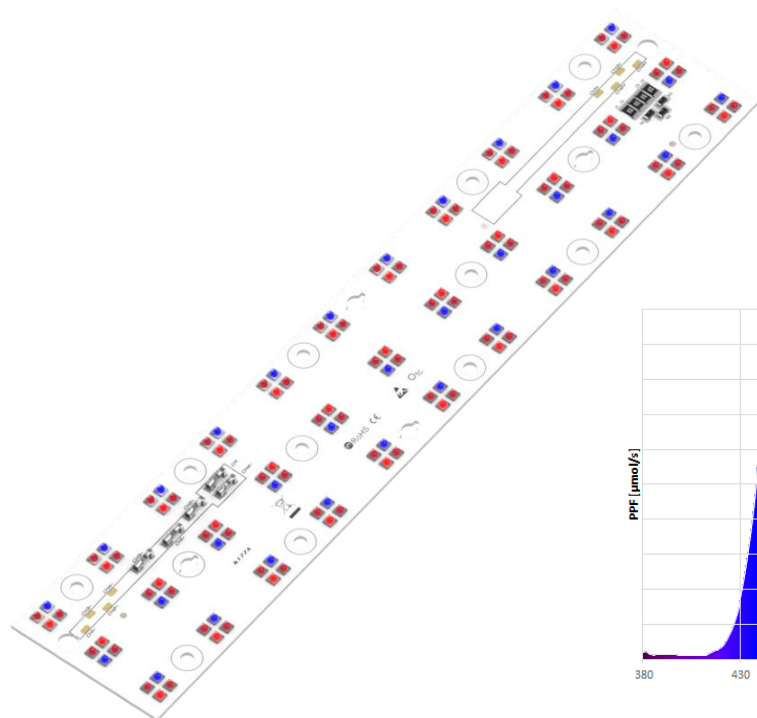


GROWEMITY 3x11 RFFB - K177

| | Input Current [mA] | Forward Voltage [V] | Power [W] | Total 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 - K177 | 350 | 71,0 | 24,8 | 100,485 | RED | 657 | 14025 | 76,07 | 3,06 | 164,18 | 1,63 | LO-278053-RFFB-C1000-K177 |
| | | 61,1 | 21,4 | | FAR RED | 727 | 8745 | 5,28 | 0,25 | | | |
| | | 61,1 | 21,4 | | FAR RED | 727 | 8745 | 5,28 | 0,25 | | | |
| | | 94,1 | 32,9 | | DEEP BLUE | 455 | 20955 | 77,55 | 2,36 | | | |
| | 500 | 74,3 | 37,1 | 149,3 | RED | 657 | 19775 | 107,25 | 2,89 | 229,94 | 1,54 | LO-278053-RFFB-C1000-K177 |
| | | 64,4 | 32,2 | | FAR RED | 727 | 12330 | 7,44 | 0,23 | | | |
| | | 64,4 | 32,2 | | FAR RED | 727 | 12330 | 7,44 | 0,23 | | | |
| | | 95,7 | 47,9 | | DEEP BLUE | 455 | 29127 | 107,79 | 2,25 | | | |
| | 700 | 79,2 | 55,4 | 219,7 | RED | 657 | 26788 | 145,28 | 2,62 | 298,84 | 1,36 | LO-278053-RFFB-C1000-K177 |
| | | 68,3 | 47,8 | | FAR RED | 727 | 16703 | 10,08 | 0,21 | | | |
| | | 68,3 | 47,8 | | FAR RED | 727 | 16703 | 10,08 | 0,21 | | | |
| | | 98,0 | 68,6 | | DEEP BLUE | 455 | 36043 | 133,39 | 1,94 | | | |
| | 800 | 81,8 | 65,5 | 255,8 | RED | 657 | 30575 | 165,82 | 2,53 | 336,19 | 1,31 | LO-278053-RFFB-C1000-K177 |
| | | 69,6 | 55,7 | | FAR RED | 727 | 19064 | 11,51 | 0,21 | | | |
| | | 69,6 | 55,7 | | FAR RED | 727 | 19064 | 11,51 | 0,21 | | | |
| | | 98,7 | 78,9 | | 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%.



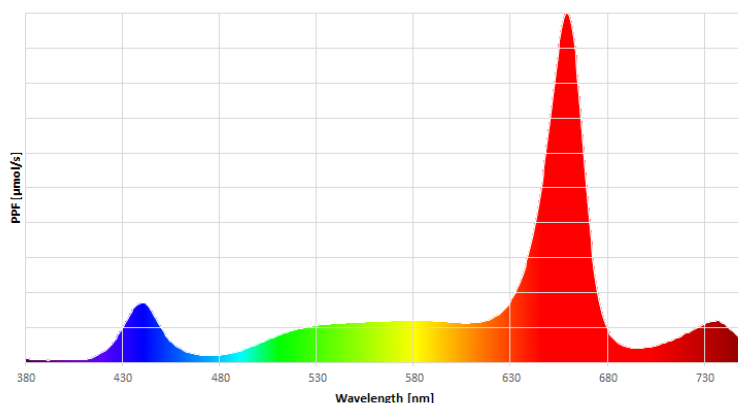
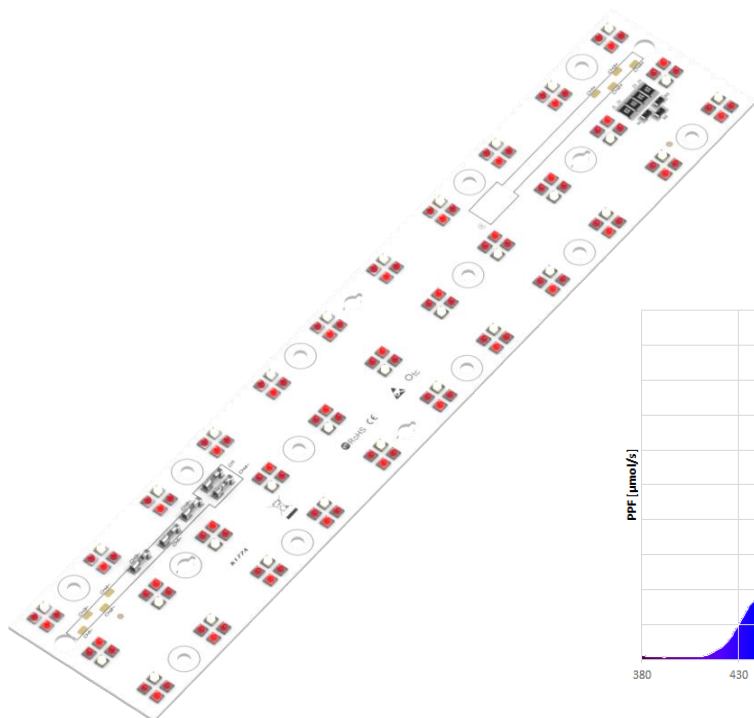
GROWEMITY 3x11 RFFW - K177

| | Input Current [mA] | Forward Voltage [V] | Power [W] | Total 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 - K177 | 350 | 71,0 | 24,8 | 99,3 | RED | 657 | 14025 | 76,07 | 3,06 | 151,31 | 1,52 | L0-278053-RFFW-C1000-K177 |
| | | 61,1 | 21,4 | | FAR RED | 727 | 8745 | 5,28 | 0,25 | | | |
| | | 61,1 | 21,4 | | FAR RED | 727 | 8745 | 5,28 | 0,25 | | | |
| | | 90,8 | 31,8 | | WHITE | 5000 | 4881 | 64,68 | 2,04 | | | |
| | 500 | 74,3 | 37,1 | 148,5 | RED | 657 | 19775 | 107,25 | 2,89 | 208,60 | 1,40 | L0-278053-RFFW-C1000-K177 |
| | | 64,4 | 32,2 | | FAR RED | 727 | 12330 | 7,44 | 0,23 | | | |
| | | 64,4 | 32,2 | | FAR RED | 727 | 12330 | 7,44 | 0,23 | | | |
| | | 94,1 | 47,0 | | WHITE | 5000 | 6687 | 86,46 | 1,84 | | | |
| | 700 | 79,2 | 55,4 | 219,2 | RED | 657 | 26788 | 145,28 | 2,62 | 277,65 | 1,27 | L0-278053-RFFW-C1000-K177 |
| | | 68,3 | 47,8 | | FAR RED | 727 | 16703 | 10,08 | 0,21 | | | |
| | | 68,3 | 47,8 | | FAR RED | 727 | 16703 | 10,08 | 0,21 | | | |
| | | 97,4 | 68,1 | | WHITE | 5000 | 8785 | 112,20 | 1,65 | | | |
| | 800 | 81,8 | 65,5 | 255,6 | RED | 657 | 30575 | 165,82 | 2,53 | 312,26 | 1,22 | L0-278053-RFFW-C1000-K177 |
| | | 69,6 | 55,7 | | FAR RED | 727 | 19064 | 11,51 | 0,21 | | | |
| | | 69,6 | 55,7 | | FAR RED | 727 | 19064 | 11,51 | 0,21 | | | |
| | | 98,3 | 78,7 | | 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%.



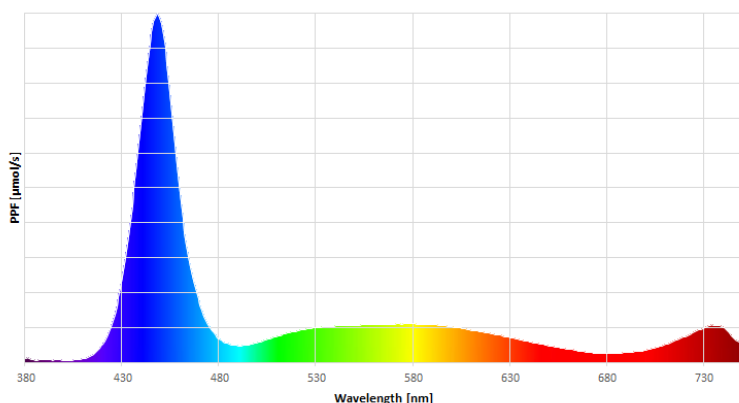
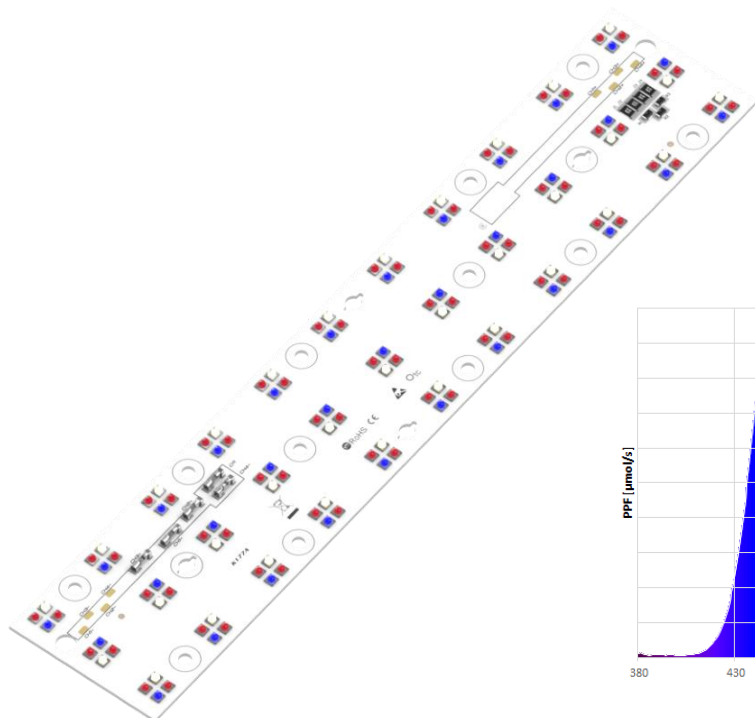
GROWEMITY 3x11 FFBW - K177

| | Input Current [mA] | Forward Voltage [V] | Power [W] | Total 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 - K177 | 350 | 61,1 | 21,4 | 107,4 | FAR RED | 727 | 8745 | 5,28 | 0,25 | 152,79 | 1,42 | L0-278053-FFBW-C1000-K177 |
| | | 61,1 | 21,4 | | FAR RED | 727 | 8745 | 5,28 | 0,25 | | | |
| | | 94,1 | 32,9 | | DEEP BLUE | 455 | 20955 | 77,55 | 2,36 | | | |
| | | 90,8 | 31,8 | | WHITE | 5000 | 4881 | 64,68 | 2,04 | | | |
| | 500 | 64,4 | 32,2 | 159,2 | FAR RED | 727 | 12330 | 7,44 | 0,23 | 209,14 | 1,31 | L0-278053-FFBW-C1000-K177 |
| | | 64,4 | 32,2 | | FAR RED | 727 | 12330 | 7,44 | 0,23 | | | |
| | | 95,7 | 47,9 | | DEEP BLUE | 455 | 29127 | 107,79 | 2,25 | | | |
| | | 94,1 | 47,0 | | WHITE | 5000 | 6687 | 86,46 | 1,84 | | | |
| | 700 | 68,3 | 47,8 | 232,4 | FAR RED | 727 | 16703 | 10,08 | 0,21 | 265,76 | 1,14 | L0-278053-FFBW-C1000-K177 |
| | | 68,3 | 47,8 | | FAR RED | 727 | 16703 | 10,08 | 0,21 | | | |
| | | 98,0 | 68,6 | | DEEP BLUE | 455 | 36043 | 133,39 | 1,94 | | | |
| | | 97,4 | 68,1 | | WHITE | 5000 | 8785 | 112,20 | 1,65 | | | |
| | 800 | 69,6 | 55,7 | 269,0 | FAR RED | 727 | 19064 | 11,51 | 0,21 | 293,79 | 1,09 | L0-278053-FFBW-C1000-K177 |
| | | 69,6 | 55,7 | | FAR RED | 727 | 19064 | 11,51 | 0,21 | | | |
| | | 98,7 | 78,9 | | DEEP BLUE | 455 | 39815 | 147,35 | 1,87 | | | |
| | | 98,3 | 78,7 | | 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%.

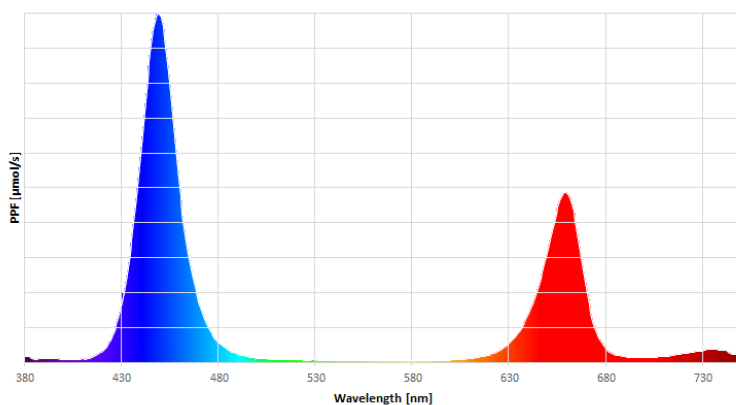
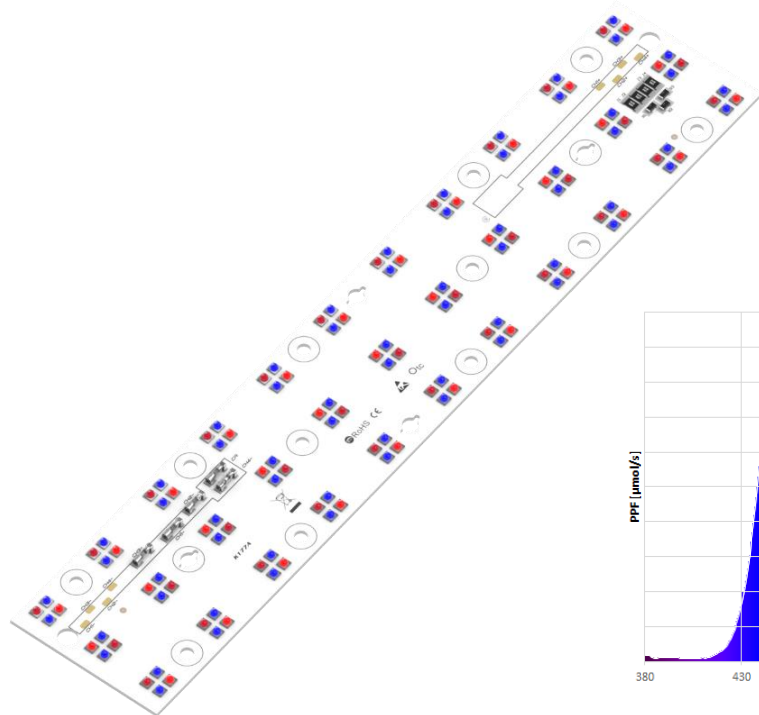


GROWEMITY 3X11 RFBB - K177

| | Input Current [mA] | Forward Voltage [V] | Power [W] | Total 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 - K177 | 350 | 71,0 | 24,8 | 112,0 | RED | 657 | 14025 | 76,07 | 3,06 | 236,45 | 2,11 | LO-278053-RFBB-C1000-K177 |
| | | 61,1 | 21,4 | | FAR RED | 727 | 8745 | 5,28 | 0,25 | | | |
| | | 94,1 | 32,9 | | DEEP BLUE | 455 | 20955 | 77,55 | 2,36 | | | |
| | | 94,1 | 32,9 | | DEEP BLUE | 455 | 20955 | 77,55 | 2,36 | | | |
| | 500 | 74,3 | 37,1 | 165,0 | RED | 657 | 19775 | 107,25 | 2,89 | 330,29 | 2,00 | LO-278053-RFBB-C1000-K177 |
| | | 64,4 | 32,2 | | FAR RED | 727 | 12330 | 7,44 | 0,23 | | | |
| | | 95,7 | 47,9 | | DEEP BLUE | 455 | 29127 | 107,79 | 2,25 | | | |
| | | 95,7 | 47,9 | | DEEP BLUE | 455 | 29127 | 107,79 | 2,25 | | | |
| | 700 | 79,2 | 55,4 | 240,5 | RED | 657 | 26788 | 145,28 | 2,62 | 422,14 | 1,76 | LO-278053-RFBB-C1000-K177 |
| | | 68,3 | 47,8 | | FAR RED | 727 | 16703 | 10,08 | 0,21 | | | |
| | | 98,0 | 68,6 | | DEEP BLUE | 455 | 36043 | 133,39 | 1,94 | | | |
| | | 98,0 | 68,6 | | DEEP BLUE | 455 | 36043 | 133,39 | 1,94 | | | |
| | 800 | 81,8 | 65,5 | 279,0 | RED | 657 | 30575 | 165,82 | 2,53 | 472,02 | 1,69 | LO-278053-RFBB-C1000-K177 |
| | | 69,6 | 55,7 | | FAR RED | 727 | 19064 | 11,51 | 0,21 | | | |
| | | 98,7 | 78,9 | | DEEP BLUE | 455 | 39815 | 147,35 | 1,87 | | | |
| | | 98,7 | 78,9 | | 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%.



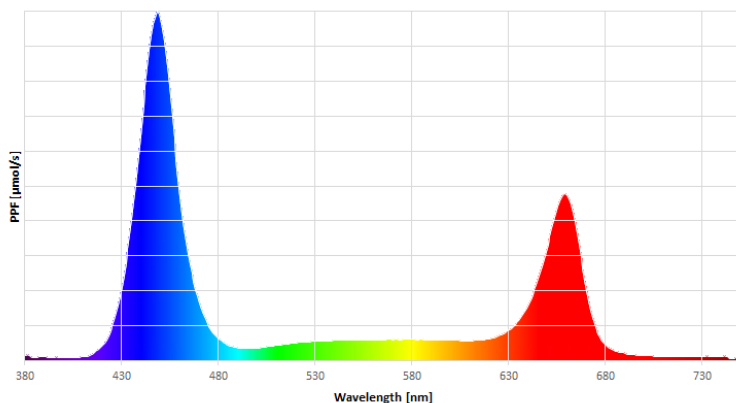
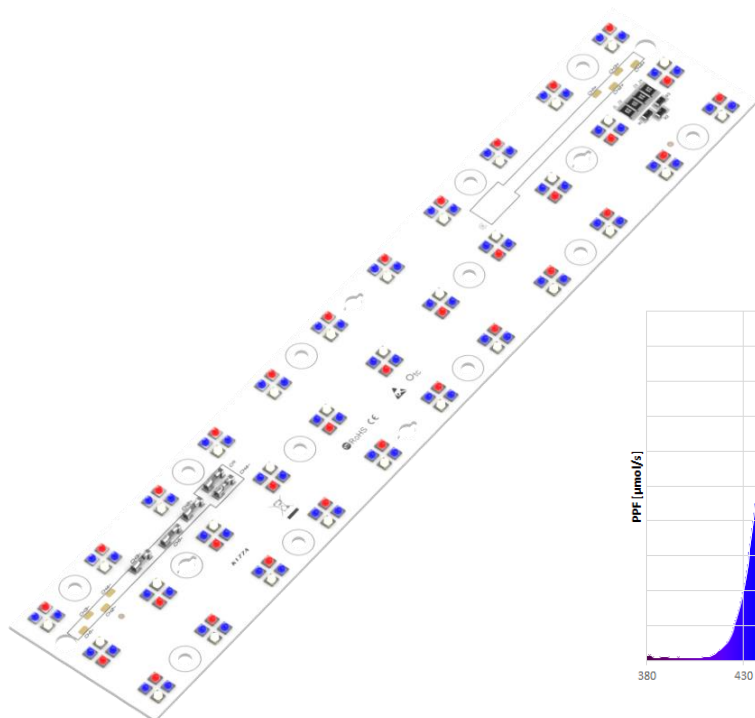
GROWEMITY 3x11 RBBW - K177

| | Input Current [mA] | Forward Voltage [V] | Power [W] | Total 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 - K177 | 350 | 71,0 | 24,8 | 122,4 | RED | 657 | 14025 | 76,07 | 3,06 | 295,85 | 2,42 | LO-278053-RBBW-C1000-K177 |
| | | 94,1 | 32,9 | | DEEP BLUE | 455 | 20955 | 77,55 | 2,36 | | | |
| | | 94,1 | 32,9 | | DEEP BLUE | 455 | 20955 | 77,55 | 2,36 | | | |
| | | 90,8 | 31,8 | | WHITE | 5000 | 4881 | 64,68 | 2,04 | | | |
| | 500 | 74,3 | 37,1 | 179,9 | RED | 657 | 19775 | 107,25 | 2,89 | 409,30 | 2,28 | LO-278053-RBBW-C1000-K177 |
| | | 95,7 | 47,9 | | DEEP BLUE | 455 | 29127 | 107,79 | 2,25 | | | |
| | | 95,7 | 47,9 | | DEEP BLUE | 455 | 29127 | 107,79 | 2,25 | | | |
| | | 94,1 | 47,0 | | WHITE | 5000 | 6687 | 86,46 | 1,84 | | | |
| | 700 | 79,2 | 55,4 | 260,8 | RED | 657 | 26788 | 145,28 | 2,62 | 524,26 | 2,01 | LO-278053-RBBW-C1000-K177 |
| | | 98,0 | 68,6 | | DEEP BLUE | 455 | 36043 | 133,39 | 1,94 | | | |
| | | 98,0 | 68,6 | | DEEP BLUE | 455 | 36043 | 133,39 | 1,94 | | | |
| | | 97,4 | 68,1 | | WHITE | 5000 | 8785 | 112,20 | 1,65 | | | |
| | 800 | 81,8 | 65,5 | 302,0 | RED | 657 | 30575 | 165,82 | 2,53 | 583,93 | 1,93 | LO-278053-RBBW-C1000-K177 |
| | | 98,7 | 78,9 | | DEEP BLUE | 455 | 39815 | 147,35 | 1,87 | | | |
| | | 98,7 | 78,9 | | DEEP BLUE | 455 | 39815 | 147,35 | 1,87 | | | |
| | | 98,3 | 78,7 | | 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%.



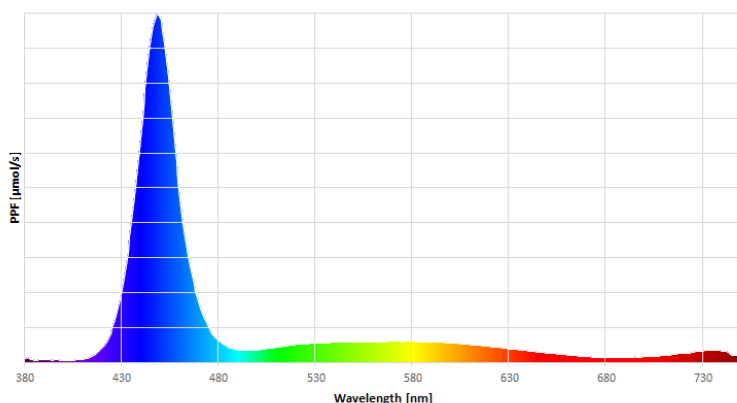
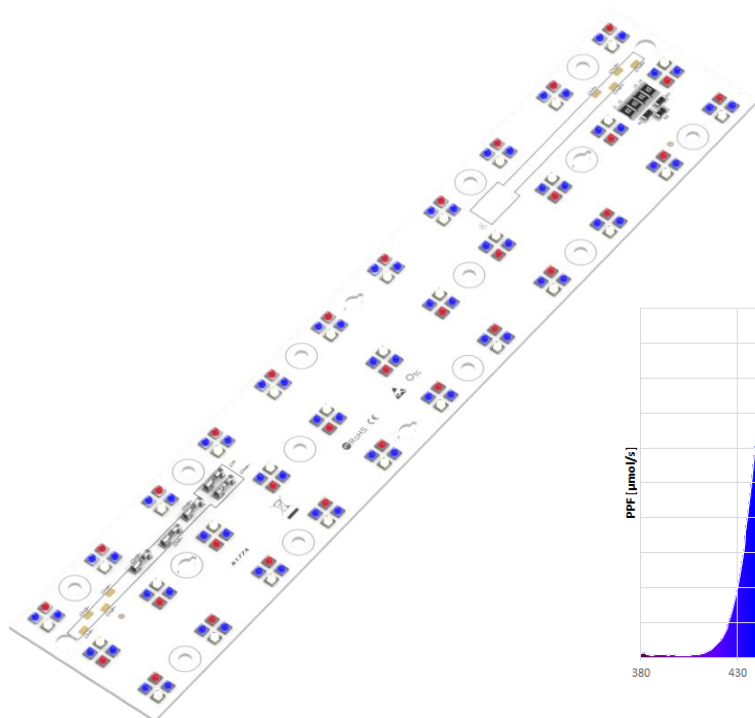
GROWEMITY 3x11 FBBW - K177

| | Input Current [mA] | Forward Voltage [V] | Power [W] | Total 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 - K177 | 350 | 61,1 | 21,4 | 119,0 | FAR RED | 727 | 8745 | 5,28 | 0,25 | 225,06 | 1,89 | LO-278053-FBBW-C1000-K177 |
| | | 94,1 | 32,9 | | DEEP BLUE | 455 | 20955 | 77,55 | 2,36 | | | |
| | | 94,1 | 32,9 | | DEEP BLUE | 455 | 20955 | 77,55 | 2,36 | | | |
| | | 90,8 | 31,8 | | WHITE | 5000 | 4881 | 64,68 | 2,04 | | | |
| | 500 | 64,4 | 32,2 | 174,9 | FAR RED | 727 | 12330 | 7,44 | 0,23 | 309,49 | 1,77 | LO-278053-FBBW-C1000-K177 |
| | | 95,7 | 47,9 | | DEEP BLUE | 455 | 29127 | 107,79 | 2,25 | | | |
| | | 95,7 | 47,9 | | DEEP BLUE | 455 | 29127 | 107,79 | 2,25 | | | |
| | | 94,1 | 47,0 | | WHITE | 5000 | 6687 | 86,46 | 1,84 | | | |
| | 700 | 68,3 | 47,8 | 253,2 | FAR RED | 727 | 16703 | 10,08 | 0,21 | 389,06 | 1,54 | LO-278053-FBBW-C1000-K177 |
| | | 98,0 | 68,6 | | DEEP BLUE | 455 | 36043 | 133,39 | 1,94 | | | |
| | | 98,0 | 68,6 | | DEEP BLUE | 455 | 36043 | 133,39 | 1,94 | | | |
| | | 97,4 | 68,1 | | WHITE | 5000 | 8785 | 112,20 | 1,65 | | | |
| | 800 | 69,6 | 55,7 | 292,2 | FAR RED | 727 | 19064 | 11,51 | 0,21 | 429,62 | 1,47 | LO-278053-FBBW-C1000-K177 |
| | | 98,7 | 78,9 | | DEEP BLUE | 455 | 39815 | 147,35 | 1,87 | | | |
| | | 98,7 | 78,9 | | DEEP BLUE | 455 | 39815 | 147,35 | 1,87 | | | |
| | | 98,3 | 78,7 | | 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%.



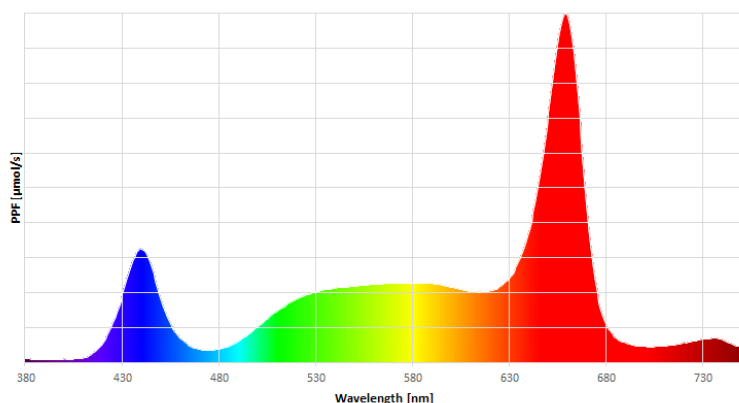
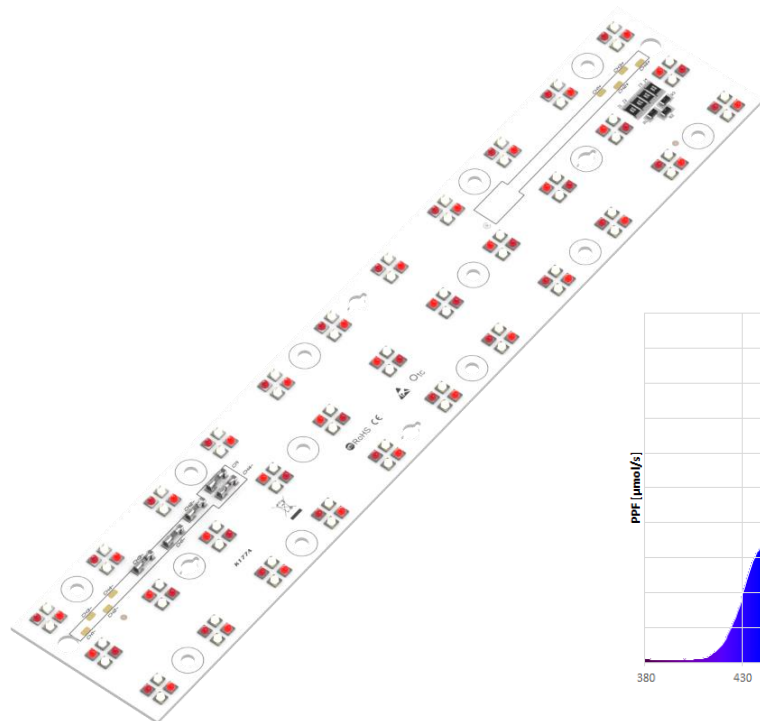
GROWEMITY 3x11 RFWW - K177

| | Input Current [mA] | Forward Voltage [V] | Power [W] | Total 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 - K177 | 350 | 71,0 | 24,8 | 109,7 | RED | 657 | 14025 | 76,07 | 3,06 | 210,71 | 1,92 | LO-278053-RFWW-C1000-K177 |
| | | 61,1 | 21,4 | | FAR RED | 727 | 8745 | 5,28 | 0,25 | | | |
| | | 90,8 | 31,8 | | WHITE | 5000 | 4881 | 64,68 | 2,04 | | | |
| | | 90,8 | 31,8 | | WHITE | 5000 | 4881 | 64,68 | 2,04 | | | |
| | 500 | 74,3 | 37,1 | 163,4 | RED | 657 | 19775 | 107,25 | 2,89 | 287,62 | 1,76 | LO-278053-RFWW-C1000-K177 |
| | | 64,4 | 32,2 | | FAR RED | 727 | 12330 | 7,44 | 0,23 | | | |
| | | 94,1 | 47,0 | | WHITE | 5000 | 6687 | 86,46 | 1,84 | | | |
| | | 94,1 | 47,0 | | WHITE | 5000 | 6687 | 86,46 | 1,84 | | | |
| | 700 | 79,2 | 55,4 | 239,5 | RED | 657 | 26788 | 145,28 | 2,62 | 379,77 | 1,59 | LO-278053-RFWW-C1000-K177 |
| | | 68,3 | 47,8 | | FAR RED | 727 | 16703 | 10,08 | 0,21 | | | |
| | | 97,4 | 68,1 | | WHITE | 5000 | 8785 | 112,20 | 1,65 | | | |
| | | 97,4 | 68,1 | | WHITE | 5000 | 8785 | 112,20 | 1,65 | | | |
| | 800 | 81,8 | 65,5 | 278,5 | RED | 657 | 30575 | 165,82 | 2,53 | 424,17 | 1,52 | LO-278053-RFWW-C1000-K177 |
| | | 69,6 | 55,7 | | FAR RED | 727 | 19064 | 11,51 | 0,21 | | | |
| | | 98,3 | 78,7 | | WHITE | 5000 | 9664 | 123,42 | 1,57 | | | |
| | | 98,3 | 78,7 | | 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%.



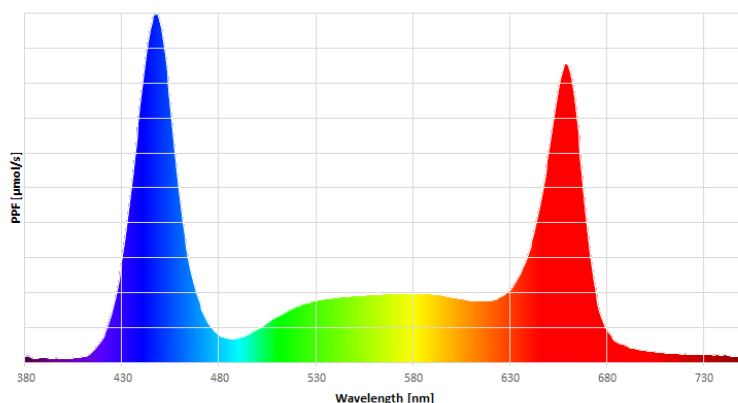
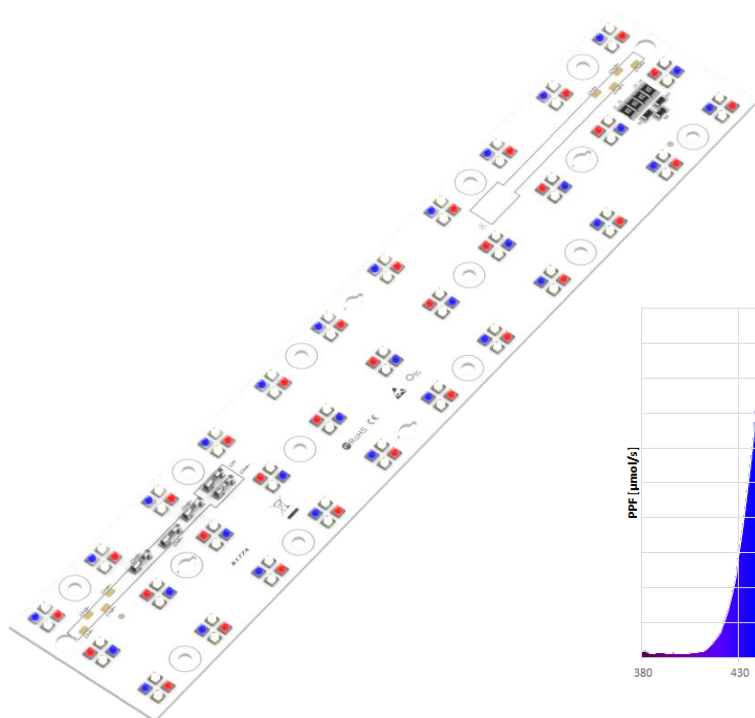
GROWEMITY 3x11 RBWW - K177

| | Input Current [mA] | Forward Voltage [V] | Power [W] | Total 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 - K177 | 350 | 71,0 | 24,8 | 121,3 | RED | 657 | 14025 | 76,07 | 3,06 | 282,98 | 2,33 | LO-278053-RBWW-C1000-K177 |
| | | 94,1 | 32,9 | | DEEP BLUE | 455 | 20955 | 77,55 | 2,36 | | | |
| | | 90,8 | 31,8 | | WHITE | 5000 | 4881 | 64,68 | 2,04 | | | |
| | | 90,8 | 31,8 | | WHITE | 5000 | 4881 | 64,68 | 2,04 | | | |
| | 500 | 74,3 | 37,1 | 179,0 | RED | 657 | 19775 | 107,25 | 2,89 | 387,97 | 2,17 | LO-278053-RBWW-C1000-K177 |
| | | 95,7 | 47,9 | | DEEP BLUE | 455 | 29127 | 107,79 | 2,25 | | | |
| | | 94,1 | 47,0 | | WHITE | 5000 | 6687 | 86,46 | 1,84 | | | |
| | | 94,1 | 47,0 | | WHITE | 5000 | 6687 | 86,46 | 1,84 | | | |
| | 700 | 79,2 | 55,4 | 260,3 | RED | 657 | 26788 | 145,28 | 2,62 | 503,07 | 1,93 | LO-278053-RBWW-C1000-K177 |
| | | 98,0 | 68,6 | | DEEP BLUE | 455 | 36043 | 133,39 | 1,94 | | | |
| | | 97,4 | 68,1 | | WHITE | 5000 | 8785 | 112,20 | 1,65 | | | |
| | | 97,4 | 68,1 | | WHITE | 5000 | 8785 | 112,20 | 1,65 | | | |
| | 800 | 81,8 | 65,5 | 301,8 | RED | 657 | 30575 | 165,82 | 2,53 | 560,01 | 1,86 | LO-278053-RBWW-C1000-K177 |
| | | 98,7 | 78,9 | | DEEP BLUE | 455 | 39815 | 147,35 | 1,87 | | | |
| | | 98,3 | 78,7 | | WHITE | 5000 | 9664 | 123,42 | 1,57 | | | |
| | | 98,3 | 78,7 | | 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%.



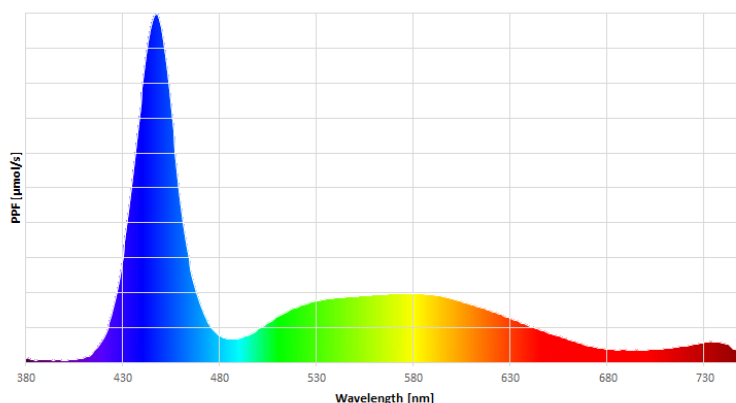
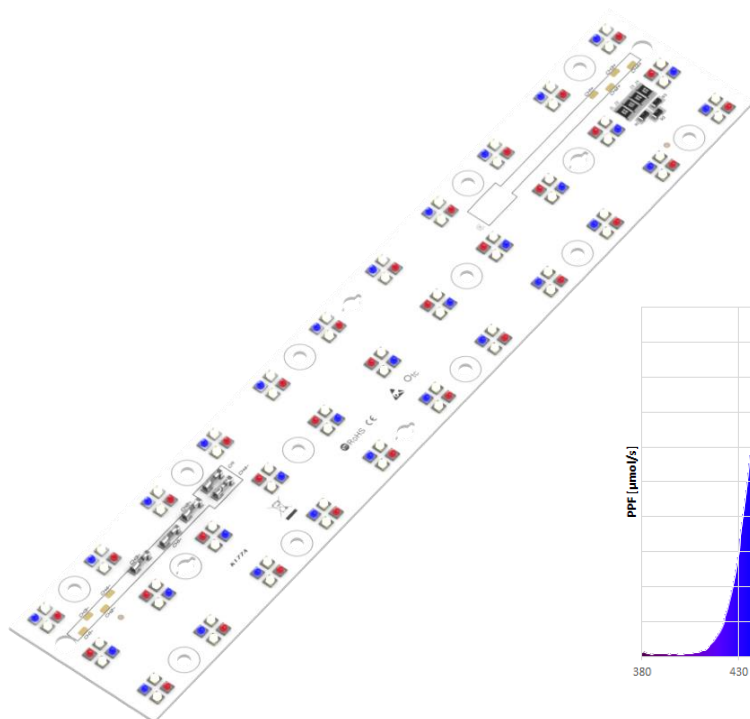
GROWEMITY 3x11 FBWW - K177

| | Input Current [mA] | Forward Voltage [V] | Power [W] | Total 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 - K177 | 350 | 61,1 | 21,4 | 117,8 | FAR RED | 727 | 8745 | 5,28 | 0,25 | 212,19 | 1,80 | LO-278053-FBWW-C1000-K177 |
| | | 94,1 | 32,9 | | DEEP BLUE | 455 | 20955 | 77,55 | 2,36 | | | |
| | | 90,8 | 31,8 | | WHITE | 5000 | 4881 | 64,68 | 2,04 | | | |
| | | 90,8 | 31,8 | | WHITE | 5000 | 4881 | 64,68 | 2,04 | | | |
| | 500 | 64,4 | 32,2 | 174,1 | FAR RED | 727 | 12330 | 7,44 | 0,23 | 288,16 | 1,66 | LO-278053-FBWW-C1000-K177 |
| | | 95,7 | 47,9 | | DEEP BLUE | 455 | 29127 | 107,79 | 2,25 | | | |
| | | 94,1 | 47,0 | | WHITE | 5000 | 6687 | 86,46 | 1,84 | | | |
| | | 94,1 | 47,0 | | WHITE | 5000 | 6687 | 86,46 | 1,84 | | | |
| | 700 | 68,3 | 47,8 | 252,7 | FAR RED | 727 | 16703 | 10,08 | 0,21 | 367,87 | 1,46 | LO-278053-FBWW-C1000-K177 |
| | | 98,0 | 68,6 | | DEEP BLUE | 455 | 36043 | 133,39 | 1,94 | | | |
| | | 97,4 | 68,1 | | WHITE | 5000 | 8785 | 112,20 | 1,65 | | | |
| | | 97,4 | 68,1 | | WHITE | 5000 | 8785 | 112,20 | 1,65 | | | |
| | 800 | 69,6 | 55,7 | 292,0 | FAR RED | 727 | 19064 | 11,51 | 0,21 | 405,70 | 1,39 | LO-278053-FBWW-C1000-K177 |
| | | 98,7 | 78,9 | | DEEP BLUE | 455 | 39815 | 147,35 | 1,87 | | | |
| | | 98,3 | 78,7 | | WHITE | 5000 | 9664 | 123,42 | 1,57 | | | |
| | | 98,3 | 78,7 | | 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%.

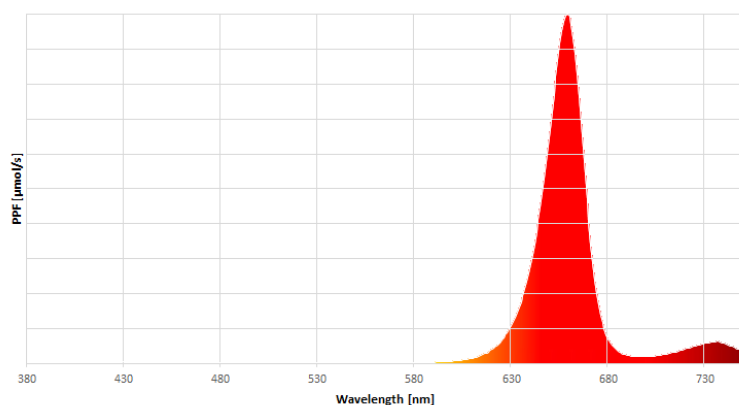
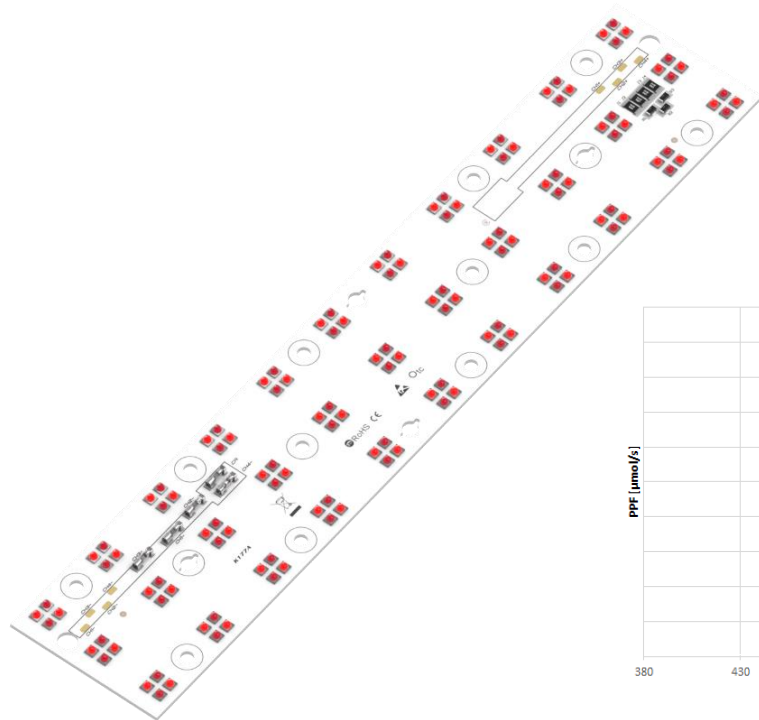


GROWEMITY 3x11 RRFF - K177

| | Input Current [mA] | Forward Voltage [V] | Power [W] | Total 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 - K177 | 350 | 71,0 | 24,8 | 92,4 | RED | 657 | 14025 | 76,07 | 3,06 | 162,69 | 1,76 | L0-278053-RRFF-C1000-K177 |
| | | 71,0 | 24,8 | | RED | 657 | 14025 | 76,07 | 3,06 | | | |
| | | 61,1 | 21,4 | | FAR RED | 727 | 8745 | 5,28 | 0,25 | | | |
| | | 61,1 | 21,4 | | FAR RED | 727 | 8745 | 5,28 | 0,25 | | | |
| | 500 | 74,3 | 37,1 | 138,6 | RED | 657 | 19775 | 107,25 | 2,89 | 229,39 | 1,66 | L0-278053-RRFF-C1000-K177 |
| | | 74,3 | 37,1 | | RED | 657 | 19775 | 107,25 | 2,89 | | | |
| | | 64,4 | 32,2 | | FAR RED | 727 | 12330 | 7,44 | 0,23 | | | |
| | | 64,4 | 32,2 | | FAR RED | 727 | 12330 | 7,44 | 0,23 | | | |
| | 700 | 79,2 | 55,4 | 206,5 | RED | 657 | 26788 | 145,28 | 2,62 | 310,74 | 1,50 | L0-278053-RRFF-C1000-K177 |
| | | 79,2 | 55,4 | | RED | 657 | 26788 | 145,28 | 2,62 | | | |
| | | 68,3 | 47,8 | | FAR RED | 727 | 16703 | 10,08 | 0,21 | | | |
| | | 68,3 | 47,8 | | FAR RED | 727 | 16703 | 10,08 | 0,21 | | | |
| | 800 | 81,8 | 65,5 | 242,4 | RED | 657 | 30575 | 165,82 | 2,53 | 354,66 | 1,46 | L0-278053-RRFF-C1000-K177 |
| | | 81,8 | 65,5 | | RED | 657 | 30575 | 165,82 | 2,53 | | | |
| | | 69,6 | 55,7 | | FAR RED | 727 | 19064 | 11,51 | 0,21 | | | |
| | | 69,6 | 55,7 | | 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%.

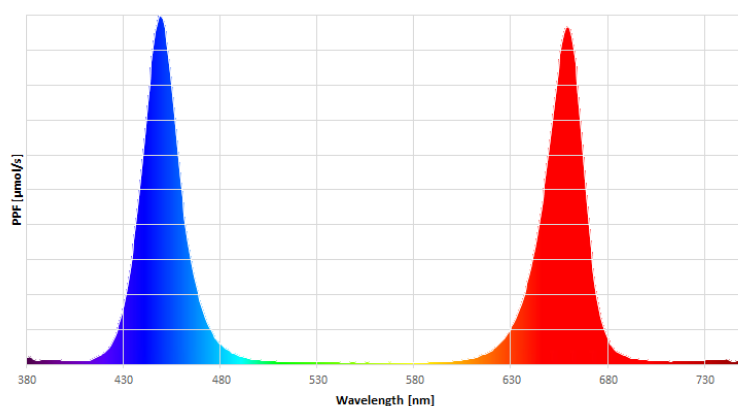
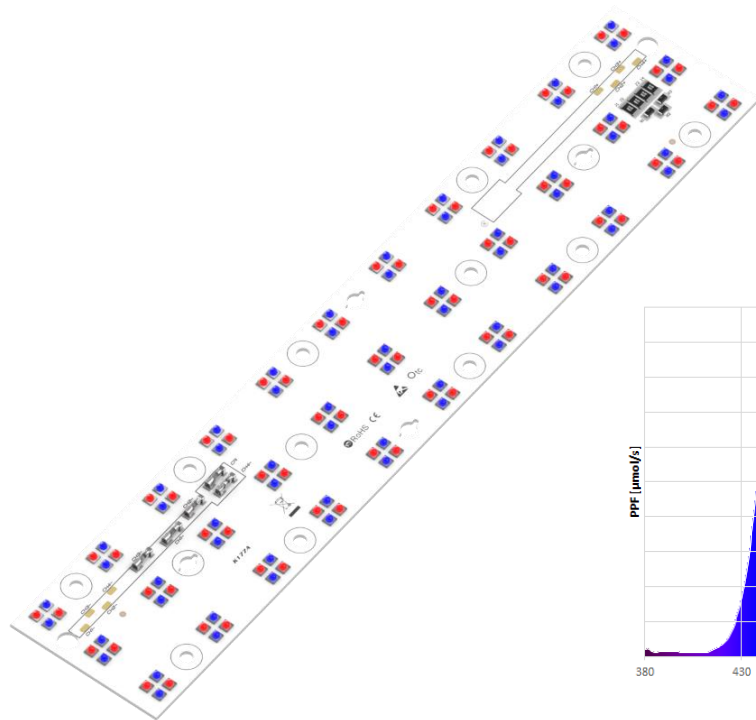


GROWEMITY 3x11 RRBB - K177

| | Input Current [mA] | Forward Voltage [V] | Power [W] | Total 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 - K177 | 350 | 71,0 | 24,8 | 115,5 | RED | 657 | 14025 | 76,07 | 3,06 | 307,23 | 2,66 | L0-278053-RRBB-C1000-K177 |
| | | 71,0 | 24,8 | | RED | 657 | 14025 | 76,07 | 3,06 | | | |
| | | 94,1 | 32,9 | | DEEP BLUE | 455 | 20955 | 77,55 | 2,36 | | | |
| | | 94,1 | 32,9 | | DEEP BLUE | 455 | 20955 | 77,55 | 2,36 | | | |
| | 500 | 74,3 | 37,1 | 170,0 | RED | 657 | 19775 | 107,25 | 2,89 | 430,09 | 2,53 | L0-278053-RRBB-C1000-K177 |
| | | 74,3 | 37,1 | | RED | 657 | 19775 | 107,25 | 2,89 | | | |
| | | 95,7 | 47,9 | | DEEP BLUE | 455 | 29127 | 107,79 | 2,25 | | | |
| | | 95,7 | 47,9 | | DEEP BLUE | 455 | 29127 | 107,79 | 2,25 | | | |
| | 700 | 79,2 | 55,4 | 248,1 | RED | 657 | 26788 | 145,28 | 2,62 | 557,34 | 2,25 | L0-278053-RRBB-C1000-K177 |
| | | 79,2 | 55,4 | | RED | 657 | 26788 | 145,28 | 2,62 | | | |
| | | 98,0 | 68,6 | | DEEP BLUE | 455 | 36043 | 133,39 | 1,94 | | | |
| | | 98,0 | 68,6 | | DEEP BLUE | 455 | 36043 | 133,39 | 1,94 | | | |
| | 800 | 81,8 | 65,5 | 288,8 | RED | 657 | 30575 | 165,82 | 2,53 | 626,33 | 2,17 | L0-278053-RRBB-C1000-K177 |
| | | 81,8 | 65,5 | | RED | 657 | 30575 | 165,82 | 2,53 | | | |
| | | 98,7 | 78,9 | | DEEP BLUE | 455 | 39815 | 147,35 | 1,87 | | | |
| | | 98,7 | 78,9 | | 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%.



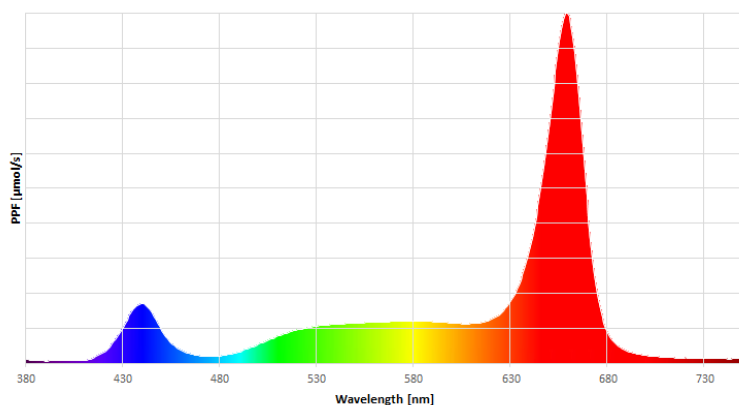
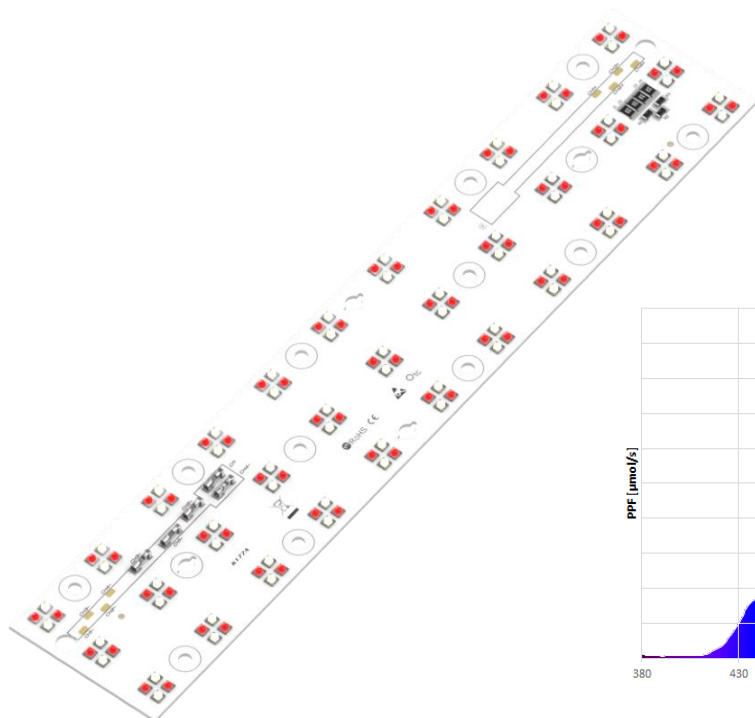
GROWEMITY 3x11 RRWW - K177

| | Input Current [mA] | Forward Voltage [V] | Power [W] | Total 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 RRWW - K177 | 350 | 71,0 | 24,8 | 113,2 | RED | 657 | 14025 | 76,07 | 3,06 | 281,49 | 2,49 | LO-278053-RRWW-C1000-K177 |
| | | 71,0 | 24,8 | | RED | 657 | 14025 | 76,07 | 3,06 | | | |
| | | 90,8 | 31,8 | | WHITE | 5000 | 4881 | 64,68 | 2,04 | | | |
| | | 90,8 | 31,8 | | WHITE | 5000 | 4881 | 64,68 | 2,04 | | | |
| | 500 | 74,3 | 37,1 | 168,3 | RED | 657 | 19775 | 107,25 | 2,89 | 387,42 | 2,30 | LO-278053-RRWW-C1000-K177 |
| | | 74,3 | 37,1 | | RED | 657 | 19775 | 107,25 | 2,89 | | | |
| | | 94,1 | 47,0 | | WHITE | 5000 | 6687 | 86,46 | 1,84 | | | |
| | | 94,1 | 47,0 | | WHITE | 5000 | 6687 | 86,46 | 1,84 | | | |
| | 700 | 79,2 | 55,4 | 247,2 | RED | 657 | 26788 | 145,28 | 2,62 | 514,97 | 2,08 | LO-278053-RRWW-C1000-K177 |
| | | 79,2 | 55,4 | | RED | 657 | 26788 | 145,28 | 2,62 | | | |
| | | 97,4 | 68,1 | | WHITE | 5000 | 8785 | 112,20 | 1,65 | | | |
| | | 97,4 | 68,1 | | WHITE | 5000 | 8785 | 112,20 | 1,65 | | | |
| | 800 | 81,8 | 65,5 | 288,3 | RED | 657 | 30575 | 165,82 | 2,53 | 578,48 | 2,01 | LO-278053-RRWW-C1000-K177 |
| | | 81,8 | 65,5 | | RED | 657 | 30575 | 165,82 | 2,53 | | | |
| | | 98,3 | 78,7 | | WHITE | 5000 | 9664 | 123,42 | 1,57 | | | |
| | | 98,3 | 78,7 | | 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%.

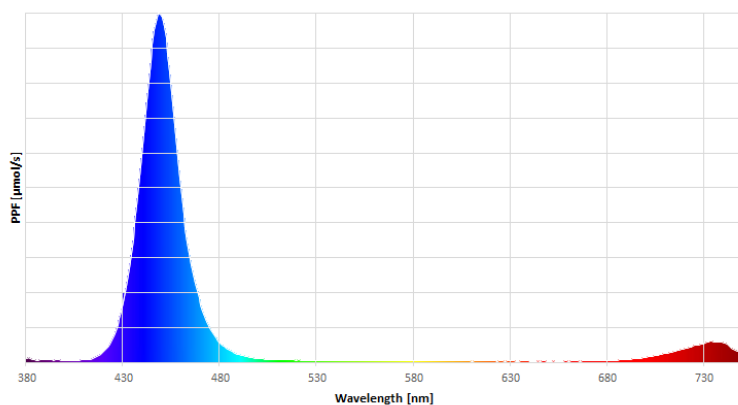
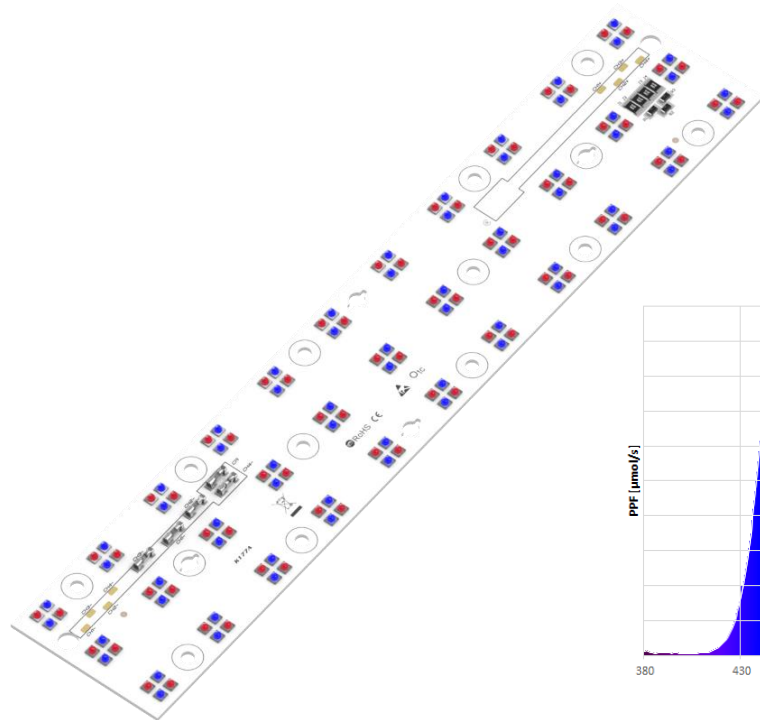


GROWEMITY 3x11 FFBB - K177

| | Input Current [mA] | Forward Voltage [V] | Power [W] | Total 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 FFBB - K177 | 350 | 61,1 | 21,4 | 108,6 | FAR RED | 727 | 8745 | 5,28 | 0,25 | 165,66 | 1,53 | LO-278053-FFBB-C1000-K177 |
| | | 61,1 | 21,4 | | FAR RED | 727 | 8745 | 5,28 | 0,25 | | | |
| | | 94,1 | 32,9 | | DEEP BLUE | 455 | 20955 | 77,55 | 2,36 | | | |
| | | 94,1 | 32,9 | | DEEP BLUE | 455 | 20955 | 77,55 | 2,36 | | | |
| | 500 | 64,4 | 32,2 | 160,1 | FAR RED | 727 | 12330 | 7,44 | 0,23 | 230,48 | 1,44 | LO-278053-FFBB-C1000-K177 |
| | | 64,4 | 32,2 | | FAR RED | 727 | 12330 | 7,44 | 0,23 | | | |
| | | 95,7 | 47,9 | | DEEP BLUE | 455 | 29127 | 107,79 | 2,25 | | | |
| | | 95,7 | 47,9 | | DEEP BLUE | 455 | 29127 | 107,79 | 2,25 | | | |
| | 700 | 68,3 | 47,8 | 232,8 | FAR RED | 727 | 16703 | 10,08 | 0,21 | 286,94 | 1,23 | LO-278053-FFBB-C1000-K177 |
| | | 68,3 | 47,8 | | FAR RED | 727 | 16703 | 10,08 | 0,21 | | | |
| | | 98,0 | 68,6 | | DEEP BLUE | 455 | 36043 | 133,39 | 1,94 | | | |
| | | 98,0 | 68,6 | | DEEP BLUE | 455 | 36043 | 133,39 | 1,94 | | | |
| | 800 | 69,6 | 55,7 | 269,3 | FAR RED | 727 | 19064 | 11,51 | 0,21 | 317,71 | 1,18 | LO-278053-FFBB-C1000-K177 |
| | | 69,6 | 55,7 | | FAR RED | 727 | 19064 | 11,51 | 0,21 | | | |
| | | 98,7 | 78,9 | | DEEP BLUE | 455 | 39815 | 147,35 | 1,87 | | | |
| | | 98,7 | 78,9 | | 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%.



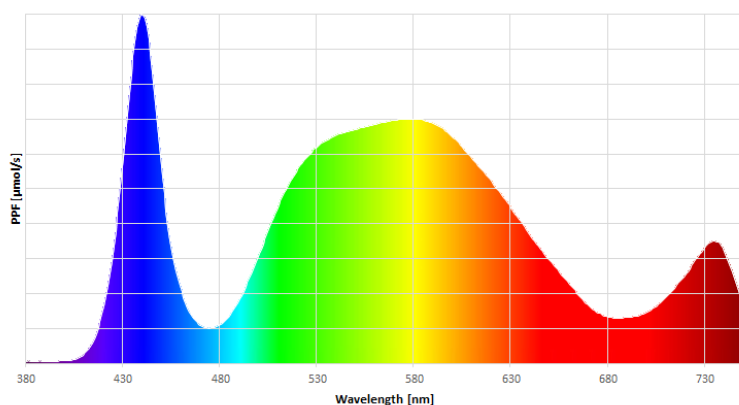
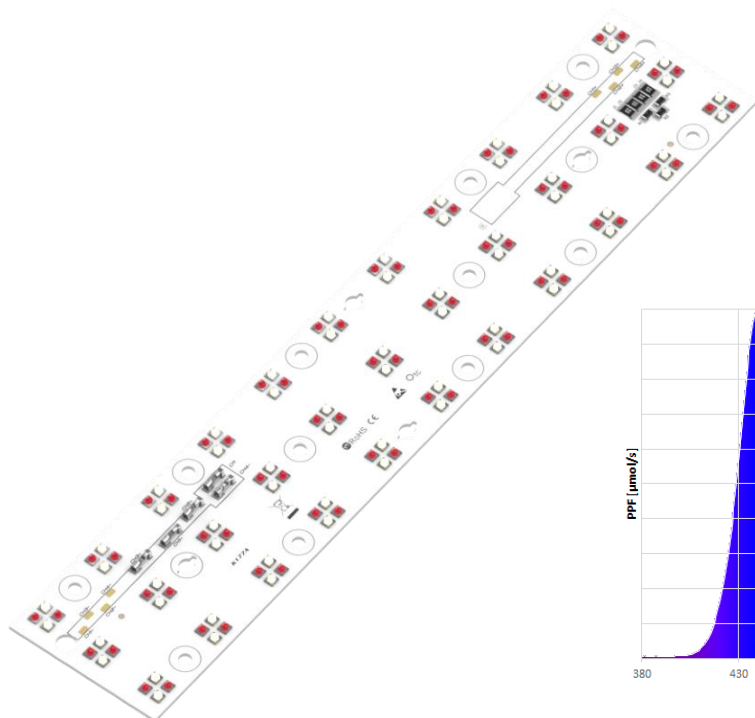
GROWEMITY 3x11 FFWW - K177

| | Input Current [mA] | Forward Voltage [V] | Power [W] | Total 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 - K177 | 350 | 61,1 | 21,4 | 106,3 | FAR RED | 727 | 8745 | 5,28 | 0,25 | 297,33 | 2,80 | L0-278053-FFWW-C1000-K177 |
| | | 61,1 | 21,4 | | FAR RED | 727 | 8745 | 5,28 | 0,25 | | | |
| | | 90,8 | 31,8 | | WHITE | 5000 | 4881 | 64,68 | 2,04 | | | |
| | | 90,8 | 31,8 | | WHITE | 5000 | 4881 | 64,68 | 2,04 | | | |
| | 500 | 64,4 | 32,2 | 158,4 | FAR RED | 727 | 12330 | 7,44 | 0,23 | 409,84 | 2,59 | L0-278053-FFWW-C1000-K177 |
| | | 64,4 | 32,2 | | FAR RED | 727 | 12330 | 7,44 | 0,23 | | | |
| | | 94,1 | 47,0 | | WHITE | 5000 | 6687 | 86,46 | 1,84 | | | |
| | | 94,1 | 47,0 | | WHITE | 5000 | 6687 | 86,46 | 1,84 | | | |
| | 700 | 68,3 | 47,8 | 231,9 | FAR RED | 727 | 16703 | 10,08 | 0,21 | 512,36 | 2,21 | L0-278053-FFWW-C1000-K177 |
| | | 68,3 | 47,8 | | FAR RED | 727 | 16703 | 10,08 | 0,21 | | | |
| | | 97,4 | 68,1 | | WHITE | 5000 | 8785 | 112,20 | 1,65 | | | |
| | | 97,4 | 68,1 | | WHITE | 5000 | 8785 | 112,20 | 1,65 | | | |
| | 800 | 69,6 | 55,7 | 268,8 | FAR RED | 727 | 19064 | 11,51 | 0,21 | 565,46 | 2,10 | L0-278053-FFWW-C1000-K177 |
| | | 69,6 | 55,7 | | FAR RED | 727 | 19064 | 11,51 | 0,21 | | | |
| | | 98,3 | 78,7 | | WHITE | 5000 | 9664 | 123,42 | 1,57 | | | |
| | | 98,3 | 78,7 | | 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%.



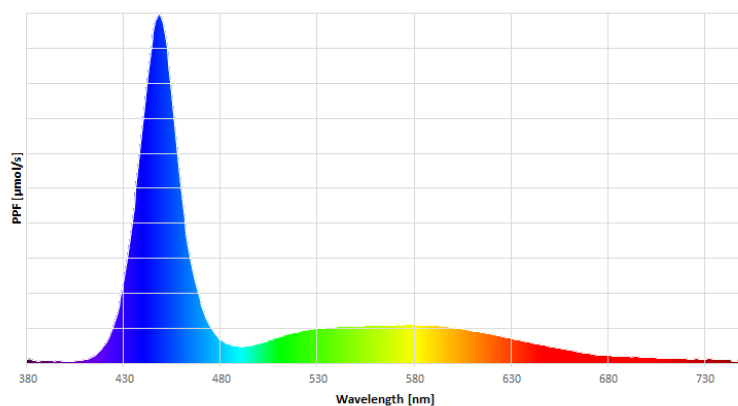
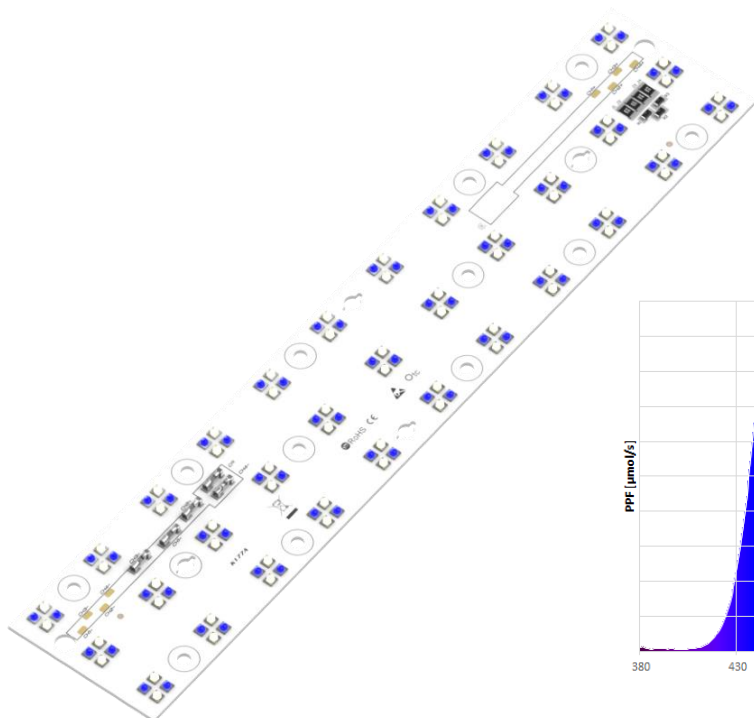
GROWEMITY 3x11 BBWW - K177

| | Input Current [mA] | Forward Voltage [V] | Power [W] | Total 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 - K177 | 350 | 94,1 | 32,9 | 129,4 | DEEP BLUE | 455 | 20955 | 77,55 | 2,36 | 284,46 | 2,20 | LO-278053-BBWW-C1000-K177 |
| | | 94,1 | 32,9 | | DEEP BLUE | 455 | 20955 | 77,55 | 2,36 | | | |
| | | 90,8 | 31,8 | | WHITE | 5000 | 4881 | 64,68 | 2,04 | | | |
| | | 90,8 | 31,8 | | WHITE | 5000 | 4881 | 64,68 | 2,04 | | | |
| | 500 | 95,7 | 47,9 | 189,8 | DEEP BLUE | 455 | 29127 | 107,79 | 2,25 | 388,51 | 2,05 | LO-278053-BBWW-C1000-K177 |
| | | 95,7 | 47,9 | | DEEP BLUE | 455 | 29127 | 107,79 | 2,25 | | | |
| | | 94,1 | 47,0 | | WHITE | 5000 | 6687 | 86,46 | 1,84 | | | |
| | | 94,1 | 47,0 | | WHITE | 5000 | 6687 | 86,46 | 1,84 | | | |
| | 700 | 98,0 | 68,6 | 273,5 | DEEP BLUE | 455 | 36043 | 133,39 | 1,94 | 491,17 | 1,80 | LO-278053-BBWW-C1000-K177 |
| | | 98,0 | 68,6 | | DEEP BLUE | 455 | 36043 | 133,39 | 1,94 | | | |
| | | 97,4 | 68,1 | | WHITE | 5000 | 8785 | 112,20 | 1,65 | | | |
| | | 97,4 | 0,0 | | WHITE | 5000 | 8785 | 112,20 | 1,65 | | | |
| | 800 | 98,7 | 78,9 | 315,2 | DEEP BLUE | 455 | 39815 | 147,35 | 1,87 | 541,53 | 1,72 | LO-278053-BBWW-C1000-K177 |
| | | 98,7 | 78,9 | | DEEP BLUE | 455 | 39815 | 147,35 | 1,87 | | | |
| | | 98,3 | 78,7 | | WHITE | 5000 | 9664 | 123,42 | 1,57 | | | |
| | | 98,3 | 78,7 | | 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%.

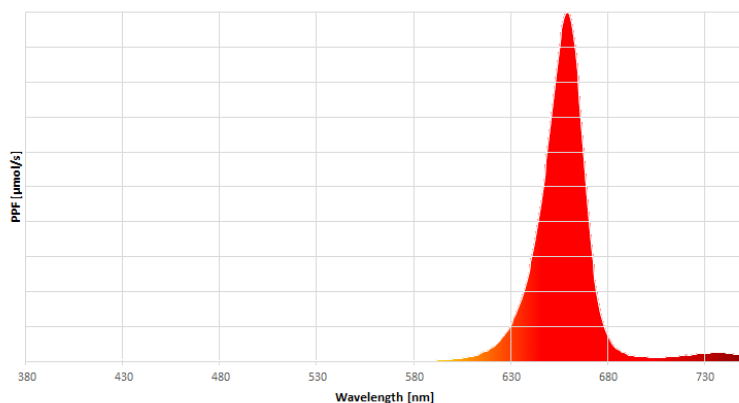
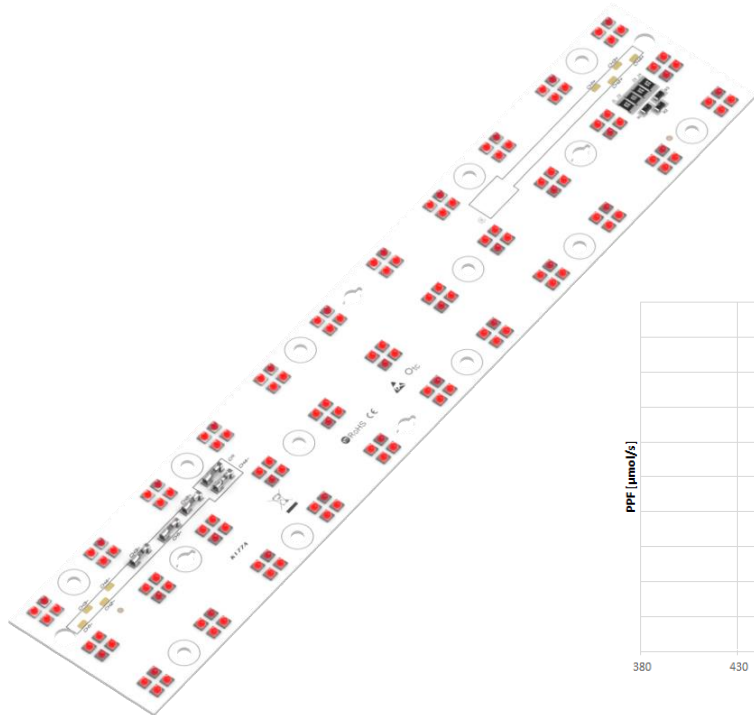


GROWEMITY 3x11 RRRF - K177

| | Input Current [mA] | Forward Voltage [V] | Power [W] | Total 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 - K177 | 350 | 71,0 | 24,8 | 95,9 | RED | 657 | 14025 | 76,07 | 3,06 | 233,48 | 2,44 | LO-278053-RRRF-C1000-K177 |
| | | 71,0 | 24,8 | | RED | 657 | 14025 | 76,07 | 3,06 | | | |
| | | 71,0 | 24,8 | | RED | 657 | 14025 | 76,07 | 3,06 | | | |
| | | 61,1 | 21,4 | | FAR RED | 727 | 8745 | 5,28 | 0,25 | | | |
| | 500 | 74,3 | 37,1 | 143,6 | RED | 657 | 19775 | 107,25 | 2,89 | 329,20 | 2,29 | LO-278053-RRRF-C1000-K177 |
| | | 74,3 | 37,1 | | RED | 657 | 19775 | 107,25 | 2,89 | | | |
| | | 74,3 | 37,1 | | RED | 657 | 19775 | 107,25 | 2,89 | | | |
| | | 64,4 | 32,2 | | FAR RED | 727 | 12330 | 7,44 | 0,23 | | | |
| | 700 | 79,2 | 55,4 | 214,1 | RED | 657 | 26788 | 145,28 | 2,62 | 445,94 | 2,08 | LO-278053-RRRF-C1000-K177 |
| | | 79,2 | 55,4 | | RED | 657 | 26788 | 145,28 | 2,62 | | | |
| | | 79,2 | 55,4 | | RED | 657 | 26788 | 145,28 | 2,62 | | | |
| | | 68,3 | 47,8 | | FAR RED | 727 | 16703 | 10,08 | 0,21 | | | |
| | 800 | 81,8 | 65,5 | 252,1 | RED | 657 | 30575 | 165,82 | 2,53 | 508,98 | 2,02 | LO-278053-RRRF-C1000-K177 |
| | | 81,8 | 65,5 | | RED | 657 | 30575 | 165,82 | 2,53 | | | |
| | | 81,8 | 65,5 | | RED | 657 | 30575 | 165,82 | 2,53 | | | |
| | | 69,6 | 55,7 | | 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%.

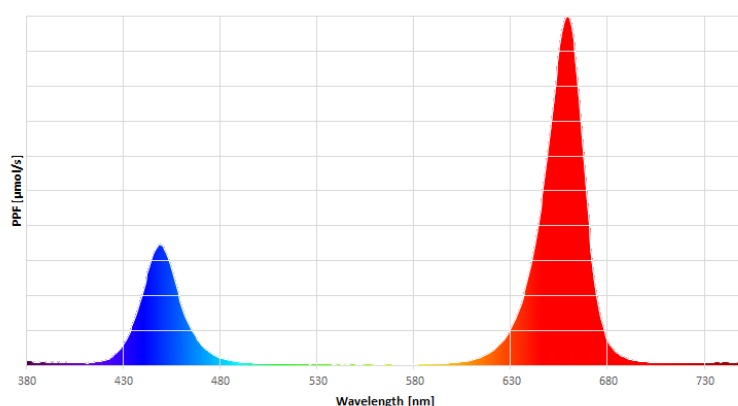
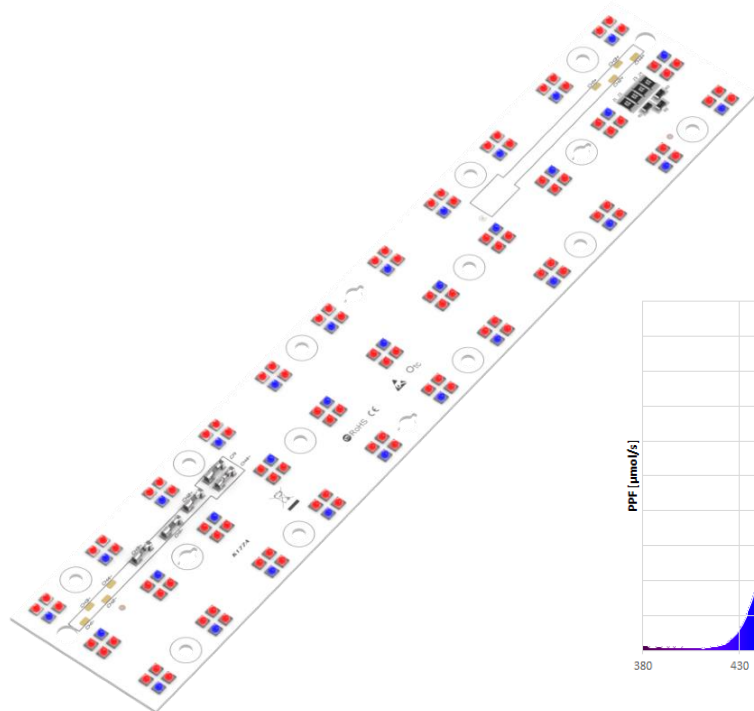


GROWEMITY 3x11 RRRB - K177

| | Input Current [mA] | Forward Voltage [V] | Power [W] | Total 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 - K177 | 350 | 71,0 | 24,8 | 107,4 | RED | 657 | 14025 | 76,07 | 3,06 | 305,75 | 2,85 | L0-278053-RRRB-C1000-K177 |
| | | 71,0 | 24,8 | | RED | 657 | 14025 | 76,07 | 3,06 | | | |
| | | 71,0 | 24,8 | | RED | 657 | 14025 | 76,07 | 3,06 | | | |
| | | 94,1 | 32,9 | | DEEP BLUE | 455 | 20955 | 77,55 | 2,36 | | | |
| | 500 | 74,3 | 37,1 | 159,2 | RED | 657 | 19775 | 107,25 | 2,89 | 429,55 | 2,70 | L0-278053-RRRB-C1000-K177 |
| | | 74,3 | 37,1 | | RED | 657 | 19775 | 107,25 | 2,89 | | | |
| | | 74,3 | 37,1 | | RED | 657 | 19775 | 107,25 | 2,89 | | | |
| | | 95,7 | 47,9 | | DEEP BLUE | 455 | 29127 | 107,79 | 2,25 | | | |
| | 700 | 79,2 | 55,4 | 234,9 | RED | 657 | 26788 | 145,28 | 2,62 | 569,24 | 2,42 | L0-278053-RRRB-C1000-K177 |
| | | 79,2 | 55,4 | | RED | 657 | 26788 | 145,28 | 2,62 | | | |
| | | 79,2 | 55,4 | | RED | 657 | 26788 | 145,28 | 2,62 | | | |
| | | 98,0 | 68,6 | | DEEP BLUE | 455 | 36043 | 133,39 | 1,94 | | | |
| | 800 | 81,8 | 65,5 | 275,4 | RED | 657 | 30575 | 165,82 | 2,53 | 644,81 | 2,34 | L0-278053-RRRB-C1000-K177 |
| | | 81,8 | 65,5 | | RED | 657 | 30575 | 165,82 | 2,53 | | | |
| | | 81,8 | 65,5 | | RED | 657 | 30575 | 165,82 | 2,53 | | | |
| | | 98,7 | 78,9 | | 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%.



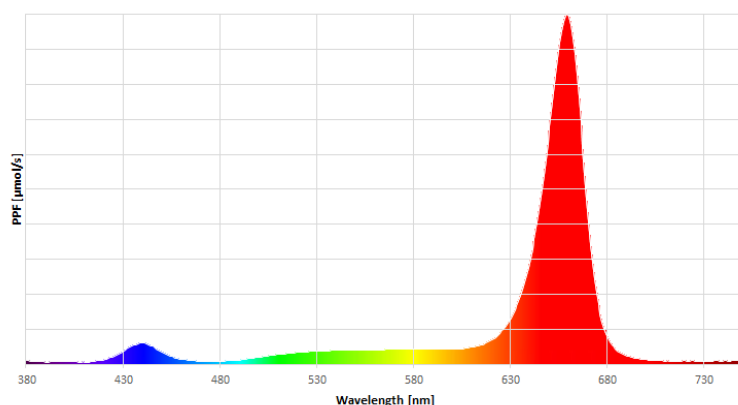
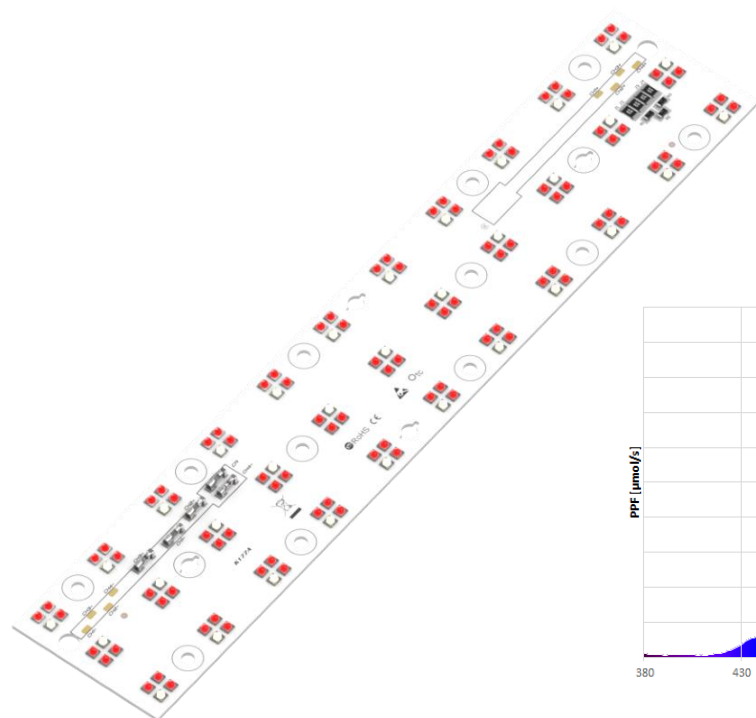
GROWEMITY 3x11 RRRW - K177

| | Input Current [mA] | Forward Voltage [V] | Power [W] | Total 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 - K177 | 350 | 71,0 | 24,8 | 106,3 | RED | 657 | 14025 | 76,07 | 3,06 | 297,33 | 2,80 | LO-278053-RRRW-C1000-K177 |
| | | 71,0 | 24,8 | | RED | 657 | 14025 | 76,07 | 3,06 | | | |
| | | 71,0 | 24,8 | | RED | 657 | 14025 | 76,07 | 3,06 | | | |
| | | 90,8 | 31,8 | | WHITE | 5000 | 4881 | 64,68 | 2,04 | | | |
| | 500 | 74,3 | 37,1 | 158,4 | RED | 657 | 19775 | 107,25 | 2,89 | 409,84 | 2,59 | LO-278053-RRRW-C1000-K177 |
| | | 74,3 | 37,1 | | RED | 657 | 19775 | 107,25 | 2,89 | | | |
| | | 74,3 | 37,1 | | RED | 657 | 19775 | 107,25 | 2,89 | | | |
| | | 94,1 | 47,0 | | WHITE | 5000 | 6687 | 86,46 | 1,84 | | | |
| | 700 | 79,2 | 55,4 | 234,5 | RED | 657 | 26788 | 145,28 | 2,62 | 512,36 | 2,19 | LO-278053-RRRW-C1000-K177 |
| | | 79,2 | 55,4 | | RED | 657 | 26788 | 145,28 | 2,62 | | | |
| | | 79,2 | 55,4 | | RED | 657 | 26788 | 145,28 | 2,62 | | | |
| | | 97,4 | 68,1 | | WHITE | 5000 | 8785 | 112,20 | 1,65 | | | |
| | 800 | 81,8 | 65,5 | 275,1 | RED | 657 | 30575 | 165,82 | 2,53 | 565,46 | 2,06 | LO-278053-RRRW-C1000-K177 |
| | | 81,8 | 65,5 | | RED | 657 | 30575 | 165,82 | 2,53 | | | |
| | | 81,8 | 65,5 | | RED | 657 | 30575 | 165,82 | 2,53 | | | |
| | | 98,3 | 78,7 | | 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%.

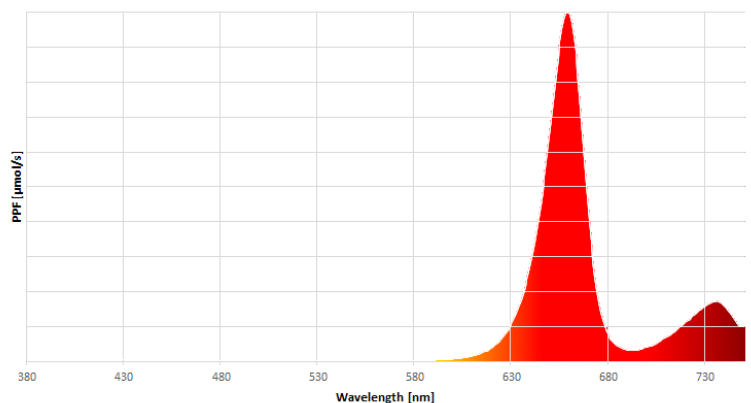
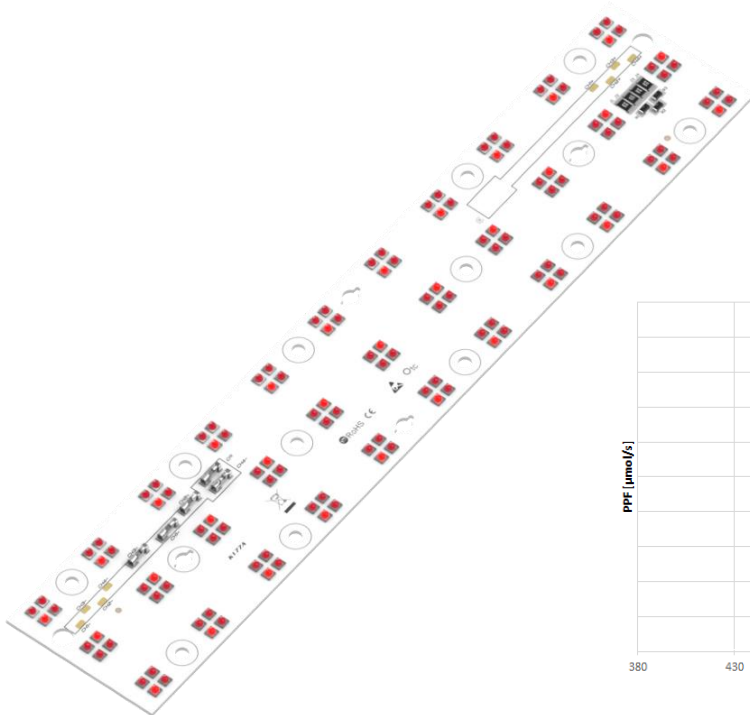


GROWEMITY 3X11 RFFF - K177

| | Input Current [mA] | Forward Voltage [V] | Power [W] | Total 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 - K177 | 350 | 71,0 | 24,8 | 88,9 | RED | 657 | 14025 | 76,07 | 3,06 | 91,91 | 1,03 | LO-278053-RFFF-C1000-K177 |
| | | 61,1 | 21,4 | | FAR RED | 727 | 8745 | 5,28 | 0,25 | | | |
| | | 61,1 | 21,4 | | FAR RED | 727 | 8745 | 5,28 | 0,25 | | | |
| | | 61,1 | 21,4 | | FAR RED | 727 | 8745 | 5,28 | 0,25 | | | |
| | 500 | 74,3 | 37,1 | 133,7 | RED | 657 | 19775 | 107,25 | 2,89 | 129,59 | 0,97 | LO-278053-RFFF-C1000-K177 |
| | | 64,4 | 32,2 | | FAR RED | 727 | 12330 | 7,44 | 0,23 | | | |
| | | 64,4 | 32,2 | | FAR RED | 727 | 12330 | 7,44 | 0,23 | | | |
| | | 64,4 | 32,2 | | FAR RED | 727 | 12330 | 7,44 | 0,23 | | | |
| | 700 | 79,2 | 55,4 | 198,9 | RED | 657 | 26788 | 145,28 | 2,62 | 175,54 | 0,88 | LO-278053-RFFF-C1000-K177 |
| | | 68,3 | 47,8 | | FAR RED | 727 | 16703 | 10,08 | 0,21 | | | |
| | | 68,3 | 47,8 | | FAR RED | 727 | 16703 | 10,08 | 0,21 | | | |
| | | 68,3 | 47,8 | | FAR RED | 727 | 16703 | 10,08 | 0,21 | | | |
| | 800 | 81,8 | 65,5 | 232,6 | RED | 657 | 30575 | 165,82 | 2,53 | 200,35 | 0,86 | LO-278053-RFFF-C1000-K177 |
| | | 69,6 | 55,7 | | FAR RED | 727 | 19064 | 11,51 | 0,21 | | | |
| | | 69,6 | 55,7 | | FAR RED | 727 | 19064 | 11,51 | 0,21 | | | |
| | | 69,6 | 55,7 | | 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%.

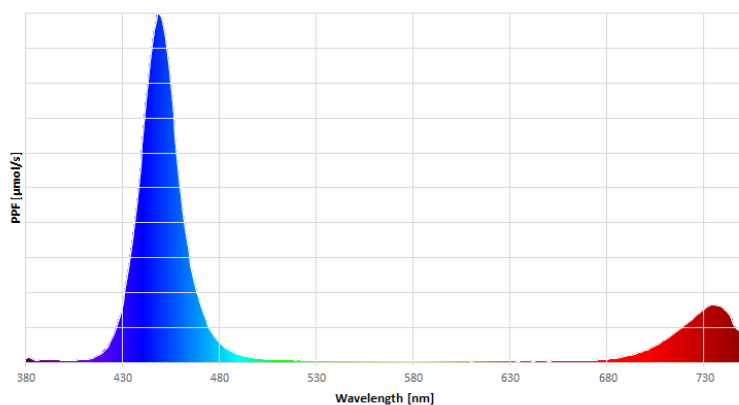
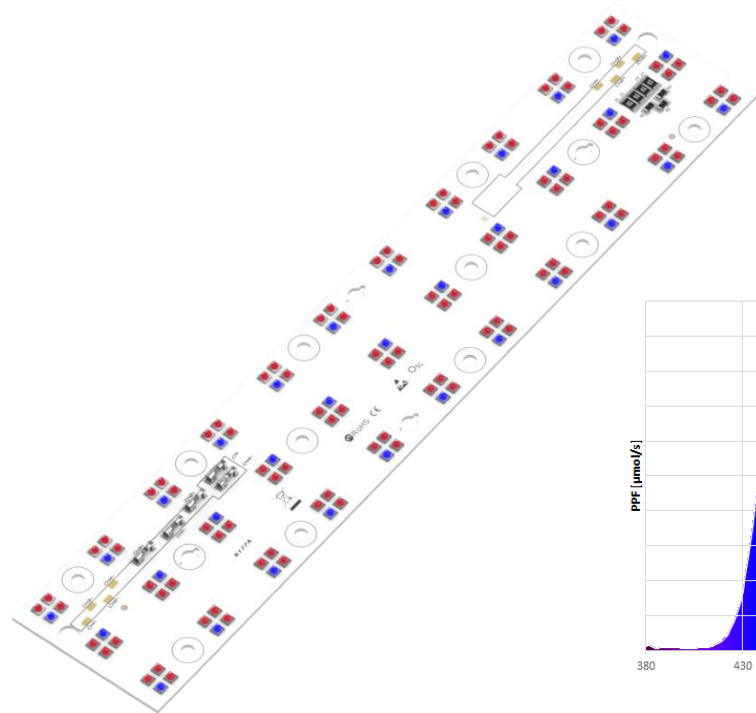


GROWEMITY 3x11 FFFB - K177

| | Input Current [mA] | Forward Voltage [V] | Power [W] | Total 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 - K177 | 350 | 61,1 | 21,4 | 97,0 | FAR RED | 727 | 8745 | 5,28 | 0,25 | 93,39 | 0,96 | LO-278053-FFFB-C1000-K177 |
| | | 61,1 | 21,4 | | FAR RED | 727 | 8745 | 5,28 | 0,25 | | | |
| | | 61,1 | 21,4 | | FAR RED | 727 | 8745 | 5,28 | 0,25 | | | |
| | | 94,1 | 32,9 | | DEEP BLUE | 455 | 20955 | 77,55 | 2,36 | | | |
| | 500 | 64,4 | 32,2 | 144,4 | FAR RED | 727 | 12330 | 7,44 | 0,23 | 130,13 | 0,90 | LO-278053-FFFB-C1000-K177 |
| | | 64,4 | 32,2 | | FAR RED | 727 | 12330 | 7,44 | 0,23 | | | |
| | | 64,4 | 32,2 | | FAR RED | 727 | 12330 | 7,44 | 0,23 | | | |
| | | 95,7 | 47,9 | | DEEP BLUE | 455 | 29127 | 107,79 | 2,25 | | | |
| | 700 | 68,3 | 47,8 | 212,1 | FAR RED | 727 | 16703 | 10,08 | 0,21 | 163,64 | 0,77 | LO-278053-FFFB-C1000-K177 |
| | | 68,3 | 47,8 | | FAR RED | 727 | 16703 | 10,08 | 0,21 | | | |
| | | 68,3 | 47,8 | | FAR RED | 727 | 16703 | 10,08 | 0,21 | | | |
| | | 98,0 | 68,6 | | DEEP BLUE | 455 | 36043 | 133,39 | 1,94 | | | |
| | 800 | 69,6 | 55,7 | 246,0 | FAR RED | 727 | 19064 | 11,51 | 0,21 | 181,88 | 0,74 | LO-278053-FFFB-C1000-K177 |
| | | 69,6 | 55,7 | | FAR RED | 727 | 19064 | 11,51 | 0,21 | | | |
| | | 69,6 | 55,7 | | FAR RED | 727 | 19064 | 11,51 | 0,21 | | | |
| | | 98,7 | 78,9 | | 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%.



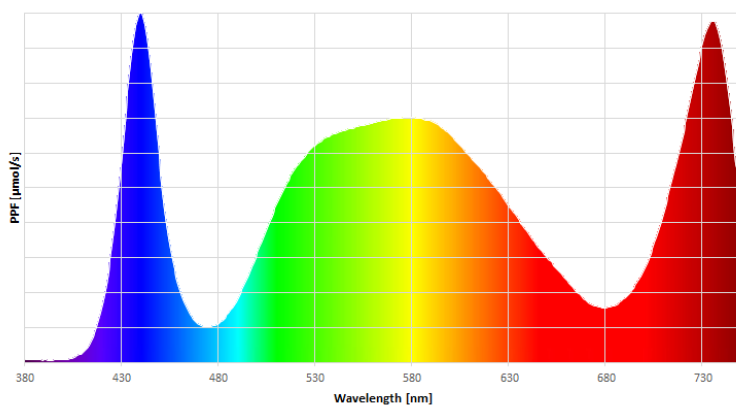
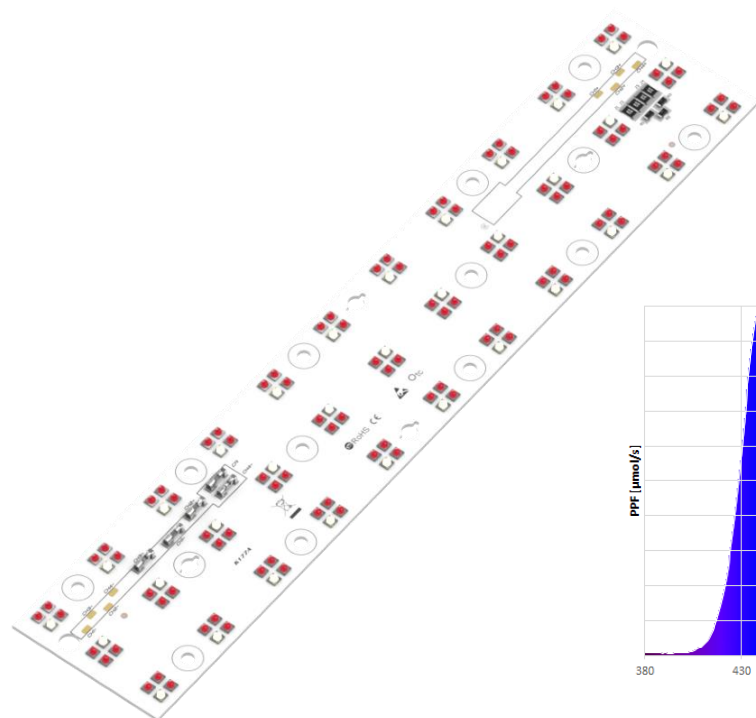
GROWEMITY 3x11 FFFW - K177

| | Input Current [mA] | Forward Voltage [V] | Power [W] | Total 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 - K177 | 350 | 61,1 | 21,4 | 95,9 | FAR RED | 727 | 8745 | 5,28 | 0,25 | 80,52 | 0,84 | L0-278053-FFFW-C1000-K177 |
| | | 61,1 | 21,4 | | FAR RED | 727 | 8745 | 5,28 | 0,25 | | | |
| | | 61,1 | 21,4 | | FAR RED | 727 | 8745 | 5,28 | 0,25 | | | |
| | | 90,8 | 31,8 | | WHITE | 5000 | 4881 | 64,68 | 2,04 | | | |
| | 500 | 64,4 | 32,2 | 143,6 | FAR RED | 727 | 12330 | 7,44 | 0,23 | 108,79 | 0,76 | L0-278053-FFFW-C1000-K177 |
| | | 64,4 | 32,2 | | FAR RED | 727 | 12330 | 7,44 | 0,23 | | | |
| | | 64,4 | 32,2 | | FAR RED | 727 | 12330 | 7,44 | 0,23 | | | |
| | | 94,1 | 47,0 | | WHITE | 5000 | 6687 | 86,46 | 1,84 | | | |
| | 700 | 68,3 | 47,8 | 211,6 | FAR RED | 727 | 16703 | 10,08 | 0,21 | 142,45 | 0,67 | L0-278053-FFFW-C1000-K177 |
| | | 68,3 | 47,8 | | FAR RED | 727 | 16703 | 10,08 | 0,21 | | | |
| | | 68,3 | 47,8 | | FAR RED | 727 | 16703 | 10,08 | 0,21 | | | |
| | | 97,4 | 68,1 | | WHITE | 5000 | 8785 | 112,20 | 1,65 | | | |
| | 800 | 69,6 | 55,7 | 245,8 | FAR RED | 727 | 19064 | 11,51 | 0,21 | 157,95 | 0,64 | L0-278053-FFFW-C1000-K177 |
| | | 69,6 | 55,7 | | FAR RED | 727 | 19064 | 11,51 | 0,21 | | | |
| | | 69,6 | 55,7 | | FAR RED | 727 | 19064 | 11,51 | 0,21 | | | |
| | | 98,3 | 78,7 | | 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%.

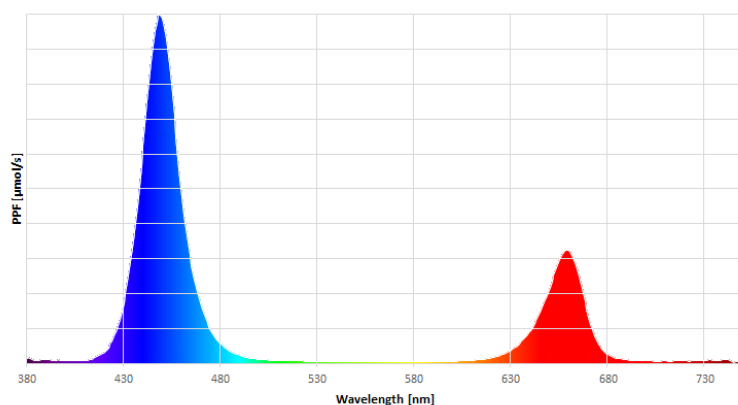
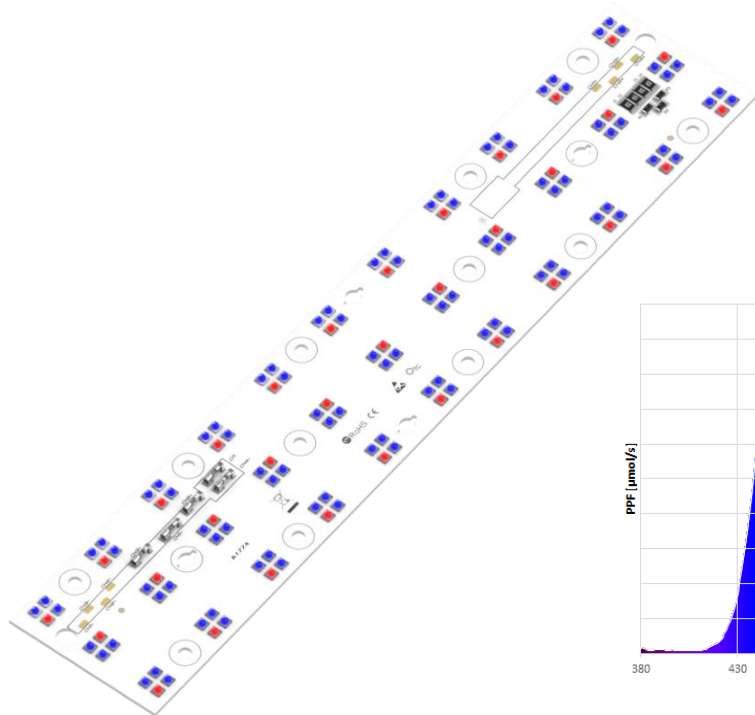


GROWEMITY 3x11 RBBB - K177

| | Input Current [mA] | Forward Voltage [V] | Power [W] | Total 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 - K177 | 350 | 71,0 | 24,8 | 123,6 | RED | 657 | 14025 | 76,07 | 3,06 | 308,72 | 2,50 | L0-278053-RBBB-C1000-K177 |
| | | 94,1 | 32,9 | | DEEP BLUE | 455 | 20955 | 77,55 | 2,36 | | | |
| | | 94,1 | 32,9 | | DEEP BLUE | 455 | 20955 | 77,55 | 2,36 | | | |
| | | 94,1 | 32,9 | | DEEP BLUE | 455 | 20955 | 77,55 | 2,36 | | | |
| | 500 | 74,3 | 37,1 | 180,7 | RED | 657 | 19775 | 107,25 | 2,89 | 430,64 | 2,38 | L0-278053-RBBB-C1000-K177 |
| | | 95,7 | 47,9 | | DEEP BLUE | 455 | 29127 | 107,79 | 2,25 | | | |
| | | 95,7 | 47,9 | | DEEP BLUE | 455 | 29127 | 107,79 | 2,25 | | | |
| | | 95,7 | 47,9 | | DEEP BLUE | 455 | 29127 | 107,79 | 2,25 | | | |
| | 700 | 79,2 | 55,4 | 261,3 | RED | 657 | 26788 | 145,28 | 2,62 | 545,44 | 2,09 | L0-278053-RBBB-C1000-K177 |
| | | 98,0 | 68,6 | | DEEP BLUE | 455 | 36043 | 133,39 | 1,94 | | | |
| | | 98,0 | 68,6 | | DEEP BLUE | 455 | 36043 | 133,39 | 1,94 | | | |
| | | 98,0 | 68,6 | | DEEP BLUE | 455 | 36043 | 133,39 | 1,94 | | | |
| | 800 | 81,8 | 65,5 | 302,3 | RED | 657 | 30575 | 165,82 | 2,53 | 607,86 | 2,01 | L0-278053-RBBB-C1000-K177 |
| | | 98,7 | 78,9 | | DEEP BLUE | 455 | 39815 | 147,35 | 1,87 | | | |
| | | 98,7 | 78,9 | | DEEP BLUE | 455 | 39815 | 147,35 | 1,87 | | | |
| | | 98,7 | 78,9 | | 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%.

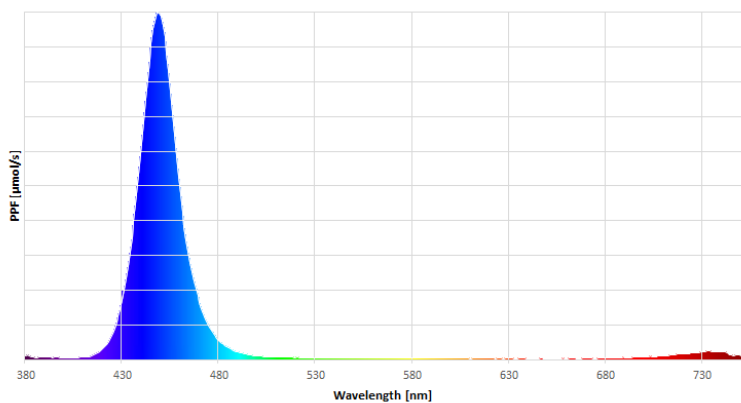
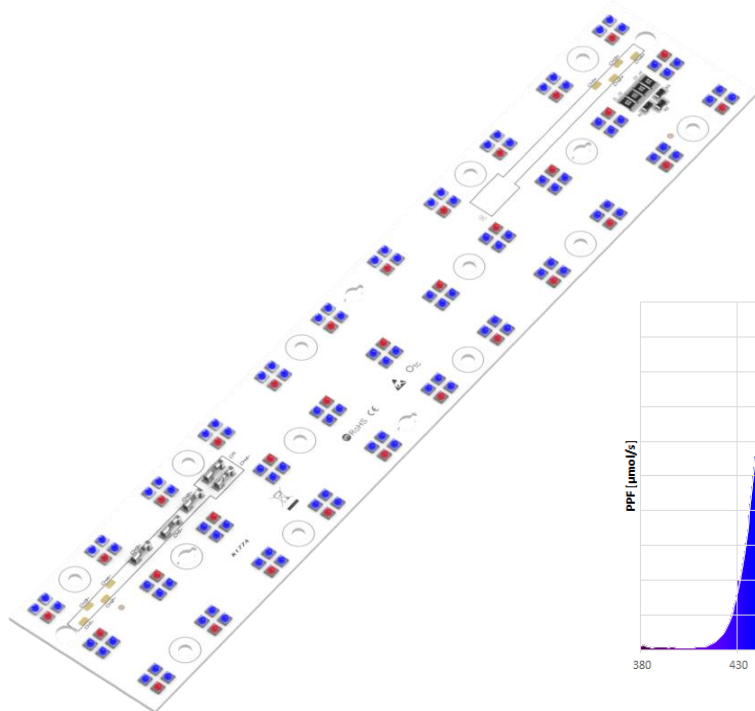


GROWEMITY 3x11 FB8B - K177

| | Input Current [mA] | Forward Voltage [V] | Power [W] | Total 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 - K177 | 350 | 61,1 | 21,4 | 120,1 | FAR RED | 727 | 8745 | 5,28 | 0,25 | 237,93 | 1,98 | LO-278053-FB8B-C1000-K177 |
| | | 94,1 | 32,9 | | DEEP BLUE | 455 | 20955 | 77,55 | 2,36 | | | |
| | | 94,1 | 32,9 | | DEEP BLUE | 455 | 20955 | 77,55 | 2,36 | | | |
| | | 94,1 | 32,9 | | DEEP BLUE | 455 | 20955 | 77,55 | 2,36 | | | |
| | 500 | 64,4 | 32,2 | 175,7 | FAR RED | 727 | 12330 | 7,44 | 0,23 | 330,83 | 1,88 | LO-278053-FB8B-C1000-K177 |
| | | 95,7 | 47,9 | | DEEP BLUE | 455 | 29127 | 107,79 | 2,25 | | | |
| | | 95,7 | 47,9 | | DEEP BLUE | 455 | 29127 | 107,79 | 2,25 | | | |
| | | 95,7 | 47,9 | | DEEP BLUE | 455 | 29127 | 107,79 | 2,25 | | | |
| | 700 | 68,3 | 47,8 | 253,6 | FAR RED | 727 | 16703 | 10,08 | 0,21 | 410,24 | 1,62 | LO-278053-FB8B-C1000-K177 |
| | | 98,0 | 68,6 | | DEEP BLUE | 455 | 36043 | 133,39 | 1,94 | | | |
| | | 98,0 | 68,6 | | DEEP BLUE | 455 | 36043 | 133,39 | 1,94 | | | |
| | | 98,0 | 68,6 | | DEEP BLUE | 455 | 36043 | 133,39 | 1,94 | | | |
| | 800 | 69,6 | 55,7 | 292,5 | FAR RED | 727 | 19064 | 11,51 | 0,21 | 453,55 | 1,55 | LO-278053-FB8B-C1000-K177 |
| | | 98,7 | 78,9 | | DEEP BLUE | 455 | 39815 | 147,35 | 1,87 | | | |
| | | 98,7 | 78,9 | | DEEP BLUE | 455 | 39815 | 147,35 | 1,87 | | | |
| | | 98,7 | 78,9 | | 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%.



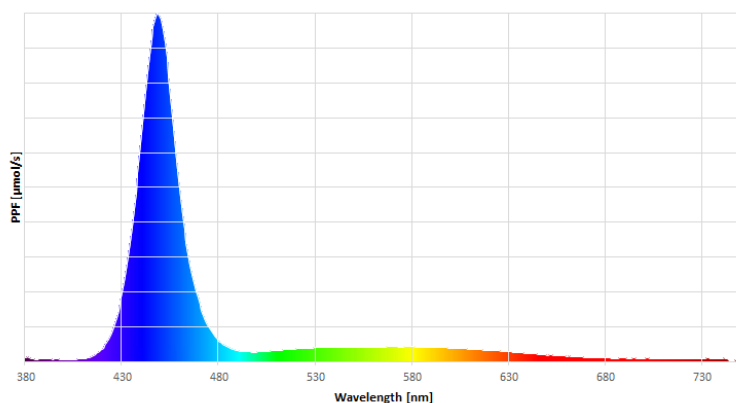
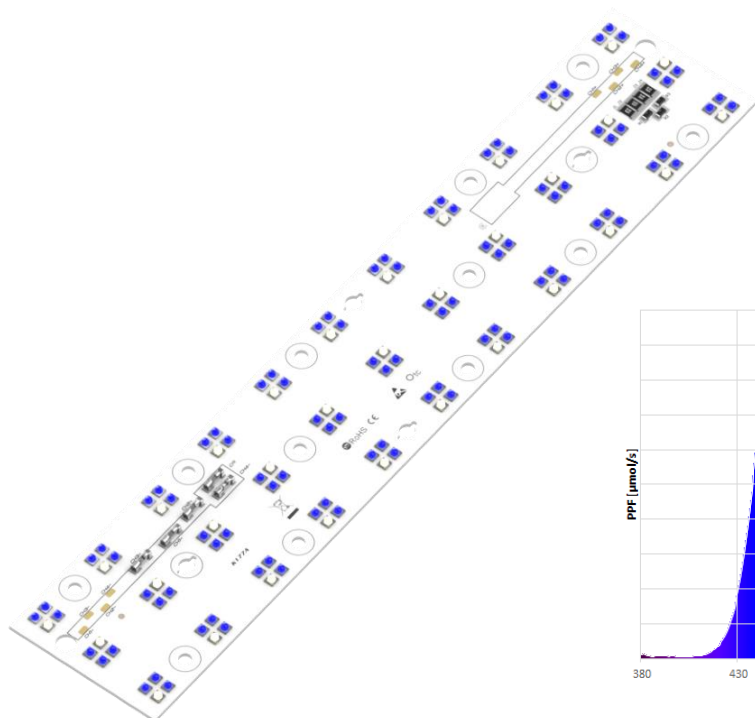
GROWEMITY 3x11 BBBW - K177

| | Input Current [mA] | Forward Voltage [V] | Power [W] | Total 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 - K177 | 350 | 94,1 | 32,9 | 130,5 | DEEP BLUE | 455 | 20955 | 77,55 | 2,36 | 297,33 | 2,28 | LO-278053-BBBW-C1000-K177 |
| | | 94,1 | 32,9 | | DEEP BLUE | 455 | 20955 | 77,55 | 2,36 | | | |
| | | 94,1 | 32,9 | | DEEP BLUE | 455 | 20955 | 77,55 | 2,36 | | | |
| | | 90,8 | 31,8 | | WHITE | 5000 | 4881 | 64,68 | 2,04 | | | |
| | 500 | 95,7 | 47,9 | 190,6 | DEEP BLUE | 455 | 29127 | 107,79 | 2,25 | 409,84 | 2,15 | LO-278053-BBBW-C1000-K177 |
| | | 95,7 | 47,9 | | DEEP BLUE | 455 | 29127 | 107,79 | 2,25 | | | |
| | | 95,7 | 47,9 | | DEEP BLUE | 455 | 29127 | 107,79 | 2,25 | | | |
| | | 94,1 | 47,0 | | WHITE | 5000 | 6687 | 86,46 | 1,84 | | | |
| | 700 | 98,0 | 68,6 | 274,0 | DEEP BLUE | 455 | 36043 | 133,39 | 1,94 | 512,36 | 1,87 | LO-278053-BBBW-C1000-K177 |
| | | 98,0 | 68,6 | | DEEP BLUE | 455 | 36043 | 133,39 | 1,94 | | | |
| | | 98,0 | 68,6 | | DEEP BLUE | 455 | 36043 | 133,39 | 1,94 | | | |
| | | 97,4 | 68,1 | | WHITE | 5000 | 8785 | 112,20 | 1,65 | | | |
| | 800 | 98,7 | 78,9 | 315,5 | DEEP BLUE | 455 | 39815 | 147,35 | 1,87 | 565,46 | 1,79 | LO-278053-BBBW-C1000-K177 |
| | | 98,7 | 78,9 | | DEEP BLUE | 455 | 39815 | 147,35 | 1,87 | | | |
| | | 98,7 | 78,9 | | DEEP BLUE | 455 | 39815 | 147,35 | 1,87 | | | |
| | | 98,3 | 78,7 | | 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%.



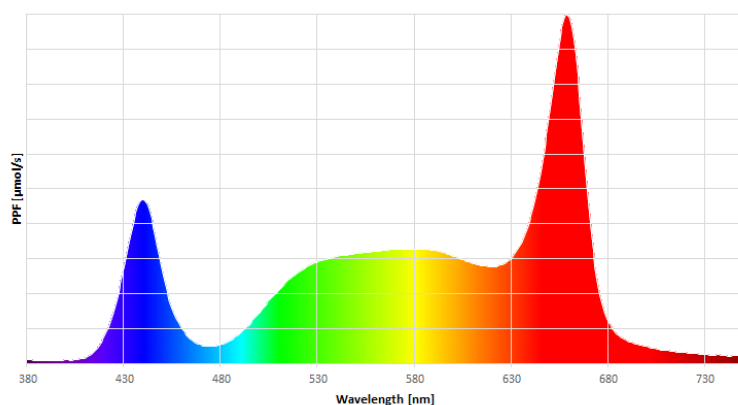
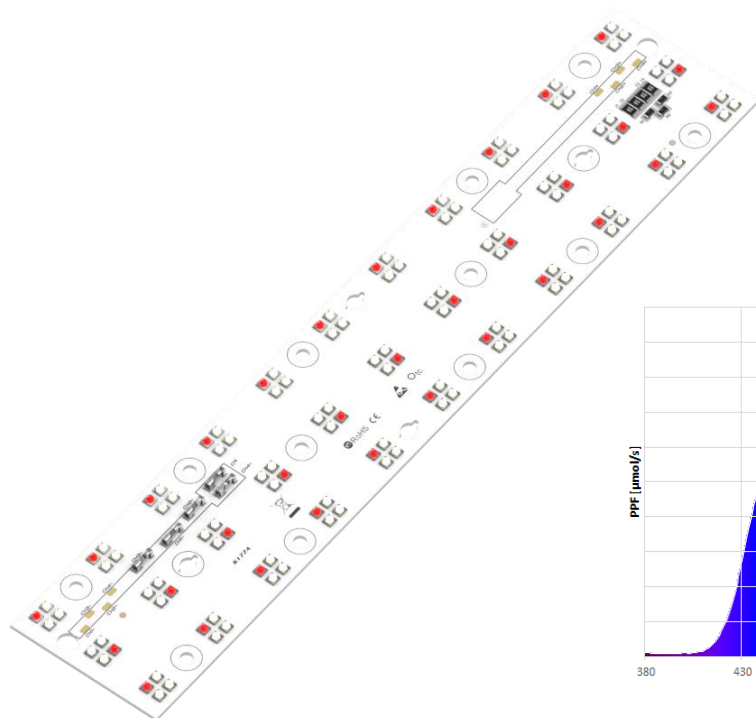
GROWEMITY 3x11 RWWW - K177

| | Input Current [mA] | Forward Voltage [V] | Power [W] | Total 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 - K177 | 350 | 71,0 | 24,8 | 120,1 | RED | 657 | 14025 | 76,07 | 3,06 | 270,11 | 2,25 | LO-278053-RWWW-C1000-K177 |
| | | 90,8 | 31,8 | | WHITE | 5000 | 4881 | 64,68 | 2,04 | | | |
| | | 90,8 | 31,8 | | WHITE | 5000 | 4881 | 64,68 | 2,04 | | | |
| | | 90,8 | 31,8 | | WHITE | 5000 | 4881 | 64,68 | 2,04 | | | |
| | 500 | 74,3 | 37,1 | 178,2 | RED | 657 | 19775 | 107,25 | 2,89 | 366,63 | 2,06 | LO-278053-RWWW-C1000-K177 |
| | | 94,1 | 47,0 | | WHITE | 5000 | 6687 | 86,46 | 1,84 | | | |
| | | 94,1 | 47,0 | | WHITE | 5000 | 6687 | 86,46 | 1,84 | | | |
| | | 94,1 | 47,0 | | WHITE | 5000 | 6687 | 86,46 | 1,84 | | | |
| | 700 | 79,2 | 55,4 | 259,9 | RED | 657 | 26788 | 145,28 | 2,62 | 481,88 | 1,85 | LO-278053-RWWW-C1000-K177 |
| | | 97,4 | 68,1 | | WHITE | 5000 | 8785 | 112,20 | 1,65 | | | |
| | | 97,4 | 68,1 | | WHITE | 5000 | 8785 | 112,20 | 1,65 | | | |
| | | 97,4 | 68,1 | | WHITE | 5000 | 8785 | 112,20 | 1,65 | | | |
| | 800 | 81,8 | 65,5 | 301,5 | RED | 657 | 30575 | 165,82 | 2,53 | 536,08 | 1,78 | LO-278053-RWWW-C1000-K177 |
| | | 98,3 | 78,7 | | WHITE | 5000 | 9664 | 123,42 | 1,57 | | | |
| | | 98,3 | 78,7 | | WHITE | 5000 | 9664 | 123,42 | 1,57 | | | |
| | | 98,3 | 78,7 | | 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%.



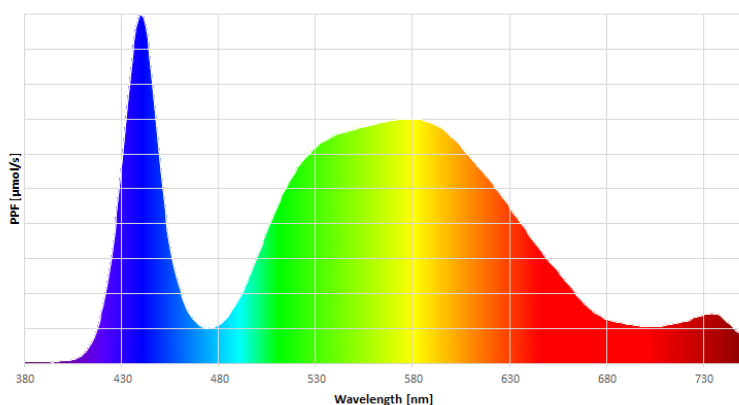
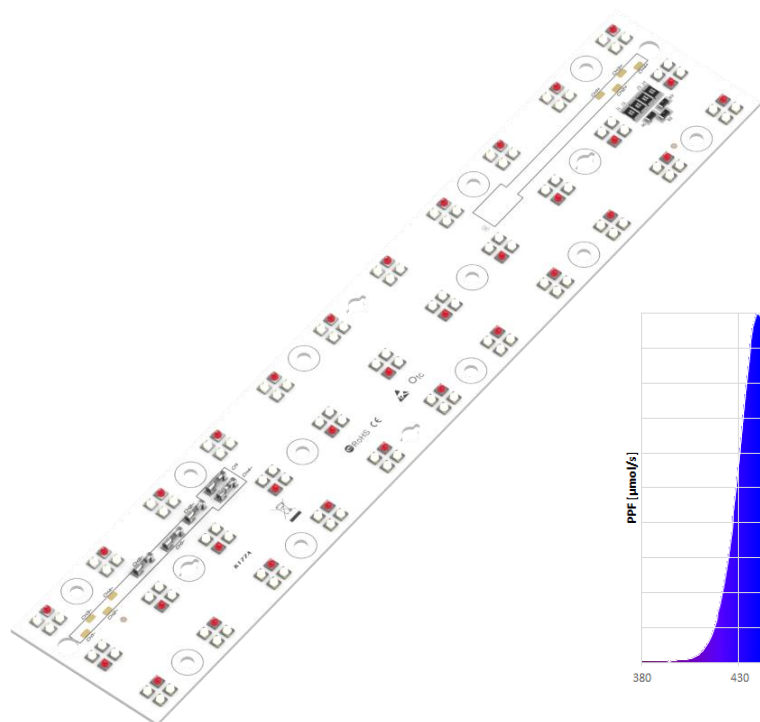
GROWEMITY 3x11 FWWW - K177

| | Input Current [mA] | Forward Voltage [V] | Power [W] | Total 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 - K177 | 350 | 61,1 | 21,4 | 116,7 | FAR RED | 727 | 8745 | 5,28 | 0,25 | 199,32 | 1,71 | LO-278053-FWWW-C1000-K177 |
| | | 90,8 | 31,8 | | WHITE | 5000 | 4881 | 64,68 | 2,04 | | | |
| | | 90,8 | 31,8 | | WHITE | 5000 | 4881 | 64,68 | 2,04 | | | |
| | | 90,8 | 31,8 | | WHITE | 5000 | 4881 | 64,68 | 2,04 | | | |
| | 500 | 64,4 | 32,2 | 173,3 | FAR RED | 727 | 12330 | 7,44 | 0,23 | 266,82 | 1,54 | LO-278053-FWWW-C1000-K177 |
| | | 94,1 | 47,0 | | WHITE | 5000 | 6687 | 86,46 | 1,84 | | | |
| | | 94,1 | 47,0 | | WHITE | 5000 | 6687 | 86,46 | 1,84 | | | |
| | | 94,1 | 47,0 | | WHITE | 5000 | 6687 | 86,46 | 1,84 | | | |
| | 700 | 68,3 | 47,8 | 252,3 | FAR RED | 727 | 16703 | 10,08 | 0,21 | 346,68 | 1,37 | LO-278053-FWWW-C1000-K177 |
| | | 97,4 | 68,1 | | WHITE | 5000 | 8785 | 112,20 | 1,65 | | | |
| | | 97,4 | 68,1 | | WHITE | 5000 | 8785 | 112,20 | 1,65 | | | |
| | | 97,4 | 68,1 | | WHITE | 5000 | 8785 | 112,20 | 1,65 | | | |
| | 800 | 69,6 | 55,7 | 291,7 | FAR RED | 727 | 19064 | 11,51 | 0,21 | 381,77 | 1,31 | LO-278053-FWWW-C1000-K177 |
| | | 98,3 | 78,7 | | WHITE | 5000 | 9664 | 123,42 | 1,57 | | | |
| | | 98,3 | 78,7 | | WHITE | 5000 | 9664 | 123,42 | 1,57 | | | |
| | | 98,3 | 78,7 | | 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%.



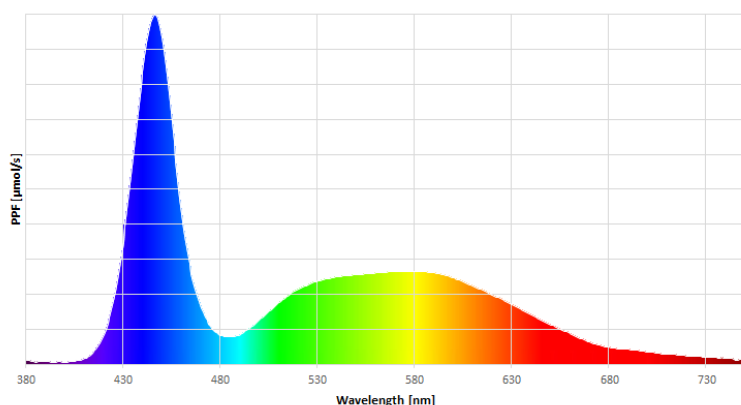
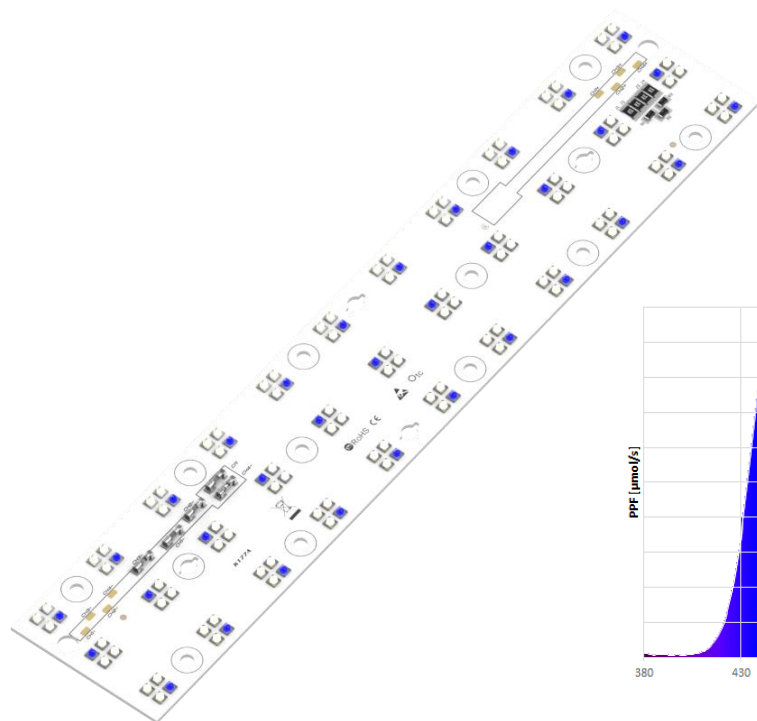
GROWEMITY 3x11 BWWW - K177

| | Input Current [mA] | Forward Voltage [V] | Power [W] | Total 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 - K177 | 350 | 94,1 | 32,9 | 128,2 | DEEP BLUE | 455 | 20955 | 77,55 | 2,36 | 271,59 | 2,12 | LO-278053-BWWW-C1000-K177 |
| | | 90,8 | 31,8 | | WHITE | 5000 | 4881 | 64,68 | 2,04 | | | |
| | | 90,8 | 31,8 | | WHITE | 5000 | 4881 | 64,68 | 2,04 | | | |
| | | 90,8 | 31,8 | | WHITE | 5000 | 4881 | 64,68 | 2,04 | | | |
| | 500 | 95,7 | 47,9 | 188,9 | DEEP BLUE | 455 | 29127 | 107,79 | 2,25 | 367,17 | 1,94 | LO-278053-BWWW-C1000-K177 |
| | | 94,1 | 47,0 | | WHITE | 5000 | 6687 | 86,46 | 1,84 | | | |
| | | 94,1 | 47,0 | | WHITE | 5000 | 6687 | 86,46 | 1,84 | | | |
| | | 94,1 | 47,0 | | WHITE | 5000 | 6687 | 86,46 | 1,84 | | | |
| | 700 | 98,0 | 68,6 | 273,0 | DEEP BLUE | 455 | 36043 | 133,39 | 1,94 | 469,99 | 1,72 | LO-278053-BWWW-C1000-K177 |
| | | 97,4 | 68,1 | | WHITE | 5000 | 8785 | 112,20 | 1,65 | | | |
| | | 97,4 | 68,1 | | WHITE | 5000 | 8785 | 112,20 | 1,65 | | | |
| | | 97,4 | 68,1 | | WHITE | 5000 | 8785 | 112,20 | 1,65 | | | |
| | 800 | 98,7 | 78,9 | 315,0 | DEEP BLUE | 455 | 39815 | 147,35 | 1,87 | 517,61 | 1,64 | LO-278053-BWWW-C1000-K177 |
| | | 98,3 | 78,7 | | WHITE | 5000 | 9664 | 123,42 | 1,57 | | | |
| | | 98,3 | 78,7 | | WHITE | 5000 | 9664 | 123,42 | 1,57 | | | |
| | | 98,3 | 78,7 | | 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%.

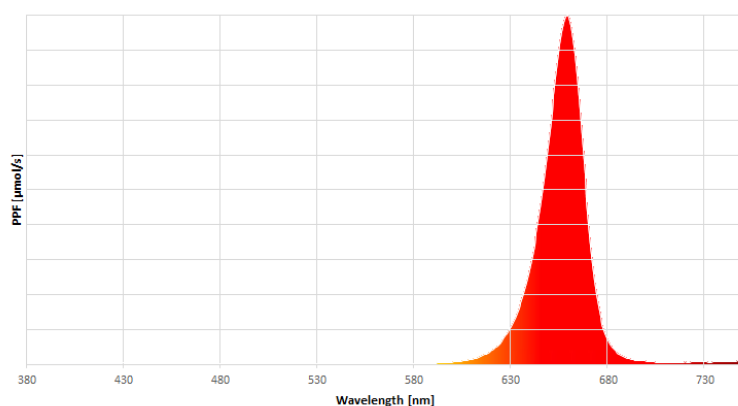
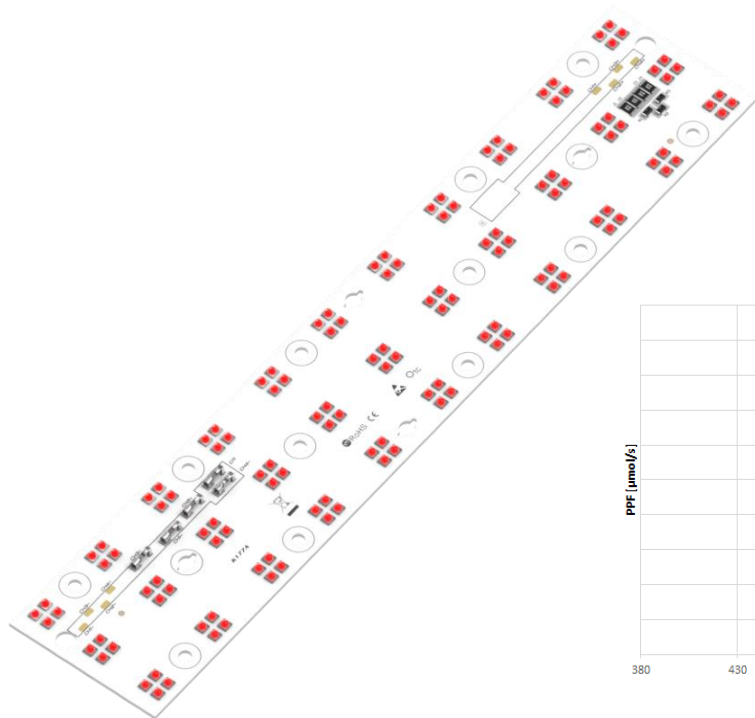


GROWEMITY 3x11 RRRR - K177

| | Input Current [mA] | Forward Voltage [V] | Power [W] | Total 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 RRRR - K177 | 350 | 71,0 | 24,8 | 99,3 | RED | 657 | 14025 | 76,07 | 3,06 | 304,26 | 3,06 | L0-278053-RRRR-C1000-K177 |
| | | 71,0 | 24,8 | | RED | 657 | 14025 | 76,07 | 3,06 | | | |
| | | 71,0 | 24,8 | | RED | 657 | 14025 | 76,07 | 3,06 | | | |
| | | 71,0 | 24,8 | | RED | 657 | 14025 | 76,07 | 3,06 | | | |
| | 500 | 74,3 | 37,1 | 148,5 | RED | 657 | 19775 | 107,25 | 2,89 | 429,01 | 2,89 | L0-278053-RRRR-C1000-K177 |
| | | 74,3 | 37,1 | | RED | 657 | 19775 | 107,25 | 2,89 | | | |
| | | 74,3 | 37,1 | | RED | 657 | 19775 | 107,25 | 2,89 | | | |
| | | 74,3 | 37,1 | | RED | 657 | 19775 | 107,25 | 2,89 | | | |
| | 700 | 79,2 | 55,4 | 221,8 | RED | 657 | 26788 | 145,28 | 2,62 | 581,14 | 2,62 | L0-278053-RRRR-C1000-K177 |
| | | 79,2 | 55,4 | | RED | 657 | 26788 | 145,28 | 2,62 | | | |
| | | 79,2 | 55,4 | | RED | 657 | 26788 | 145,28 | 2,62 | | | |
| | | 79,2 | 55,4 | | RED | 657 | 26788 | 145,28 | 2,62 | | | |
| | 800 | 81,8 | 65,5 | 261,9 | RED | 657 | 30575 | 165,82 | 2,53 | 663,29 | 2,53 | L0-278053-RRRR-C1000-K177 |
| | | 81,8 | 65,5 | | RED | 657 | 30575 | 165,82 | 2,53 | | | |
| | | 81,8 | 65,5 | | RED | 657 | 30575 | 165,82 | 2,53 | | | |
| | | 81,8 | 65,5 | | RED | 657 | 30575 | 165,82 | 2,53 | | | |

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%.

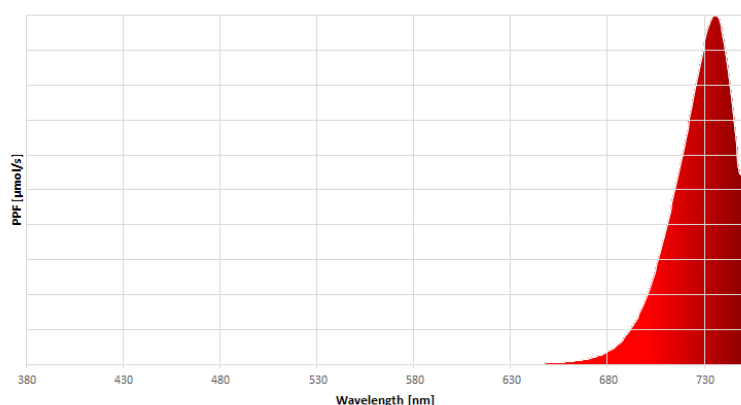
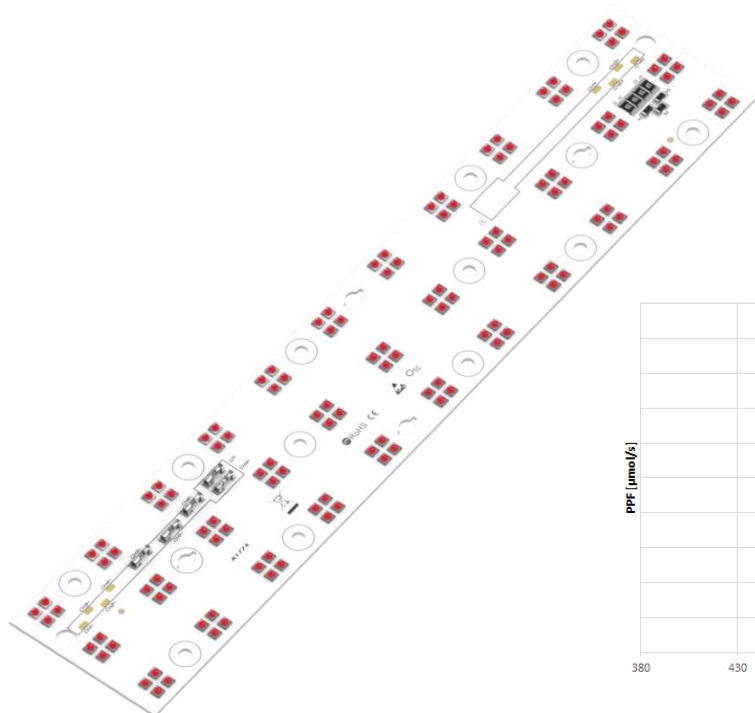


GROWEMITY 3X11 FFFF- K177

| | Input Current [mA] | Forward Voltage [V] | Power [W] | Total 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 FFFF - K177 | 350 | 61,1 | 21,4 | 85,5 | FAR RED | 727 | 8745 | 5,28 | 0,25 | 21,12 | 0,25 | L0-278053-FFFF-C1000-K177 |
| | | 61,1 | 21,4 | | FAR RED | 727 | 8745 | 5,28 | 0,25 | | | |
| | | 61,1 | 21,4 | | FAR RED | 727 | 8745 | 5,28 | 0,25 | | | |
| | | 61,1 | 21,4 | | FAR RED | 727 | 8745 | 5,28 | 0,25 | | | |
| | 500 | 64,4 | 32,2 | 128,7 | FAR RED | 727 | 12330 | 7,44 | 0,23 | 29,78 | 0,23 | L0-278053-FFFF-C1000-K177 |
| | | 64,4 | 32,2 | | FAR RED | 727 | 12330 | 7,44 | 0,23 | | | |
| | | 64,4 | 32,2 | | FAR RED | 727 | 12330 | 7,44 | 0,23 | | | |
| | | 64,4 | 32,2 | | FAR RED | 727 | 12330 | 7,44 | 0,23 | | | |
| | 700 | 68,3 | 47,8 | 191,3 | FAR RED | 727 | 16703 | 10,08 | 0,21 | 40,34 | 0,21 | L0-278053-FFFF-C1000-K177 |
| | | 68,3 | 47,8 | | FAR RED | 727 | 16703 | 10,08 | 0,21 | | | |
| | | 68,3 | 47,8 | | FAR RED | 727 | 16703 | 10,08 | 0,21 | | | |
| | | 68,3 | 47,8 | | FAR RED | 727 | 16703 | 10,08 | 0,21 | | | |
| | 800 | 69,6 | 55,7 | 222,8 | FAR RED | 727 | 19064 | 11,51 | 0,21 | 46,04 | 0,21 | L0-278053-FFFF-C1000-K177 |
| | | 69,6 | 55,7 | | FAR RED | 727 | 19064 | 11,51 | 0,21 | | | |
| | | 69,6 | 55,7 | | FAR RED | 727 | 19064 | 11,51 | 0,21 | | | |
| | | 69,6 | 55,7 | | 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%.

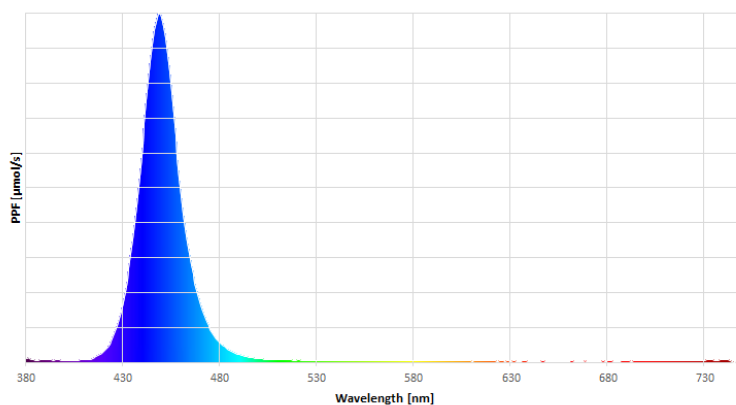
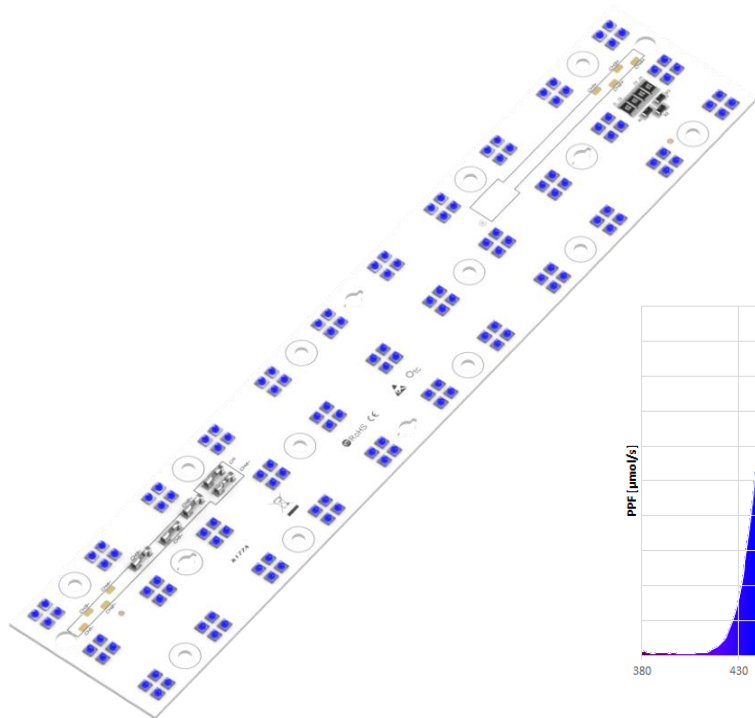


GROWEMITY 3x11 BBBB - K177

| | Input Current [mA] | Forward Voltage [V] | Power [W] | Total 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 BBBB - K177 | 350 | 94,1 | 32,9 | 131,7 | DEEP BLUE | 455 | 20955 | 77,55 | 2,36 | 310,20 | 2,36 | L0-278053-BBBB-C1000-K177 |
| | | 94,1 | 32,9 | | DEEP BLUE | 455 | 20955 | 77,55 | 2,36 | | | |
| | | 94,1 | 32,9 | | DEEP BLUE | 455 | 20955 | 77,55 | 2,36 | | | |
| | | 94,1 | 32,9 | | DEEP BLUE | 455 | 20955 | 77,55 | 2,36 | | | |
| | 500 | 95,7 | 47,9 | 191,4 | DEEP BLUE | 455 | 29127 | 107,79 | 2,25 | 431,18 | 2,25 | L0-278053-BBBB-C1000-K177 |
| | | 95,7 | 47,9 | | DEEP BLUE | 455 | 29127 | 107,79 | 2,25 | | | |
| | | 95,7 | 47,9 | | DEEP BLUE | 455 | 29127 | 107,79 | 2,25 | | | |
| | | 95,7 | 47,9 | | DEEP BLUE | 455 | 29127 | 107,79 | 2,25 | | | |
| | 700 | 98,0 | 68,6 | 274,4 | DEEP BLUE | 455 | 36043 | 133,39 | 1,94 | 533,54 | 1,94 | L0-278053-BBBB-C1000-K177 |
| | | 98,0 | 68,6 | | DEEP BLUE | 455 | 36043 | 133,39 | 1,94 | | | |
| | | 98,0 | 68,6 | | DEEP BLUE | 455 | 36043 | 133,39 | 1,94 | | | |
| | | 98,0 | 68,6 | | DEEP BLUE | 455 | 36043 | 133,39 | 1,94 | | | |
| | 800 | 98,7 | 78,9 | 315,7 | DEEP BLUE | 455 | 39815 | 147,35 | 1,87 | 589,38 | 1,87 | L0-278053-BBBB-C1000-K177 |
| | | 98,7 | 78,9 | | DEEP BLUE | 455 | 39815 | 147,35 | 1,87 | | | |
| | | 98,7 | 78,9 | | DEEP BLUE | 455 | 39815 | 147,35 | 1,87 | | | |
| | | 98,7 | 78,9 | | 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%.

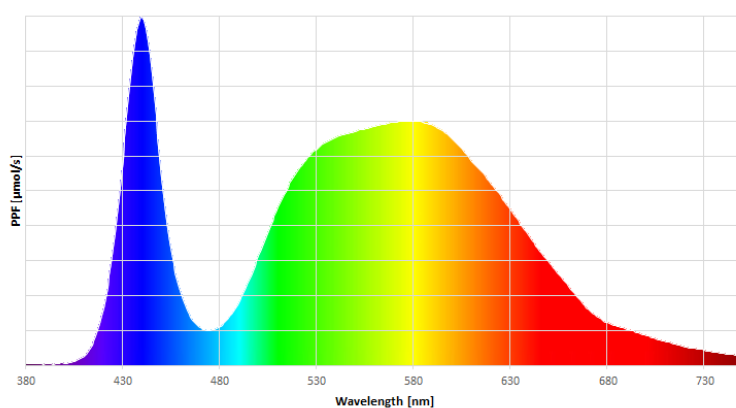
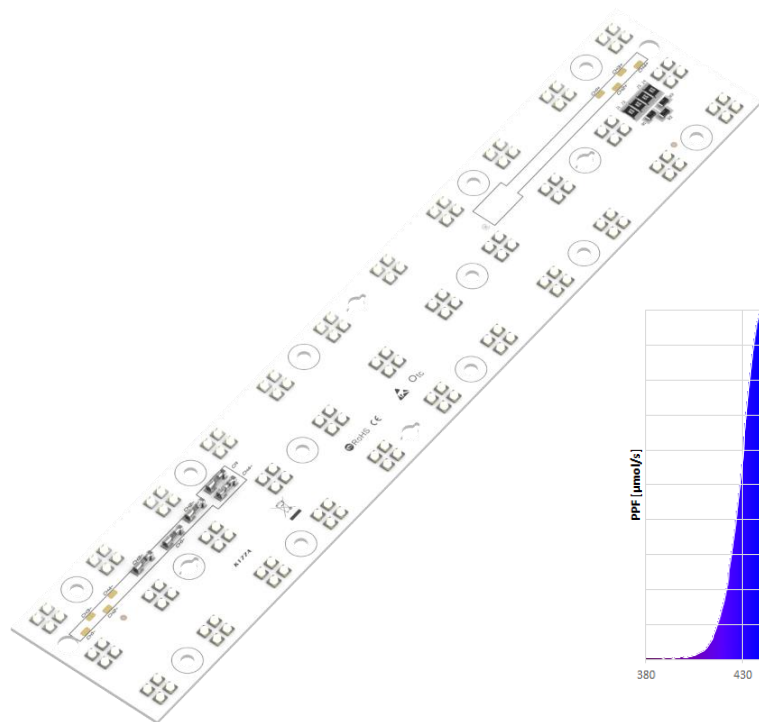


GROWEMITY 3x11 MONO - K177

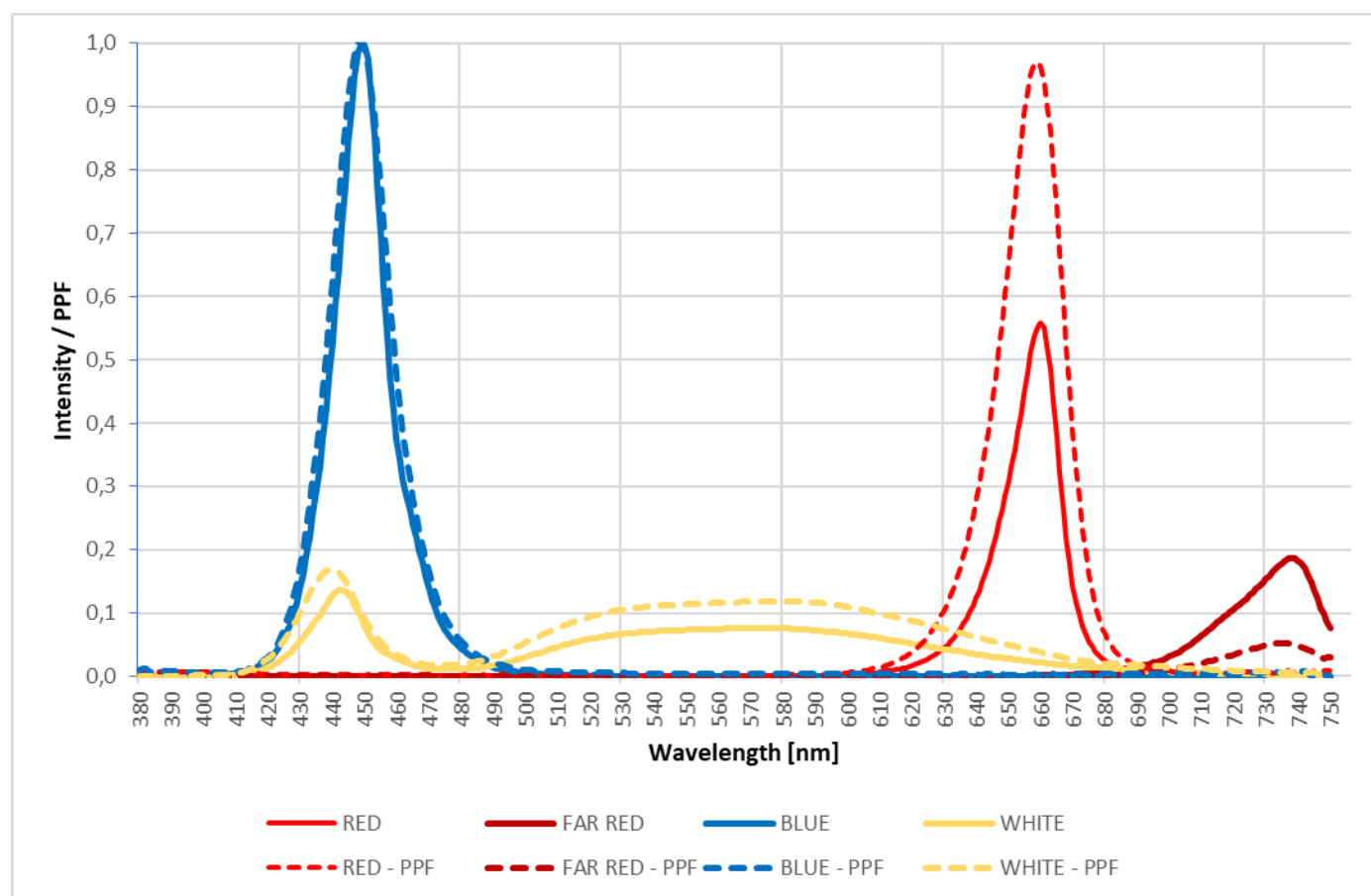
| | Input Current [mA] | Forward Voltage [V] | Power [W] | Total Power [W] | Colour | CCT [K] | Luminous Flux [lm] | PPF [$\mu\text{mol/s}$] | PPF/W [$\mu\text{mol/J}$] | Total PPF [$\mu\text{mol/s}$] | Total PPF/W [$\mu\text{mol/J}$] | Article Number |
|----------------------------|--------------------|---------------------|-----------|-----------------|--------|---------|--------------------|---------------------------|-----------------------------|---------------------------------|-----------------------------------|---------------------------|
| GrowEmity 3x11 MONO - K177 | 350 | 90,8 | 31,8 | 127,1 | WHITE | 5000 | 4881 | 64,68 | 2,04 | 258,72 | 2,04 | L0-278053-MONO-C1000-K177 |
| | | 90,8 | 31,8 | | WHITE | 5000 | 4881 | 64,68 | 2,04 | | | |
| | | 90,8 | 31,8 | | WHITE | 5000 | 4881 | 64,68 | 2,04 | | | |
| | | 90,8 | 31,8 | | WHITE | 5000 | 4881 | 64,68 | 2,04 | | | |
| | 500 | 94,1 | 47,0 | 188,1 | WHITE | 5000 | 6687 | 86,46 | 1,84 | 345,84 | 1,84 | L0-278053-MONO-C1000-K177 |
| | | 94,1 | 47,0 | | WHITE | 5000 | 6687 | 86,46 | 1,84 | | | |
| | | 94,1 | 47,0 | | WHITE | 5000 | 6687 | 86,46 | 1,84 | | | |
| | | 94,1 | 47,0 | | WHITE | 5000 | 6687 | 86,46 | 1,84 | | | |
| | 700 | 97,4 | 68,1 | 272,6 | WHITE | 5000 | 8785 | 112,20 | 1,65 | 448,80 | 1,65 | L0-278053-MONO-C1000-K177 |
| | | 97,4 | 68,1 | | WHITE | 5000 | 8785 | 112,20 | 1,65 | | | |
| | | 97,4 | 68,1 | | WHITE | 5000 | 8785 | 112,20 | 1,65 | | | |
| | | 97,4 | 68,1 | | WHITE | 5000 | 8785 | 112,20 | 1,65 | | | |
| | 800 | 98,3 | 78,7 | 314,7 | WHITE | 5000 | 9664 | 123,42 | 1,57 | 493,68 | 1,57 | L0-278053-MONO-C1000-K177 |
| | | 98,3 | 78,7 | | WHITE | 5000 | 9664 | 123,42 | 1,57 | | | |
| | | 98,3 | 78,7 | | WHITE | 5000 | 9664 | 123,42 | 1,57 | | | |
| | | 98,3 | 78,7 | | WHITE | 5000 | 9664 | 123,42 | 1,57 | | | |

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%.



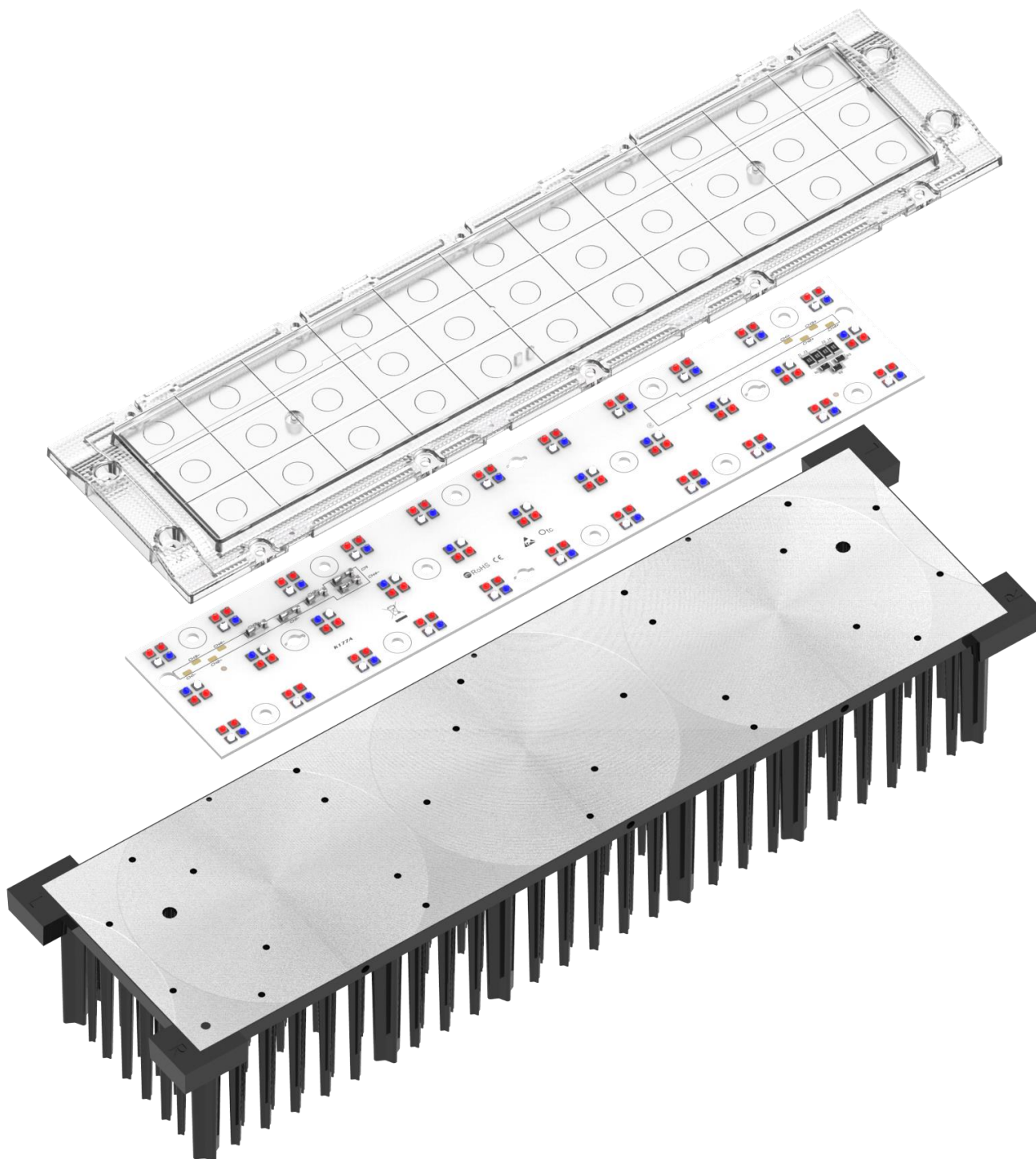
SPECTRUM OF LEDs



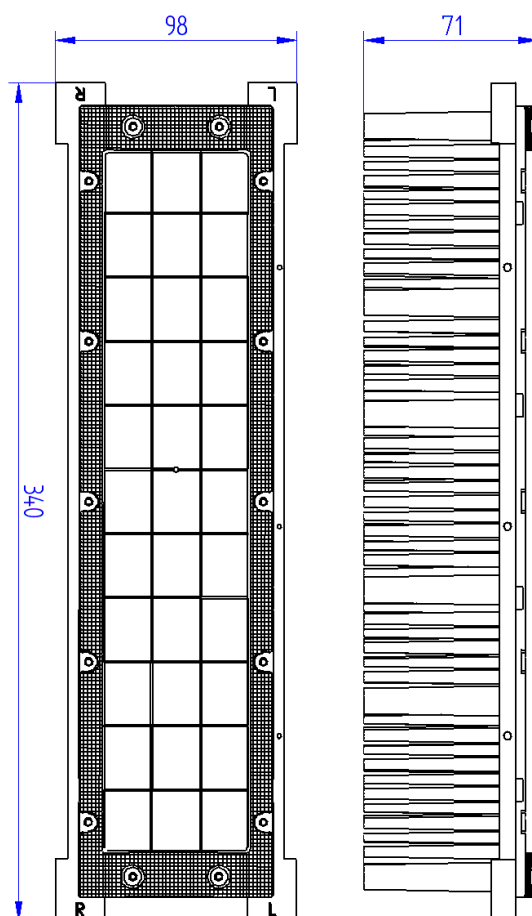
Spectrum graph of the red, far red, blue and white LEDs at 350 mA current. Spectrum can be changed by choosing LEDs and power output.

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.

CONTACT

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Subject to errors and technical changes.