

# Plus Opto Ltd.

## PowerFlux MCPCB

| Approved By Customer | Designer | Checker | Approval |
|----------------------|----------|---------|----------|
|                      |          |         |          |

Date : 2006/02/17

Version : 2.1

Device No. : 3-RD-01-E0004

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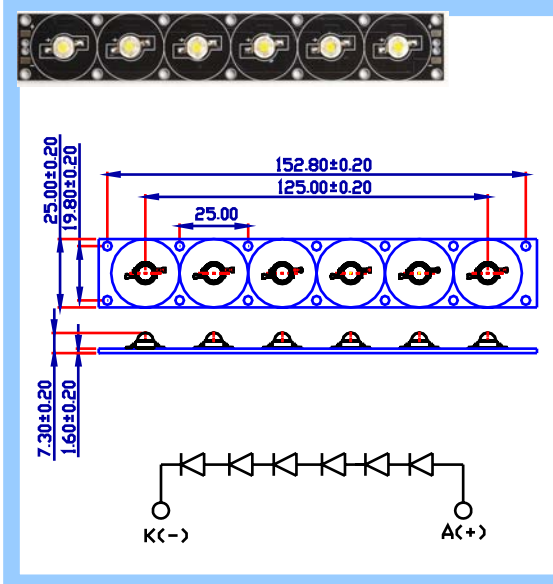
Fax: 01942 617733

<http://www.plusopto.co.uk>

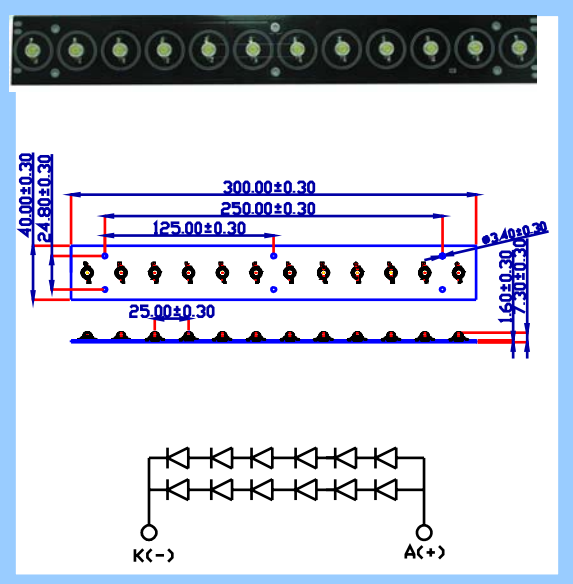


## Package Outlines

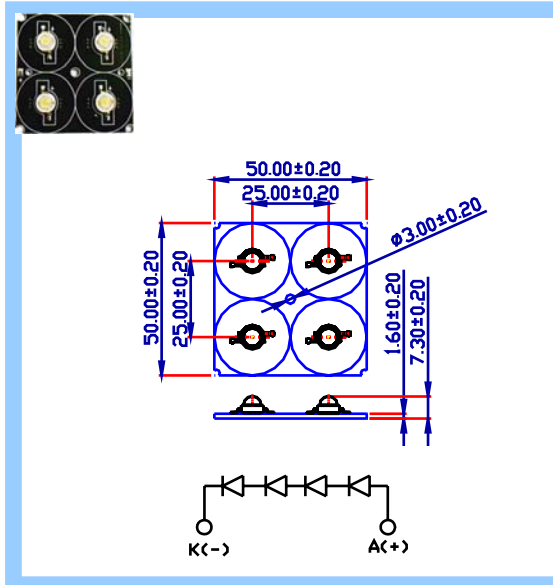
SFNMLx-A110C-061x



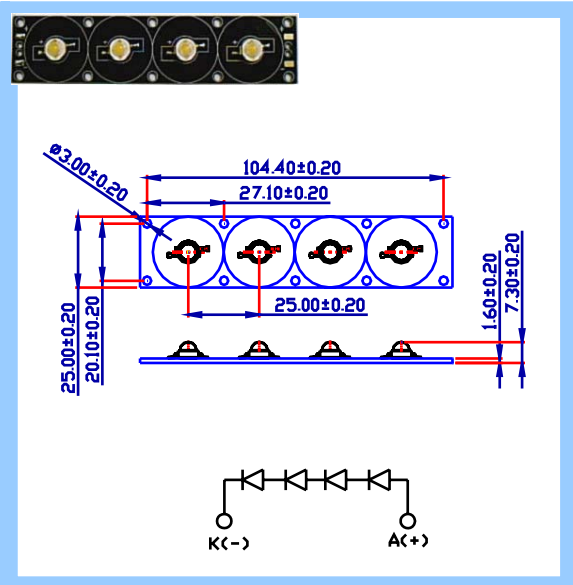
SFNMLx-A120G-121x



SFNMPx-A50C-041x



SFNMLx-A60C-041x

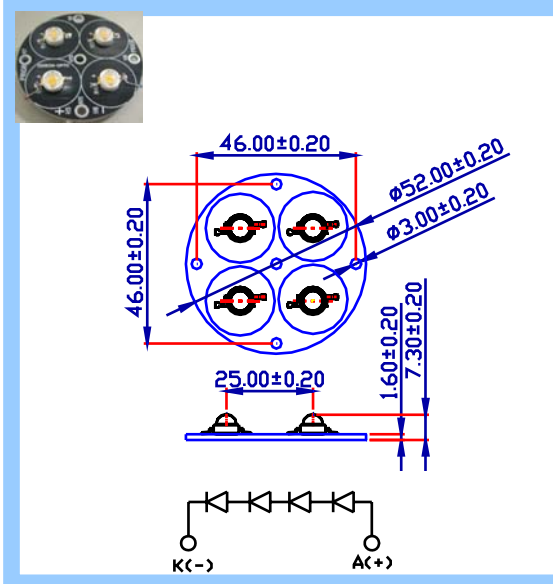


### Notes:

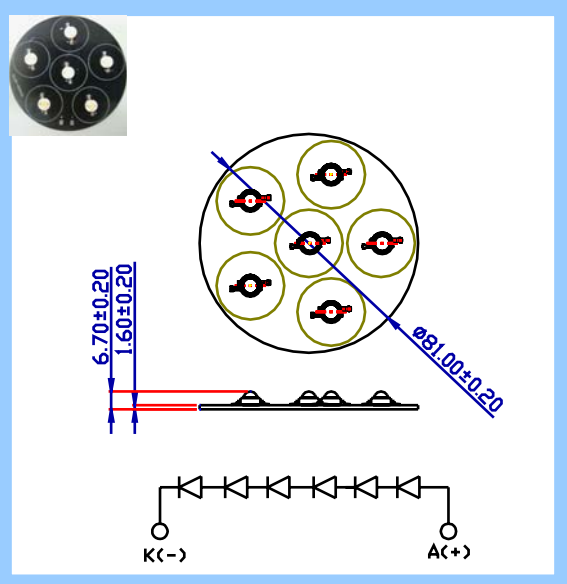
1. All dimensions are in mm.
2. Drawings are not to scale.
3. It is strongly recommended that the temperature of lead be not higher than  $60\text{ }^{\circ}\text{C}$ .

## Package Outlines

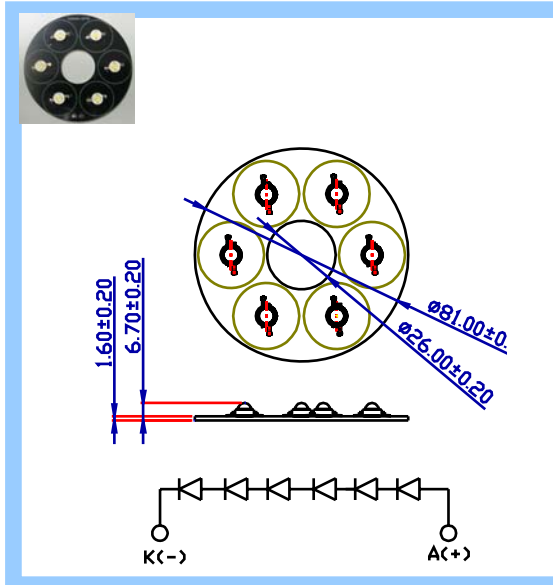
SFNMx-A130C-041



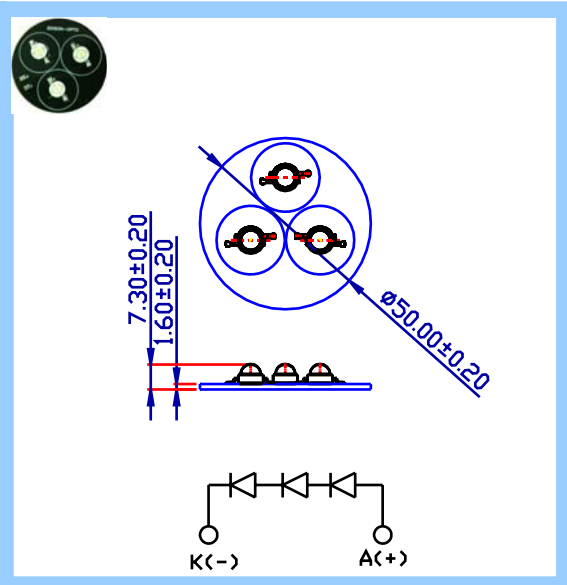
SFNMx-A70C-061x



SFNMRx-A70C-061x



SFNMx-A80C-031x

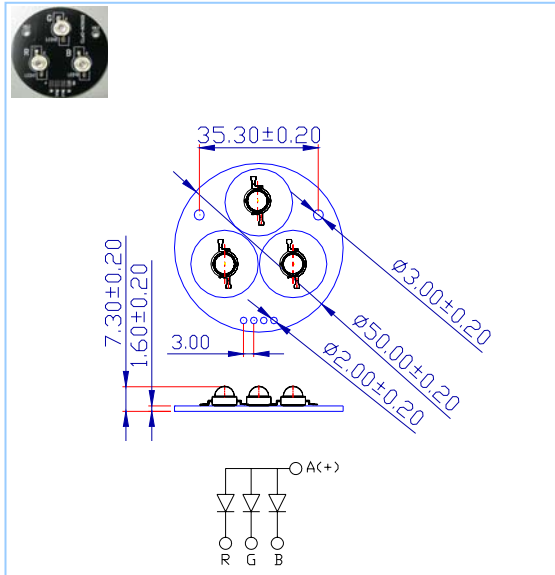


### Notes:

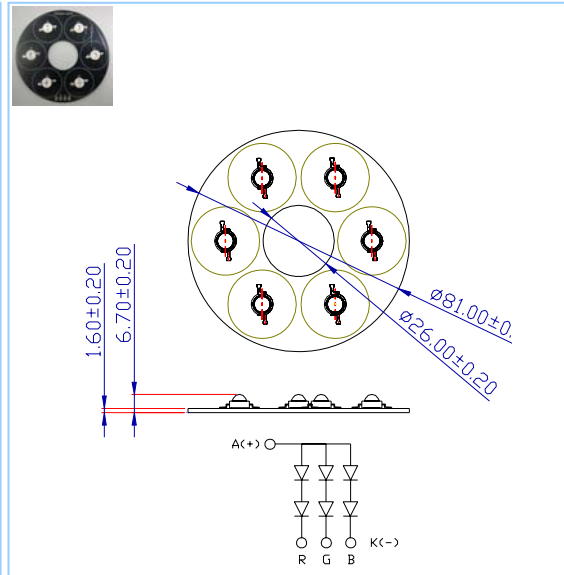
1. All dimensions are in mm.
2. Drawings are not to scale.
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## Package Outlines

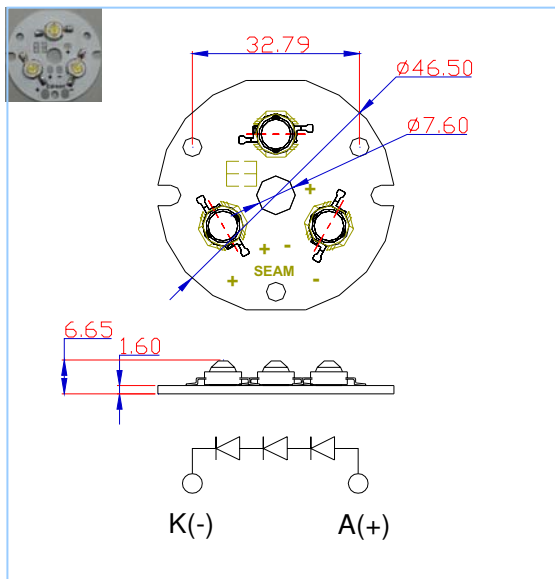
SFNMCRTB-A80F-031x



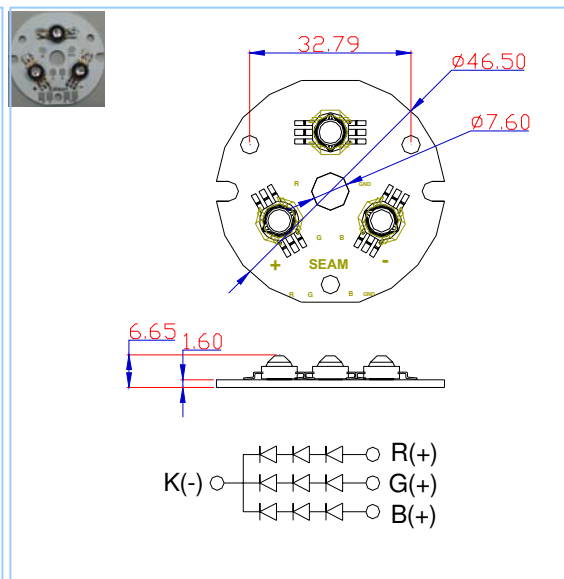
SFNMRRTB-A70C-061x



SFNMCRx-A250C-031x



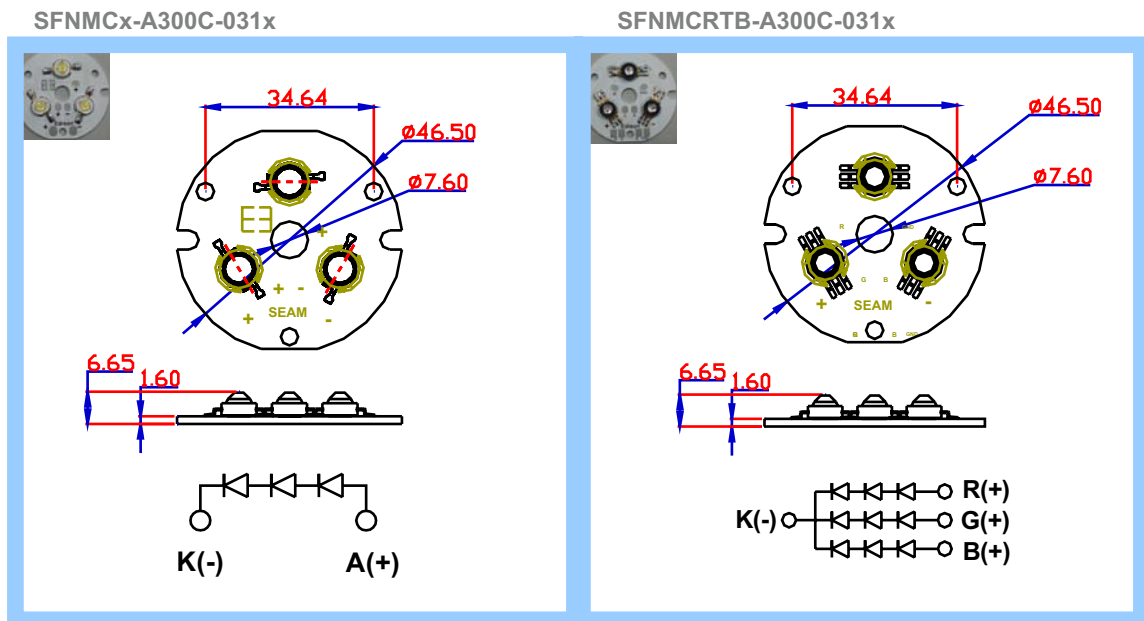
SFNMCRTB-A250C-031x



### Notes:

1. All dimensions are in mm.
2. Drawings are not to scale.
3. It is strongly recommended that the temperature of lead be not higher than  $60^{\circ}\text{C}$ .

## Package Outlines



### Notes:

4. All dimensions are in mm.
5. Drawings are not to scale.
6. It is strongly recommended that the temperature of lead be not higher than 60 °C.

### Multi color series Characteristics at $T_j=25^{\circ}\text{C}$ :

| Color      | SFNMCRTB-A80F-031x |         | SFNMCRTB-A70C-061x |         | SFNMCRTB-A250C-031x |         |
|------------|--------------------|---------|--------------------|---------|---------------------|---------|
|            | $I_F=350\text{mA}$ |         | $I_F=350\text{mA}$ |         | $I_F=350\text{mA}$  |         |
|            | Total Flux(lm)     | fid(nm) | Total Flux(lm)     | fid(nm) | Total Flux(lm)      | fid(nm) |
|            | Typ.               | Typ.    | Typ.               | Typ.    | Typ.                | Typ.    |
| Red        | 40.0               | 625.0   | 80.0               | 625.0   | 120.0               | 625.0   |
| True Green | 50.0               | 525.0   | 100.0              | 525.0   | 150.0               | 525.0   |
| Blue       | 16.0               | 470.0   | 32.0               | 470.0   | 48.0                | 470.0   |
|            | $V_F(\text{V})$    |         | $V_F(\text{V})$    |         | $V_F(\text{V})$     |         |
|            | Min.               | Max.    | Min.               | Max.    | Min.                | Max.    |
| Red        | 2.0                | 3.0     | 4.0                | 6.0     | 6.0                 | 9.0     |
| True Green | 2.8                | 4.0     | 5.6                | 8.0     | 8.4                 | 12.9    |
| Blue       | 3.1                | 4.3     | 6.2                | 8.6     | 9.3                 | 12.9    |

| Color      | SFNMCRTB-A300C-031x   |         |
|------------|-----------------------|---------|
|            | I <sub>F</sub> =350mA |         |
|            | Total Flux(lm)        | fid(nm) |
|            | Typ.                  | Typ.    |
| Red        | 120.0                 | 625.0   |
| True Green | 150.0                 | 525.0   |
| Blue       | 48.0                  | 470.0   |
|            | V <sub>F</sub> (V)    |         |
|            | Min.                  | Max.    |
|            | Red                   | 6.0     |
| True Green | 8.4                   | 12.9    |
| Blue       | 9.3                   | 12.9    |

Forward Current Characteristics at  $T_J=25^{\circ}\text{C}$ :

| Color      | $V_F(\text{V})$    |      |                    |      |                    |      |
|------------|--------------------|------|--------------------|------|--------------------|------|
|            | SFNMLx-A110C-061x  |      | SFNMLx-A120C-121x  |      | SFNMPx-A50C-041x   |      |
|            | $I_F=350\text{mA}$ |      | $I_F=700\text{mA}$ |      | $I_F=350\text{mA}$ |      |
|            | Min.               | Max. | Min.               | Max. | Min.               | Max. |
| White      | 18.6               | 25.8 | 18.6               | 25.8 | 12.4               | 17.2 |
| Warm White | 18.6               | 25.8 | 18.6               | 25.8 | 12.4               | 17.2 |
| Red        | 12.0               | 18.0 | 12.0               | 18.0 | 8.0                | 12.0 |
| Red Orange | 12.0               | 18.0 | 12.0               | 18.0 | 8.0                | 12.0 |
| Amber      | 12.0               | 18.0 | 12.0               | 18.0 | 8.0                | 12.0 |
| True Green | 16.8               | 24.0 | 16.8               | 24.0 | 11.2               | 16.0 |
| Blue       | 18.6               | 25.8 | 18.6               | 25.8 | 12.4               | 17.2 |
| Color      | $V_F(\text{V})$    |      |                    |      |                    |      |
|            | SFNMLx-A60C-041x   |      | SFNMCx-A130C-041x  |      | SFNMCx-A70C-061x   |      |
|            | $I_F=350\text{mA}$ |      | $I_F=350\text{mA}$ |      | $I_F=350\text{mA}$ |      |
|            | Min.               | Max. | Min.               | Max. | Min.               | Max. |
| White      | 12.4               | 17.2 | 12.4               | 17.2 | 18.6               | 25.8 |
| Warm White | 12.4               | 17.2 | 12.4               | 17.2 | 18.6               | 25.8 |
| Red        | 8.0                | 12.0 | 8.0                | 12.0 | 12.0               | 18.0 |
| Red Orange | 8.0                | 12.0 | 8.0                | 12.0 | 12.0               | 18.0 |
| Amber      | 8.0                | 12.0 | 8.0                | 12.0 | 12.0               | 18.0 |
| True Green | 11.2               | 16.0 | 11.2               | 16.0 | 16.8               | 24.0 |
| Blue       | 12.4               | 17.2 | 12.4               | 17.2 | 18.6               | 25.8 |
| Color      | $V_F(\text{V})$    |      |                    |      |                    |      |
|            | SFNMRx-A70C-061x   |      | SFNMCx-A80C-031x   |      | SFNMCx-A250C-031x  |      |
|            | $I_F=350\text{mA}$ |      | $I_F=350\text{mA}$ |      | $I_F=350\text{mA}$ |      |
|            | Min.               | Max. | Min.               | Max. | Min.               | Max. |
| White      | 18.6               | 25.8 | 9.3                | 12.9 | 9.3                | 12.9 |
| Warm White | 18.6               | 25.8 | 9.3                | 12.9 | 9.3                | 12.9 |
| Red        | 12.0               | 18.0 | 6.0                | 9.0  | 6.0                | 9.0  |
| Red Orange | 12.0               | 18.0 | 6.0                | 9.0  | 6.0                | 9.0  |
| Amber      | 12.0               | 18.0 | 6.0                | 9.0  | 6.0                | 9.0  |
| True Green | 16.8               | 24.0 | 8.4                | 12.0 | 8.4                | 12.0 |
| Blue       | 18.6               | 25.8 | 9.3                | 12.9 | 9.3                | 12.9 |





| Color      | V <sub>F</sub> (V)    |      |
|------------|-----------------------|------|
|            | SFNMCx-A300C-031x     |      |
|            | I <sub>F</sub> =350mA |      |
|            | Min.                  | Max. |
| White      | 9.3                   | 12.9 |
| Warm White | 9.3                   | 12.9 |
| Red        | 6.0                   | 9.0  |
| Red Orange | 6.0                   | 9.0  |
| Amber      | 6.0                   | 9.0  |
| True Green | 8.4                   | 12.0 |
| Blue       | 9.3                   | 12.9 |






CCT and Color Characteristics at T<sub>J</sub>=25°C:

| Color      | SFNMLx-A110C-061x     |         | SFNMLx-A120C-121x     |         | SFNMPx-A50C-041x      |         |
|------------|-----------------------|---------|-----------------------|---------|-----------------------|---------|
|            | I <sub>F</sub> =350mA |         | I <sub>F</sub> =700mA |         | I <sub>F</sub> =350mA |         |
|            | Total Flux(lm)        | CCT/fid | Total Flux(lm)        | CCT/fid | Total Flux(lm)        | CCT/fid |
|            | Typ.                  | Typ.    | Typ.                  | Typ.    | Typ.                  | Typ.    |
| White      | 300.0                 | 6500K   | 600.0                 | 6500K   | 200.0                 | 6500K   |
| Warm White | 210.0                 | 3100K   | 420.0                 | 3100K   | 140.0                 | 3100K   |
| Red        | 240.0                 | 625.0   | 480.0                 | 625.0   | 160.0                 | 625.0   |
| Red Orange | 270.0                 | 617.0   | 540.0                 | 617.0   | 180.0                 | 617.0   |
| Amber      | 240.0                 | 590.0   | 480.0                 | 590.0   | 160.0                 | 590.0   |
| True Green | 300.0                 | 525.0   | 600.0                 | 525.0   | 200.0                 | 525.0   |
| Blue       | 96.0                  | 470.0   | 192.0                 | 470.0   | 64.0                  | 470.0   |
| Color      | SFNMLx-A60C-041x      |         | SFNMCx-A130C-041x     |         | SFNMCx-A70C-061x      |         |
|            | I <sub>F</sub> =350mA |         | I <sub>F</sub> =350mA |         | I <sub>F</sub> =350mA |         |
|            | Total Flux(lm)        | CCT/fid | Total Flux(lm)        | CCT/fid | Total Flux(lm)        | CCT/fid |
|            | Typ.                  | Typ.    | Typ.                  | Typ.    | Typ.                  | Typ.    |
| White      | 200.0                 | 6500K   | 200.0                 | 6500K   | 300.0                 | 6500K   |
| Warm White | 140.0                 | 3100K   | 140.0                 | 3100K   | 210.0                 | 3100K   |
| Red        | 160.0                 | 625.0   | 160.0                 | 625.0   | 240.0                 | 625.0   |
| Red Orange | 180.0                 | 617.0   | 180.0                 | 617.0   | 270.0                 | 617.0   |
| Amber      | 160.0                 | 590.0   | 160.0                 | 590.0   | 240.0                 | 590.0   |
| True Green | 200.0                 | 525.0   | 200.0                 | 525.0   | 300.0                 | 525.0   |
| Blue       | 64.0                  | 470.0   | 64.0                  | 470.0   | 96.0                  | 470.0   |

| Color      | SFNMRx-A70C-061x      |         | SFNMCx-A80C-031x      |         | SFNMCx-A250C-031x     |         |
|------------|-----------------------|---------|-----------------------|---------|-----------------------|---------|
|            | I <sub>F</sub> =350mA |         | I <sub>F</sub> =350mA |         | I <sub>F</sub> =350mA |         |
|            | Total Flux(lm)        | CCT/fid | Total Flux(lm)        | CCT/fid | Total Flux(lm)        | CCT/fid |
|            | Typ.                  | Typ.    | Typ.                  | Typ.    | Typ.                  | Typ.    |
| White      | 300.0                 | 6500K   | 150.0                 | 6500K   | 150.0                 | 6500K   |
| Warm White | 210.0                 | 3100K   | 105.0                 | 3100K   | 105.0                 | 3100K   |
| Red        | 240.0                 | 625.0   | 120.0                 | 625.0   | 120.0                 | 625.0   |
| Red Orange | 270.0                 | 617.0   | 135.0                 | 617.0   | 135.0                 | 617.0   |
| Amber      | 240.0                 | 590.0   | 120.0                 | 590.0   | 120.0                 | 590.0   |
| True Green | 300.0                 | 525.0   | 150.0                 | 525.0   | 150.0                 | 525.0   |
| Blue       | 96.0                  | 470.0   | 48.0                  | 470.0   | 48.0                  | 470.0   |
| Color      | SFNMCx-A300C-031x     |         |                       |         |                       |         |
|            | I <sub>F</sub> =350mA |         |                       |         |                       |         |
|            | Total Flux(lm)        | CCT/fid |                       |         |                       |         |
|            | Typ.                  | Typ.    |                       |         |                       |         |
| White      | 150.0                 | 6500K   |                       |         |                       |         |
| Warm White | 105.0                 | 3100K   |                       |         |                       |         |
| Red        | 120.0                 | 625.0   |                       |         |                       |         |
| Red Orange | 135.0                 | 617.0   |                       |         |                       |         |
| Amber      | 120.0                 | 590.0   |                       |         |                       |         |
| True Green | 150.0                 | 525.0   |                       |         |                       |         |
| Blue       | 48.0                  | 470.0   |                       |         |                       |         |

Thermal Characteristics at Ta=25°C

| Module Part No.   | Dimension (mm) | SFNEW-1LA1 V <sub>F</sub> (V) | T <sub>b</sub> (°C)*1 | Picture   |
|-------------------|----------------|-------------------------------|-----------------------|---|
| SFNMLx-A110C-061x | 160*25*1.6     | 3.7                           | 75                    |  |
| SFNMLx-A120C-121x | 300*40*1.6     | 3.7                           | 60                    |  |
| SFNMPx-A50C-041x  | 50*50*1.6      | 3.7                           | 80                    |  |
| SFNMLx-A60C-041x  | 110*25*1.6     | 3.7                           | 75                    |  |

|                   |           |     |    |   |
|-------------------|-----------|-----|----|---|
| SFNMCx-A130C-041x | 52*1.6    | 3.7 | 85 |  |
| SFNMCx-A70C-061x  | 81*1.6    | 3.7 | 65 |  |
| SFNMRx-A70C-061x  | 81*25*1.6 | 3.7 | 70 |  |
| SFNMCx-A80C-031x  | 50*1.6    | 3.7 | 77 |  |
| SFNMCx-A250C-031x | 46.5*1.6  | 3.7 | 79 |  |
| SFNMCx-A300C-031x | 46.5*1.6  | 3.7 | 79 |  |

**Note:**

1.  $T_b$ =Temperature of MCPCB after 20 minutes.

It is recommended that the optimum MCPCB temp is below 60°C when used in free air convection  
 For reliable operation and lumen maintenance it is essential that proper thermal management  
 is provided by secondary heatsinking closely matched with the MCPCB  
 Specifications may be subject to change for improvement without prior notice