ModuLED Nano Modular Passive LED Cooler

Features & Benefits

- For spot and downlight designs from 600 to 3,000 lumen
- Thermal resistance range Rth 1.8 - 2.2°C/W
- Modular design with mounting holes foreseen for direct mounting of a wide range of LED modules and COB’s:
  - Zhaga book 3 Spot Light Modules Edison Edilex, Tridonic Talexx Stark SLE, Philips Fortimo SLM, VS Luga Shop,…
  - Bridgelux BXRA ESS, ESR, Vero 10, Vero 13, Vero 18, V-series
  - Citizen Cited CL-L022, CL-L032
  - Edison Opto Edipower II HM/HR/HS/HD/SD series
  - LG Innotek PKG 10/13/17/24W
  - Philips Lumileds Luxeon COB’s 1204, 1205 and 1208
  - Prolight Opto PANA and PABA COB series
  - Tridonic Talexx Stark SLE and Mini G3
  - Xicato XSM and XPM LED modules
- Diameter 70mm - Standard height 50mm & 80mm
  Other heights on request
- Extruded from highly conductive aluminum

Order Information

Example: ModuLED Nano 7050-B

ModuLED Nano 70

<table>
<thead>
<tr>
<th>Height (mm)</th>
<th>Anodising Color</th>
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<tr>
<td>1</td>
<td>B - Black</td>
</tr>
<tr>
<td>2</td>
<td>C - Clear</td>
</tr>
</tbody>
</table>

ModuLED Nano is designed in this way that you can mount LED modules from various manufacturers on the same LED cooler
Simple mounting with self tapping screws
Recommended screw force 6lb/in
Screws are available from MechaTronix
ModuLED Nano Modular Passive LED Cooler

Product Details

<table>
<thead>
<tr>
<th>Model n°</th>
<th>ModuLED Nano 7050</th>
<th>ModuLED Nano 7080</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimension (mm) *1</td>
<td>Ø70 x h50</td>
<td>Ø70 x h80</td>
</tr>
<tr>
<td>Volume (mm³)</td>
<td>69498</td>
<td>112480</td>
</tr>
<tr>
<td>Cooling Surface (mm²)</td>
<td>66919</td>
<td>104875</td>
</tr>
<tr>
<td>Weight (gr)</td>
<td>188</td>
<td>304</td>
</tr>
<tr>
<td>Thermal Resistance (°C/W) *2</td>
<td>2.2</td>
<td>1.8</td>
</tr>
<tr>
<td>Power Pd (W) *3</td>
<td>22.7</td>
<td>27.8</td>
</tr>
<tr>
<td>Heat Sink Material</td>
<td>AL6063-T5</td>
<td>AL6063-T5</td>
</tr>
</tbody>
</table>

*1 3D files are available in ParaSolid, STP and IGS on request

*2 The thermal resistance Rth is determined with a calibrated heat source of 30mm x 30mm central placed on the heat sink, Tamb 40° and an open environment. Reference data @ heat sink to ambient temperature rise Ths-amb 50°C
The thermal resistance of a LED cooler is not a fix value and will vary with the applied dissipated power Pd

*3 Dissipated power Pd. Reference data @ heat sink to ambient temperature rise Ths-amb 50°C
The maximal dissipated power needs to be verified in function of required case temperature Tc or junction temperature Tj and related to the estimated ambient temperature where the light fixture will be placed
Please be aware the dissipated power Pd is not the same as the electrical power Pe of a LED module

To calculate the dissipated power please use the following formula: Pd = Pe x (1-ηL)
Pd - Dissipated power
Pe - Electrical power
ηL = Light efficiency of the LED module

Notes:
- MechaTronix reserves the right to change products or specifications without prior notice.
- Mentioned models are an extraction of full product range.
- For specific mechanical adaptations please contact MechaTronix.
ModuLED Nano  Modular Passive LED Cooler

Mounting Options

The ModuLED Nano passive LED coolers are standard foreseen from a variety of mounting holes which allow direct mounting of LED engines, COB's and secondary optics on the LED heat sink.

In this way mechanical afterwork and related costs can be avoided, and lighting designers can standardize their designs on a limited number of LED coolers.

Below you find an overview of LED modules and COB's which standard fit on the ModuLED Nano cooler.

The ModuLED Nano is probably the most complete standard LED cooler with regards to mounting possibilities of Zhaga and the latest generation of COB LED modules.

For more details about the required mounting holes and thermal results for your specific LED brand and model, please refer to the brand LED cooler datasheets under "Brand Products" and the brand LED cooler overview under the "Download" menu.

Zhaga Book 3 Spot Light Modules

Zhaga Interface Specification Book 3 defines the interfaces of a type-D LED light engine (non-socketable LED module with separate electronic control gear). The LED light engine LLE has a round disc shape with a maximum height of 7.2 mm and a typical diameter of 50 mm. It is suitable for spot-lighting and other applications that benefit from a small, circular source. Book 3 specifies a circular light-emitting surface (LES) that can have a range of diameters, namely 9 mm, 13.5 mm, 19 mm and 23 mm.

Zhaga Book 3 compliant LED Spot Light modules *1
- Edison Edilex SLM
- Osram PrevaLED
- Philips Fortimo SLM
- Tridonic Talexx Stark SLE
- Vexica Lumaera
- Vossloh Schwabe Luga Shop

*1 This is a non-binding overview of available Zhaga book 3 LED modules at press

Zhaga Book 3 mounting through the use of LED holders and connectors

With the use of Zhaga Book 3 mechanical compatible LED holders, a wide variety of LED COB's can be mounted in the same way on these LED coolers.

Zhaga Book 3 compatible LED holders can be found from BJB, Tyco Electronics Connectivity (TE), Molex, AAG Stucchi and Ideal.

Zhaga Book 3 Spot Light Modules

LED COB's for which Zhaga book 3 LED holders are available
- Bridgelux ES rectangular LED array
- Citizen CitiLED CL-L030, CL-L032, CL-L040, CL-L042
- Cree Xlamp CXA18xx, CXA25xx, CXA30xx
- Edison Opto HV16 and HM30
- LG Lighting MCP 10-24W
- Osram Soleriq E30
- Philips Lumileds Luxeon 1204, 1205 and 1208, Luxeon K32 and K16
- Prolight Opto PABA 10-50W
- Sharp Mega Zenigata and Tiger Zenigata
- Tridonic Talexx Stark LES 17

Mounting
- Direct mounting with 2 self tapping screws M3 x 10mm
- Green indicator marks

Reflector ring
- This optional ring can be mounted on top of the Edison Opto Edilex spot light module and provides in this way an easy plug-and-play attachment of various reflectors.
- Mounting with 3 self tapping screws M3 x 10mm
- Red indicator marks
### Bridgelux LED Modules

#### Bridgelux Vero 10 LED Module

**Model names**
- Vero 10 BXRC-27E1000-B-xx
- Vero 10 BXRC-27G1000-B-xx
- Vero 10 BXRC-27H1000-B-xx
- Vero 10 BXRC-30E1000-B-xx
- Vero 10 BXRC-30G1000-B-xx
- Vero 10 BXRC-30H1000-B-xx
- Vero 10 BXRC-35E1000-B-xx
- Vero 10 BXRC-40E1000-B-xx
- Vero 10 BXRC-50C1000-B-xx

**Mounting**
- Direct mounting with 2 self tapping screws
  - M3 x 6mm
  - Red indicator marks

#### Bridgelux Vero 13 LED Module

**Model names**
- Vero 13 BXRC-27E2000-C-xx
- Vero 13 BXRC-27G2000-C-xx
- Vero 13 BXRC-27H2000-C-xx
- Vero 13 BXRC-30E2000-C-xx
- Vero 13 BXRC-30G2000-C-xx
- Vero 13 BXRC-30H2000-C-xx
- Vero 13 BXRC-35E2000-C-xx
- Vero 13 BXRC-40E2000-C-xx
- Vero 13 BXRC-50C2000-C-04

**Mounting**
- Direct mounting with 2 self tapping screws
  - M3 x 6mm
  - Blue indicator marks

#### Bridgelux Vero 18 LED Module

**Model names**
- Vero 18 BXRC-27E4000-F-xx
- Vero 18 BXRC-27G4000-F-xx
- Vero 18 BXRC-27H4000-F-xx
- Vero 18 BXRC-30E4000-F-xx
- Vero 18 BXRC-30G4000-F-xx
- Vero 18 BXRC-30H4000-F-xx
- Vero 18 BXRC-35E4000-F-xx
- Vero 18 BXRC-40E4000-F-xx
- Vero 18 BXRC-50C4000-F-04

**Mounting**
- Direct mounting with 2 self tapping screws
  - M3 x 6mm
  - Blue indicator marks

### Bridgelux LED Modules

#### Bridgelux V series V6/V8/V10 COB

**Model names**
- BXRE-27G0800-A-03
- BXRE-27G0800-B-03
- BXRE-27G0800-C-03
- BXRE-30E0800-A-03
- BXRE-30E0800-B-03
- BXRE-30G0800-A-03
- BXRE-30G0800-B-03
- BXRE-30G0800-C-04
- BXRE-35E0800-A-03
- BXRE-35E0800-B-03
- BXRE-40E0800-A-03
- BXRE-40E0800-B-03
- BXRE-50C0800-A-04
- BXRE-50C0800-B-04

**Mounting**
- Direct mounting with 2 self tapping screws
  - M3 x 6mm
  - Red indicator marks
  - With Bridgelux V8 holder BATLAB-0401

#### Bridgelux ES Star array COB

**Model names**
- BXRA-27E0540-A-03
- BXRA-27E0740-A-03
- BXRA-27G0540-A-03
- BXRA-27G0740-A-03
- BXRA-30E0540-A-03
- BXRA-30E0740-A-03
- BXRA-30G0540-A-03
- BXRA-30G0740-A-03
- BXRA-35E0800-B-03
- BXRA-35E1200-B-03
- BXRA-35E2000-B-03
- BXRA-40E0950-B-03
- BXRA-40E1350-B-03
- BXRA-40E2200-B-03
- BXRA-50C1100-B-xx
- BXRA-50C2600-B-xx
- BXRA-56C1100-B-xx
- BXRA-56C1600-B-xx
- BXRA-56C2600-B-xx

**Mounting**
- Direct mounting with 2 self tapping screws
  - M3 x 6mm
  - Red indicator marks

#### Bridgelux ES Rectangle array COB

**Model names**
- BXRA-27E0800-B-03
- BXRA-27E1200-B-03
- BXRA-27E2000-B-03
- BXRA-27G0800-B-03
- BXRA-27G1200-B-03
- BXRA-27G2000-B-03
- BXRA-30E0800-B-03
- BXRA-30E1200-B-03
- BXRA-30E2000-B-03
- BXRA-30G0800-B-03
- BXRA-30G1200-B-03
- BXRA-30G2000-B-03
- BXRA-35E0800-B-03
- BXRA-35E1200-B-03
- BXRA-35E2000-B-03
- BXRA-40E0950-B-03
- BXRA-40E1350-B-03
- BXRA-40E2200-B-03
- BXRA-50C1100-B-xx
- BXRA-50C2600-B-xx
- BXRA-56C1100-B-xx
- BXRA-56C1600-B-xx
- BXRA-56C2600-B-xx

**Mounting**
- Direct mounting with 2 self tapping screws
  - M3 x 6mm
  - Blue indicator marks
  - With Zhaga Book 3 LED holder
  - Green indicator marks
  - BJB spotlight connector 47.319.2040
  - Tyco Electronics Z50 holder with optic attachment 2213130-2
### Mounting Options

#### Citizen Citiled

**Citizen Citiled CLL022 LED COB**

- **Model names**
  - CLL022-1202A5
  - CLL022-1203A5
  - CLL022-1204A5

- **Mounting**
  - Direct mounting with 2 self tapping screws M3 x 6mm
  - With Zhaga Book 3 LED holder
    - Green indicator marks
    - Tyco Electronics Z50 low profile holder 2213130-1
    - Tyco Electronics Z50 holder with optic attachment 2213130-2
  - With spotlight connector
    - Green indicator marks
    - BJB Spotlight connector 47.319.6060

- **Model names**
  - CLL032-1205A5
  - CLL032-1206A5
  - CLL032-1208A5
  - CLL032-1212A5

- **Mounting**
  - Direct mounting with 2 self tapping screws M3 x 6mm
  - With Zhaga Book 3 LED holder
    - Green indicator marks
    - Tyco Electronics Z50 low profile holder 2213130-1
    - Tyco Electronics Z50 holder with optic attachment 2213130-2
  - With spotlight connector
    - Green indicator marks
    - BJB Spotlight connector 47.319.2020

#### Edison Opto LED Modules

**Edison Opto EdiPower II SD series**

- **Model names 15W-24W**
  - EdiPower II SD 2PSD15WW01P0200
  - EdiPower II SD 2PSD24WW01P0200

- **Mounting**
  - Direct mounting with 2 self tapping screws M3 x 6mm side holes
  - Red indicator marks

- **Model names 40W-50W**
  - EdiPower II SD 2PSD40NW05P03001
  - EdiPower II SD 2PSD50NW05P03001

- **Mounting**
  - Direct mounting with 2 self tapping screws M3 x 6mm side holes
  - Green indicator marks

**Edison Opto EdiPower II HS-HV series**

- **Model names 15W-24W**
  - EdiPower II HS 2PHV15CW06P02001
  - EdiPower II HS 2PHV15NW05P02001
  - EdiPower II HS 2PHV15WW03P02001
  - EdiPower II HS 2PHV24CW06P02001
  - EdiPower II HS 2PHV24NW05P02001
  - EdiPower II HS 2PHV24WW03P02001

- **Mounting**
  - Direct mounting with 2 self tapping screws M3 x 6mm side holes
  - Red indicator marks

**Edison Opto EdiPower II HR**

- **Model names 13W**
  - EdiPower II HR 2PHR13CW11P02001
  - EdiPower II HR 2PHR13NW11P02001
  - EdiPower II HR 2PHR13WW05P02001

- **Mounting**
  - Direct mounting with 2 self tapping screws M3 x 6mm side holes
  - Red indicator marks

- **Model names 24W-35W**
  - EdiPower II HR 2PHR24CW11P03001
  - EdiPower II HR 2PHR24NW11P03001
  - EdiPower II HR 2PHR24WW05P03001
  - EdiPower II HR 2PHR35CW11P03001
  - EdiPower II HR 2PHR35NW11P03001
  - EdiPower II HR 2PHR35WW05P03001
**Edison Opto LED Modules**

**EdiPower II HR – continued**

### Mounting
- Direct mounting with 2 self tapping screws
- M3 x 6 mm side holes
- Green indicator marks

### Edison Opto Edipower II HM

#### Model Names 5W - 9W
- 2PHM05WW27P12001
- 2PHM05NW27P12001
- 2PHM05CW27P12001
- 2PHM09WW27P12001
- 2PHM09NW27P12001
- 2PHM09CW27P12001

#### Mounting
- Direct mounting with 2 self tapping screws
- M3 x 6 mm
- Red indicator marks
- With Zhaga Book 3 LED holder
- Green indicator marks
- Tyco Electronics Z50 low profile holder
  - Tyco Electronics Z50 holder with optic attachment
  - LG Innotek 10/13/17/24W COB
- Tyco Electronics Z50 holder with optic attachment
- BJB Spotlight connector 47.319.6060

#### Model Names 16W - 30W
- 2PHM16WW27P13001
- 2PHM16NW27P13001
- 2PHM16CW27P13001
- 2PHM30WW27P13001
- 2PHM30NW27P13001
- 2PHM30CW27P13001

#### Mounting
- Direct mounting with 2 self tapping screws
- M3 x 6 mm
- Red indicator marks
- With Zhaga Book 3 LED holder
- Green indicator marks
- Tyco Electronics Z50 low profile holder
- BJB Spotlight connector 47.319.2020
- Tyco Electronics Z50 holder with optic attachment

### LG Innotek

**LG Innotek**

#### LG Innotek 10/13/17/24W COB

#### Model names
- LEMWM18580HGxxxx
- LEMWM18580JGxxxx
- LEMWM18580LGxxxx
- LEMWM18680HGxxxx
- LEMWM18680JGxxxx
- LEMWM18680LGxxxx
- LEMWM18690LG10A0
- LEMWM18780HGxxxx
- LEMWM18780JGxxxx
- LEMWM18780LGxxxx
- LEMWM18880HGxxxx
- LEMWM18880LGxxxx

#### Mounting
- Direct mounting with 2 self tapping screws
- M3 x 6 mm side holes
- Green indicator marks

### Philips Lumileds

**Philips Lumileds**

#### Luxeon COB 1204 - 1205 - 1208

#### Model names
- Luxeon COB LHC1-2780-1204
- Luxeon COB LHC1-3080-1204
- Luxeon COB LHC1-3990-1204
- Luxeon COB LHC1-4080-1204
- Luxeon COB LHC1-5080-1204
- Luxeon COB LHC1-2780-1205
- Luxeon COB LHC1-3080-1205
- Luxeon COB LHC1-3990-1205
- Luxeon COB LHC1-4080-1205
- Luxeon COB LHC1-5080-1205
- Luxeon COB LHC1-2780-1208
- Luxeon COB LHC1-3080-1208
- Luxeon COB LHC1-3990-1208
- Luxeon COB LHC1-4080-1208
- Luxeon COB LHC1-5080-1208

#### Mounting
- Direct mounting with 2 self tapping screws
- M3 x 6 mm
- Orange indicator marks
- With Zhaga Book 3 LED holder
- Green indicator marks
- BJB Spotlight connector 47.319.2020
- Tyco Electronics Z50 low profile holder
- Tyco Electronics Z50 holder with optic attachment
### Mounting Options

#### Philips Lumileds Luxeon COB

**1204 - 1205 - 1208 – continued**

**Model names**
- Luxeon K12 LXK8-PW27-0012A
- Luxeon K12 LXK8-PW35-0012A
- Luxeon K12 LXK8-PW40-0012A
- Luxeon K12 LXK8-PW50-0012
- Luxeon K12 LXK9-PW27-0012
- Luxeon K12 LXK9-PW30-0012
- Luxeon K12 LXK9-PW35-0012
- Luxeon K12 LXK9-PW40-0012
- Luxeon K16 LXK8-PW27-0016A
- Luxeon K16 LXK8-PW30-0016A
- Luxeon K16 LXK8-PW35-0016A
- Luxeon K16 LXK8-PW40-0016A
- Luxeon K16 LXK8-PW50-0016
- Luxeon K16 LXK9-PW27-0016
- Luxeon K16 LXK9-PW30-0016
- Luxeon K16 LXK9-PW35-0016
- Luxeon K16 LXK9-PW40-0016

**Mounting**
- Direct mounting with 2 self tapping screws
- M3 x 6 mm
- Red indicator marks
- With Zhaga Book 3 LED holder
- Green indicator marks
- BJB spotlight connector 47.319.2070

#### Prolight Opto

**Prolight Opto PACB COB series**

**Model names**
- PACB-5xxx-xxxx
- PACB-7xxx-xxxx
- PACB-9xxx-xxxx

**Mounting**
- Direct mounting with 2 self tapping screws
- M3 x 6mm
- Red indicator marks
- With Zhaga Book 3 LED holder
- Green indicator marks
- Tyco Electronics Z50 low profile holder 2213130-1
- Tyco Electronics Z50 holder with optic attachment 2213130-2
- With Spotlight connector
- Blue indicator marks
- BJB Spotlight connector 47.319.6060

**Prolight Opto PANA COB series**

**Model names**
- PANA-10xxx-xxxx
- PANA-12xxx-xxxx
- PANA-17xxx-xxxx
- PANA-24xxx-xxxx

**Mounting**
- Direct mounting with 2 self tapping screws
- M2 x 6mm
- Orange indicator marks
- With Zhaga Book 3 LED holder
- Green indicator marks
- BJB spotlight connector 47.319.2040

**Prolight Opto PABA COB series**

**Model names**
- PABA-10Fxx-xxxx
- PABA-15Fxx-xxxx
- PABA-22xxx-xxxx
- PABA27xxx-xxxx
- PABA35xxx-xxxx
- PABA50xxx-xxxx

**Mounting**
- Direct mounting with 2 self tapping screws
- M3 x 6mm
- Yellow indicator marks
- With Zhaga Book 3 LED holder
- Green indicator marks
- BJB spotlight connector 47.319.2040
Mounting Options

Tridonic

Tridonic Talexx Stark SLE GEN3

Model names
• STARK-SLE-G3-19-xxx
• STARK-SLE-G3-23-xxx

Mounting
• Direct mounting with 2 self tapping screws
  M3 x 6mm
  Green indicator marks

Tridonic Talexx Stark SLE GEN3 LES-10

Model names
• STARK-SLE-PURE-G3-10-xxx

Mounting
• With Zhaga Book 3 LED holder
  Green indicator marks
  BJB spotlight connector 47.319.2070
• With spotlight connector
  Blue indicator marks
  BJB Spotlight connector 47.319.6060

Tridonic Talexx Stark SLE Mini Classic GEN3 LES-17

Model names
• STARK-SLE-PURE-G3-17-xxx

Mounting
• Direct mounting with 2 self tapping screws
  M3 x 6mm
  Red indicator marks
• With Zhaga Book 3 LED holder
  Green indicator marks
  BJB Spotlight connector 47.319.2020

Xicato

Xicato XSM LED modules

Model names
• XSM8027-xxx
• XSM8030-xxx
• XSM-8040-xxx
• XSM-9527-xxx
• XSM-9530-xxx
• XSM-9540-xxx
• XSMV830-xxx

Mounting
• Direct mounting with 2 self tapping screws
  M3 x 12mm
  Red indicator marks

COB’s with a small LES area through use of external LED holder BJB

Specifically for COB’s with a small LES area, BJB has developed a new range of LED spotlight connectors which standard fit on the MechaTronix LED coolers.

Model names
• Citizen CHILED COB CL-L020 - LC-L022
  BJB Spotlight connector 47.319.6060
• Cree COB CXA 13xx series
  BJB Spotlight connector 47.319.6101
• Cree COB CXA 1507 - CXA 1512
  BJB Spotlight connector 47.319.6120
• Edison Opto COB HM05 - HM09
  BJB Spotlight connector 47.319-6060
• Lextar COB Nimbus 1500
  BJB Spotlight connectors 47.319.6110
• Osram COB Soleric S13 - X13
  BJB Spotlight connectors 47.319.6110
• Tridonic Talexx Stark COB SLE LES 10
  BJB Spotlight connector 47.319.6060

Mounting
• Direct mounting with 2 self tapping screws
  M3 x 6mm
  Red indicator marks

To determine the mounting holes you need, please use the corresponding flip chart on www.led-heatsink.com/download, or request a hard copy flip chart with easy to use transparant overlays.

MechaTronix recommends the use of a high thermal conductive interface between the LED module and the LED cooler.

Either thermal grease, a thermal pad or a phase change thermal pad thickness 0.1-0.15mm is recommended.

Thermal pads or phase change thermal pads can be pre-applied from MechaTronix.
## ModuLED Nano Modular Passive LED Cooler

### Drawings & Dimensions

*Example: ModuLED Nano 7050*

![ModuLED Nano 7050 Diagram](image)

### Thermal Data

*Example: ModuLED Nano 7050 Diagram*

#### Thermal Data Table

<table>
<thead>
<tr>
<th>Dissipated Power Pd(W)</th>
<th>LED Light efficiency, ηL (%)</th>
<th>Heat sink to ambient thermal resistance Rhs-amb (°C/W)</th>
<th>Heat sink to ambient temperature rise Ths-amb (°C)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>17%  20%  25%</td>
<td>ModuLED Nano 7050  ModuLED Nano 7080  ModuLED Nano 7050  ModuLED Nano 7080</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>6.0   6.3   6.7</td>
<td>3.10  2.70  16</td>
<td>13</td>
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<tr>
<td>10</td>
<td>12.0  12.5  13.3</td>
<td>2.70  2.30  27</td>
<td>23</td>
</tr>
<tr>
<td>15</td>
<td>18.0  18.8  20.0</td>
<td>2.40  2.10  36</td>
<td>31</td>
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<td>20</td>
<td>24.0  25.0  26.7</td>
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<td>30</td>
<td>36.1  37.5  40.0</td>
<td>-      1.80  -</td>
<td>53</td>
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</tbody>
</table>

#### Thermal Drawings

*Heat sink to ambient temperature rise Ths-amb (°C)*

- **ModuLED Nano 7050**
- **ModuLED Nano 7080**

![Thermal Drawings](image)

### Diagrams

- **Diagram 1**: ModuLED Nano 7050 with thermal data
- **Diagram 2**: Comparison of temperature rise for different power levels

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