



2023-12



Asahi Crosslink

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# AL-10M-DUV280

## Product Datasheet

### Properties

LED Compatibility [distribution angle 10°±]

3.50×3.50mm, flat top

UV-C | UV-B

Material: DUV280 Clear Silicone

A50 hardness

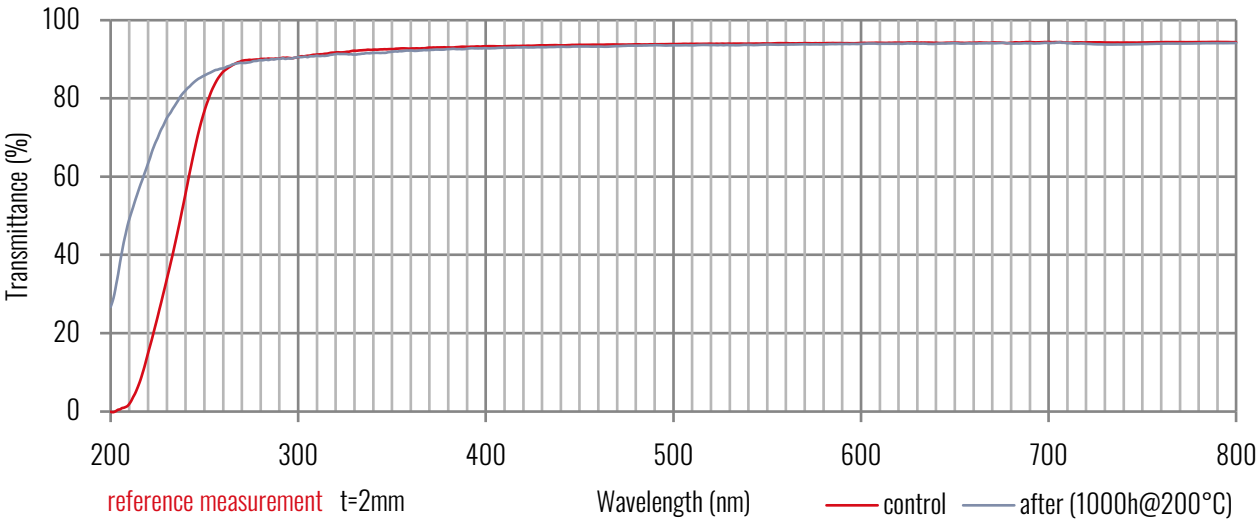
ROHS3 Compliant

Refractive index 1.40  
(25°C, D-line 589nm)

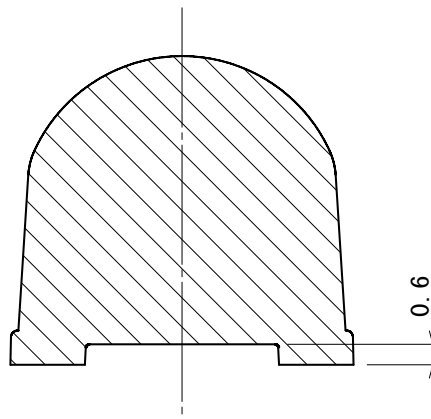
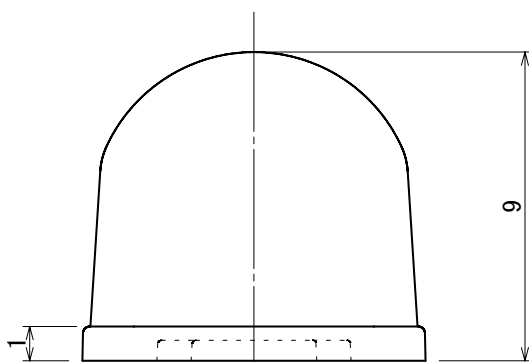
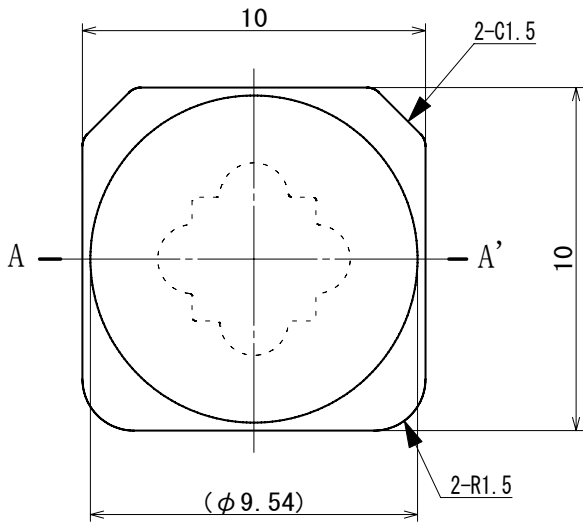
REACH Unaffected



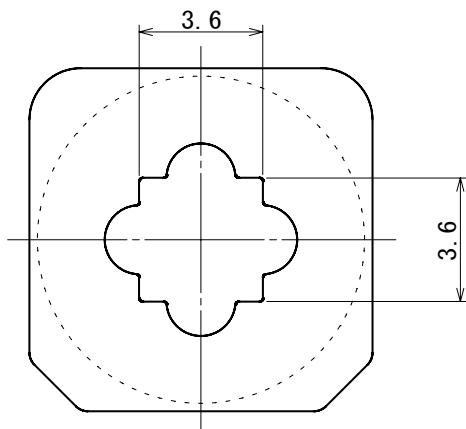
| Test Type                      | Test Method              | Test Conditions              | Period     | Appearance                    | 280nm Transmittance<br>Post-Test (t=2mm) |
|--------------------------------|--------------------------|------------------------------|------------|-------------------------------|------------------------------------------|
| Thermal Shock                  | -                        | -40°C > 100°C<br>15min 15min | 100 cycles | No cracks or other<br>defects | 84.5%                                    |
| High Temperature<br>Storage    | JEITA ED-4701<br>200 201 | Ta=150°C                     | 1,000hr    | No cracks or other<br>defects | 82.7%                                    |
| Humidity Resistance            | -                        | Ta=30°C RH=60%               | 1,000hr    | No cracks or other<br>defects | 83.5%                                    |
| Low Temperature<br>Storage     | JEITA ED-4701<br>200 202 | Ta=-40°C                     | 1,000hr    | No cracks or other<br>defects | 88.4%                                    |
| Solvent Resistance             | JEITA ED-4701<br>500 501 | Solvent: IPA<br>23±5°C, 5min | 1 time     | No cracks or other<br>defects | 89.1%                                    |
| High Temperature<br>Resistance | -                        | Ta=200°C                     | 500hr      | No cracks or other<br>defects | 89.1%                                    |



| 1 |                         | 2                           |     | 3    |          | 4 [ C / P ] |      | CAD<br>ZRD |
|---|-------------------------|-----------------------------|-----|------|----------|-------------|------|------------|
| ○ | SPECIFICATIONS<br><仕様図> | SURFACE TREATMENT<br><表面処理> | SYM | DATE | REVISION | REVR        | APPR |            |
|   | REFERENCE<br><参考図>      | HEAT TREATMENT<br><熱処理>     | △ x |      |          |             |      |            |
|   |                         | FINISH<br><仕上げ>             | △ x |      |          |             |      |            |



A-A' 断面



NOTE)

- ・指示なき公差：C適用
- ・推奨LEDサイズ 3.5×3.5mm
- ・レンズ曲率は参考形状となります。

| TOLERANCE UNLESS SPECIFIED |      |      |      | ORIGINAL DATE<br>2021/12/23 |                                                                                     | MATERIAL (COMPOUND)<br>シリコン |               | TITLE<br>AL-10M-DUV280   |               |             |           |
|----------------------------|------|------|------|-----------------------------|-------------------------------------------------------------------------------------|-----------------------------|---------------|--------------------------|---------------|-------------|-----------|
| RANGE                      | A    | B    | C    | SCALE<br>5:1                | UNIT<br>mm                                                                          | COLOR<br>透明                 | HARDNESS<br>— | DRAWING NO.<br>21122301M |               |             |           |
| LESS THAN 6                | ±0.3 | ±0.1 | ±0.1 | A 4                         |  |                             |               | DESIGN                   | DRAWN         | CHECKED     | APPROVED  |
| OVER 6 TO 20               | ±0.3 | ±0.2 | ±0.1 |                             |                                                                                     |                             |               | T. Motoyanagi            | T. Motoyanagi | T. Kanahira | M. Tasaki |
| OVER 20 TO 50              | ±0.5 | ±0.3 | ±0.2 |                             |                                                                                     |                             |               |                          |               |             |           |
| OVER 50 TO 100             | ±1.0 | ±0.5 | ±0.3 |                             |                                                                                     |                             |               |                          |               |             |           |
| OVER 100 TO 300            | ±2.0 | ±1.0 | ±0.5 |                             |                                                                                     |                             |               |                          |               |             |           |
| OVER 300 TO 500            | ±5.0 | ±2.5 | ±1.0 |                             |                                                                                     |                             |               |                          |               |             |           |
| ANGLE                      | ±2°  |      |      |                             |                                                                                     |                             |               |                          |               |             |           |

**ASAHI RUBBER INC.**  
株式会社朝日ラバー



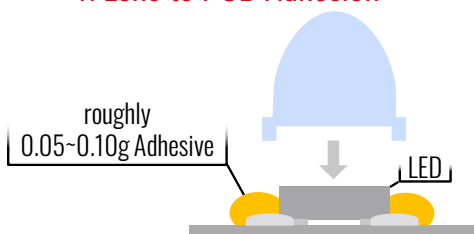
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# AL-10M-DUV280

## Product Datasheet

### Attachment Guide

#### 1. Lens to PCB Adhesion



Ensure no floating or tilting of lens before curing  
Recommended for opaque or room temp-curing adhesives

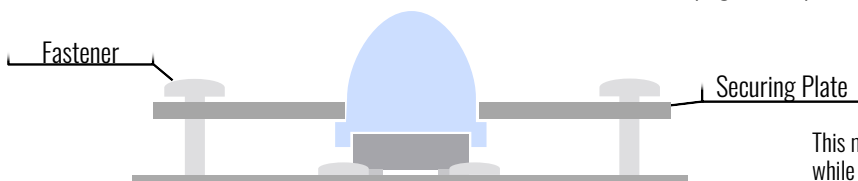
Ensure your selected adhesive:

- Is silicone based
- Has low siloxane levels
- Has high viscosity
- Has appropriate strength
- Is compatible with your processes
- Is suitable for the UV environment or is protected from the irradiation

#### 2. Mechanical

Secure a plate with a hole of ~5% larger diameter than the lens optic, fitted over the lens

Care must be taken to ensure no scraping or other physical damage to the lens optic when mounting



This method allows easier lens replacement while preserving the LED, where desired

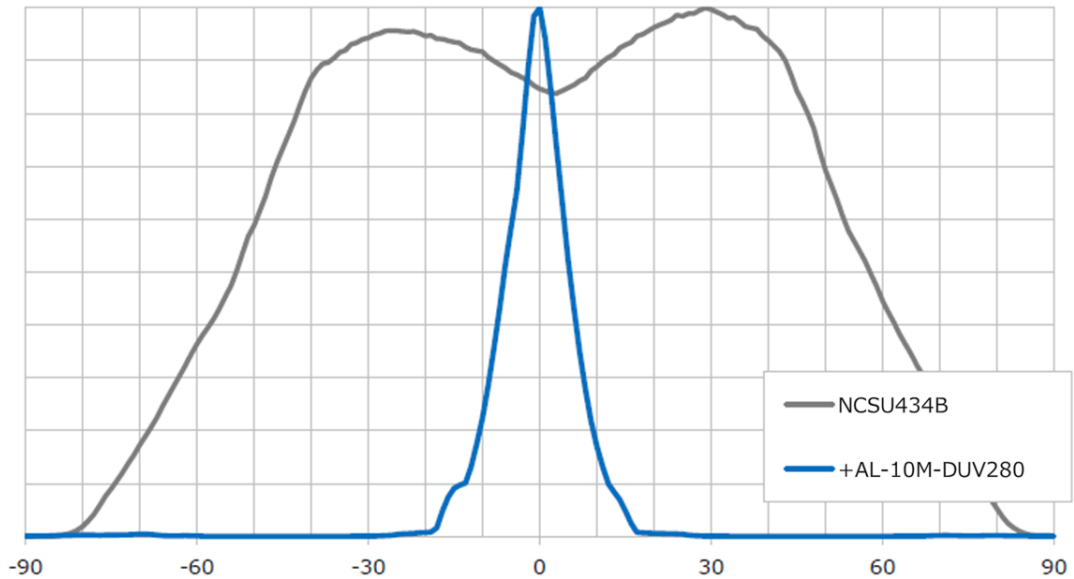


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# AL-10M-DUV280

Product Datasheet

## Photometrics



Directivity with NSCU434B ~10°

## Silicone Resin (DUV280) UV Durability Testing

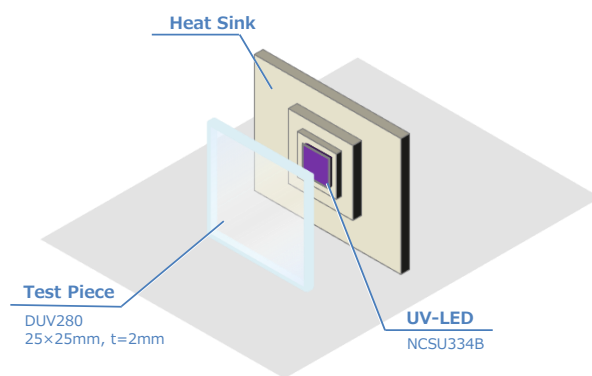
### Test Method

UV-LED lit for extended duration; collected pre- and post-test transmittance data compared.

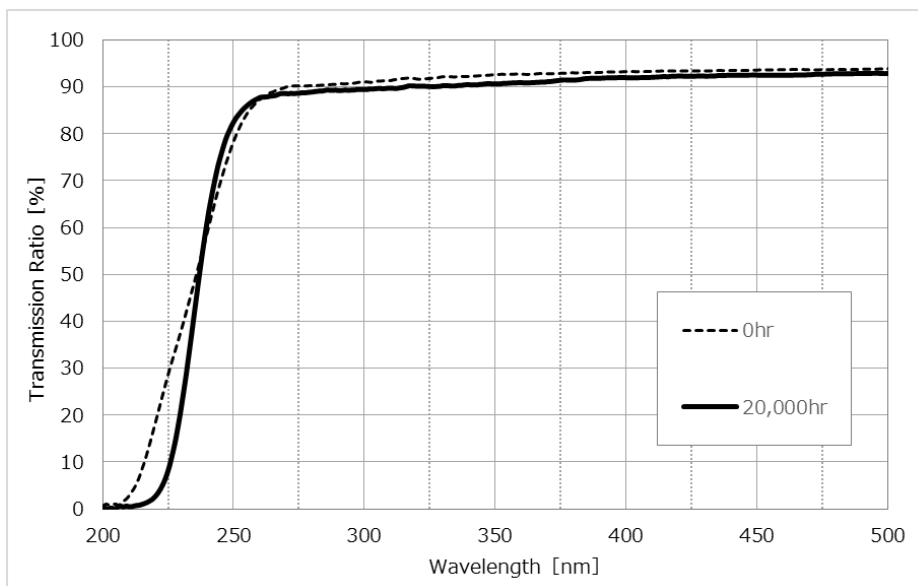
### Continuous Operation Test Description

|               |                                        |
|---------------|----------------------------------------|
| LED Package   | Nichia NCSU334B (@280nm)               |
| Drive Current | $I_F=500\text{mA}$ (specification max) |
| Radiant Flux  | $\Phi_e=70\text{mW}$ (@350mA)          |
| Cooling       | Heat sink with forced air              |
| Ambient Temp  | $T_A=25^\circ\text{C}$                 |
| Duration      | 20,000 hours                           |
| Distance      | ~2mm between LED and test piece        |

### Test Illustration



### Measured Results (Change in Transmittance after 20,000hr)



### Summary

No abnormal appearance (damage, cracks, discoloration, etc.) was confirmed after the test.