

— FPV ANTENNA

# NAOS

5.8 GHz FPV Circularly Polarized Lollipop Antenna

**SZW-N-5W49**

FREQUENCY  
**5000 to 7125 MHz**

POLARIZATION  
**RHCP or LHCP**

PEAK GAIN  
**Up to 5.5 dBi**

CONNECTOR  
**SMA Male**

**5.8 GHz FPV**    **5000 to 7125 MHz**

Covers 5.8 GHz FPV bands A, B, E, F and Raceband, plus 6 GHz video links

— Key Features

- 5000 to 7125 MHz, RHCP or LHCP
- 86% average efficiency
- IP65, 20 g max

## 1 Introduction

NAOS (SZW-N-5W49) is a circularly polarized lollipop antenna for 5.8 GHz FPV video links on drones, goggles and ground stations. The radiating element is sealed inside a 22.6 mm cap and fed through RG141 cable to a gold plated SMA male connector.

Circular polarization reduces multipath fading and keeps the video link stable as the aircraft rolls and banks. NAOS is available in RHCP or LHCP to match the transmitter and receiver, and the IP65 rated housing suits outdoor flying.

### — Features

- ◆ Frequency range: 5000 to 7125 MHz
- ◆ Circular polarization, RHCP or LHCP
- ◆ Average efficiency 86%, peak gain up to 5.5 dBi
- ◆ VSWR 2.2:1 max across the band
- ◆ IP65 waterproof housing
- ◆ Lightweight, 20 g max
- ◆ Gold plated SMA male connector
- ◆ Operating temperature: -45 to +85 °C

### — Applications

- ◆ FPV drone video transmitters (VTX)
- ◆ 5 to 7 GHz wireless video links
- ◆ FPV goggles and ground station receivers

## 2 Product Photos

Gold plated SMA male connector



Cap marking



Cable side



### 3 Product Specifications

|                                   |                                                                     |
|-----------------------------------|---------------------------------------------------------------------|
| Part Number                       | SZW-N-5W49                                                          |
| Frequency Range                   | 5000 to 7125 MHz                                                    |
| Average Efficiency                | 86% (73% min)                                                       |
| Peak Gain                         | 2.2 to 5.5 dBi (total)                                              |
| Average Gain                      | -0.7 dBi                                                            |
| VSWR                              | 2.2:1 max                                                           |
| Impedance                         | 50 $\Omega$                                                         |
| Polarization                      | RHCP or LHCP (specify when ordering)                                |
| Connector                         | SMA male (plug), gold plated                                        |
| Cable                             | RG141, black                                                        |
| Dimensions                        | Cap $\varnothing 22.6 \times 21.5$ mm, overall length $70 \pm 3$ mm |
| Weight                            | 20 g max                                                            |
| Waterproof Rating                 | IP65                                                                |
| Operating and Storage Temperature | -45 to +85 $^{\circ}\text{C}$                                       |

### 4 RF Performance by Band

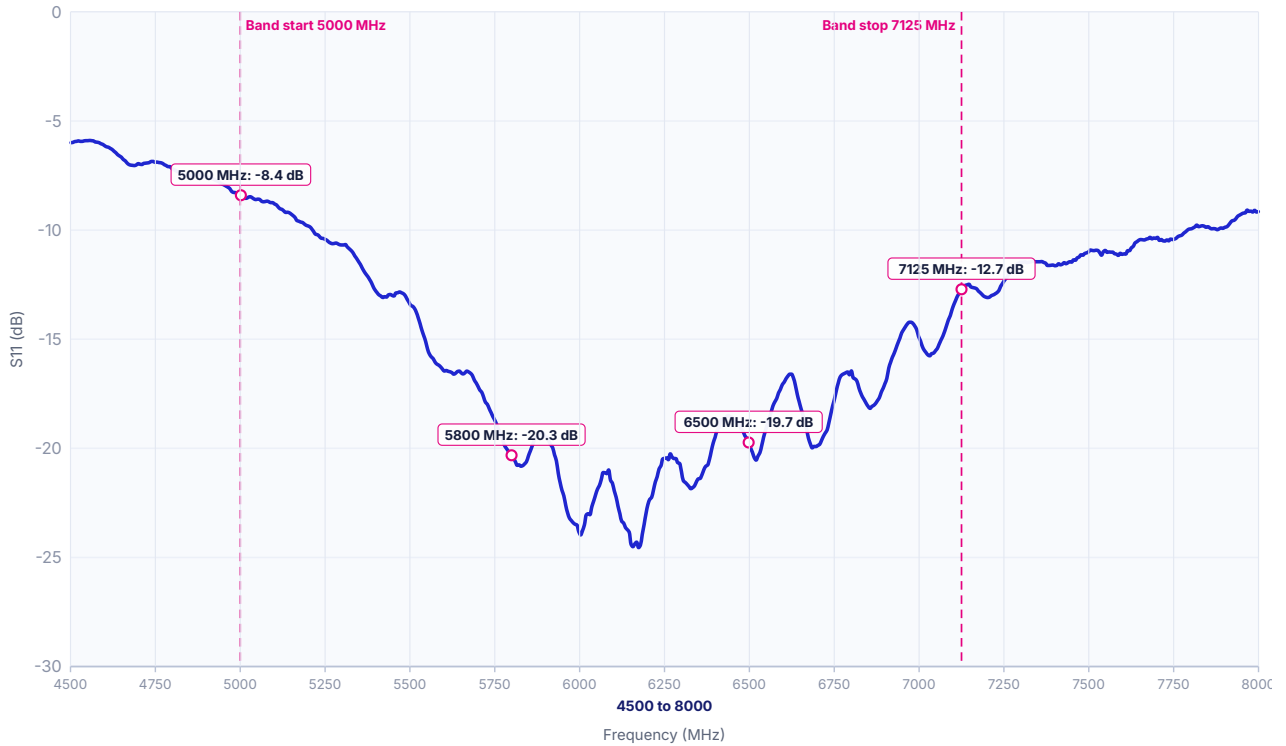
| Band           | Frequency (MHz) | Avg Efficiency (%) | Peak Gain (dBi) | Avg Gain (dBi) | VSWR (max) |
|----------------|-----------------|--------------------|-----------------|----------------|------------|
| 5.1 to 5.6 GHz | 5000 to 5640    | 82.6               | 3.73            | -0.83          | 2.23:1     |
| 5.8 GHz FPV    | 5640 to 5960    | 86.6               | 4.18            | -0.62          | 1.35:1     |
| 6 to 7 GHz     | 5960 to 7125    | 87.2               | 5.51            | -0.59          | 1.60:1     |

Measured in the Synzen 3D passive chamber, free space. Gain is total gain (H + V); peak gain is the maximum over the band.

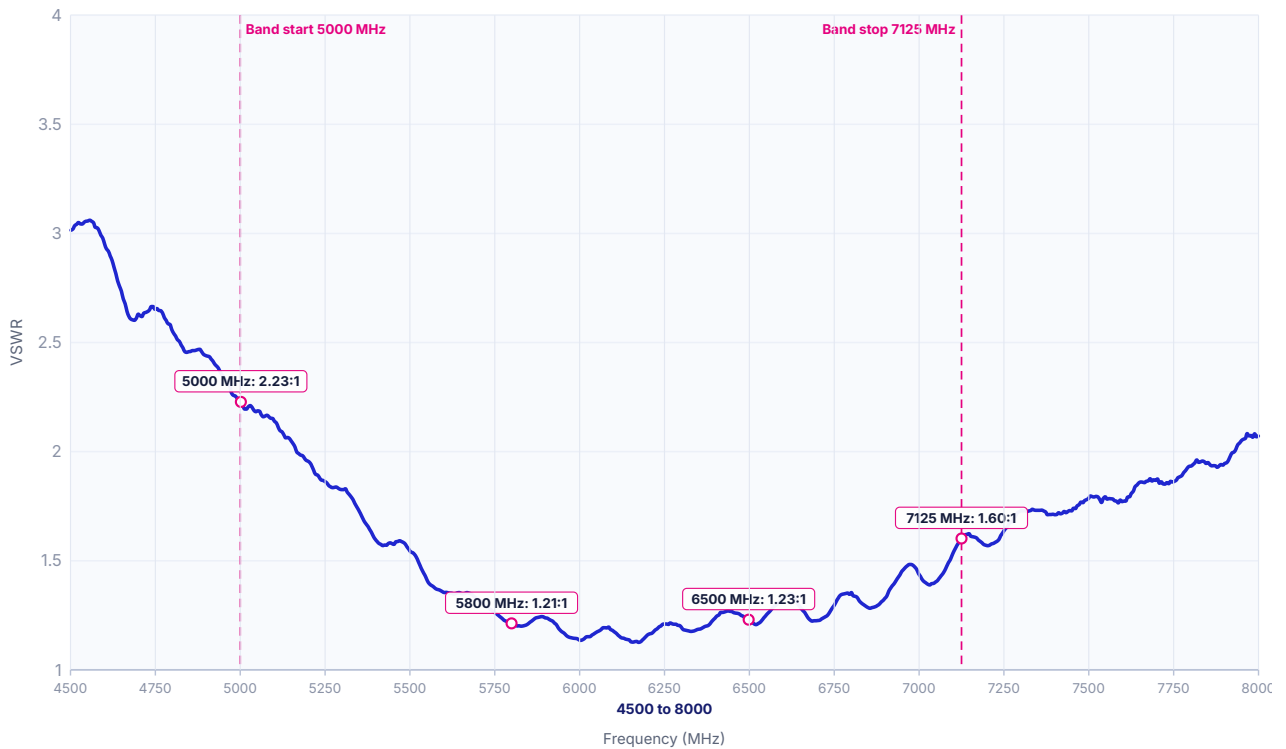
## 5 Return Loss and VSWR

Return Loss (S11)

Antenna only, without test board



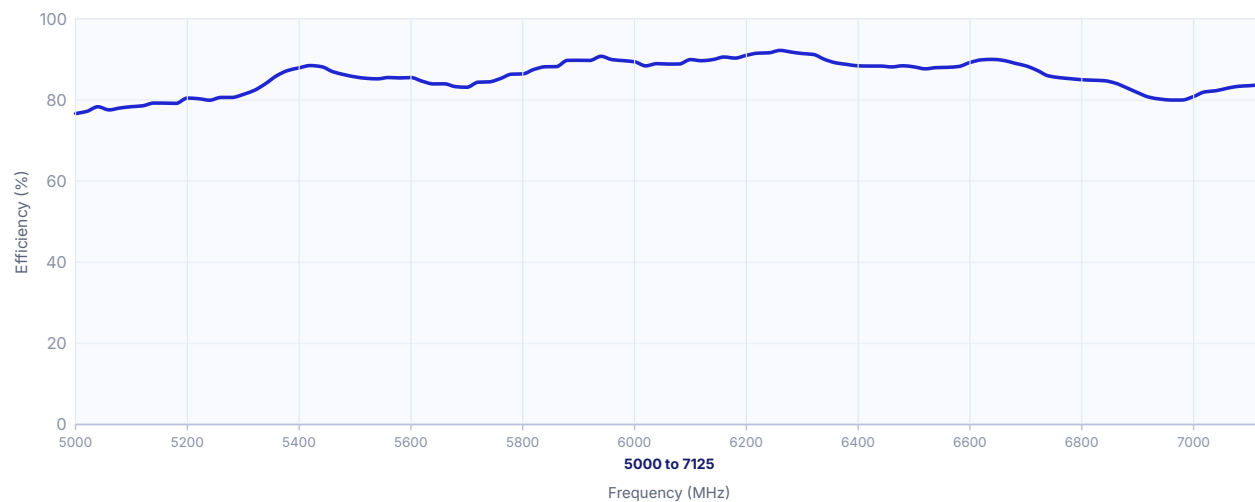
VSWR



## 6 Antenna Performance

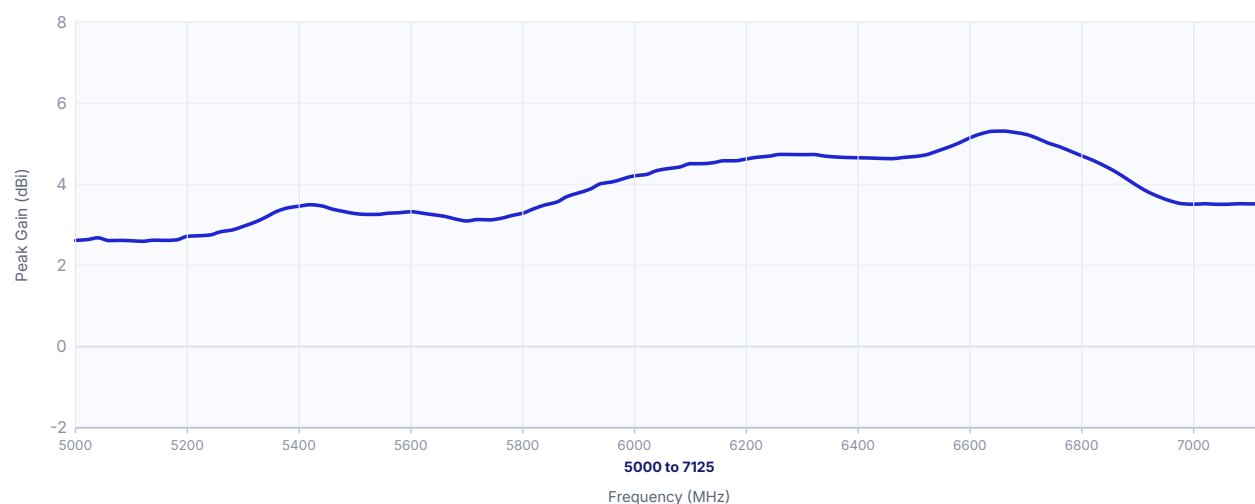
Total Efficiency

Free space

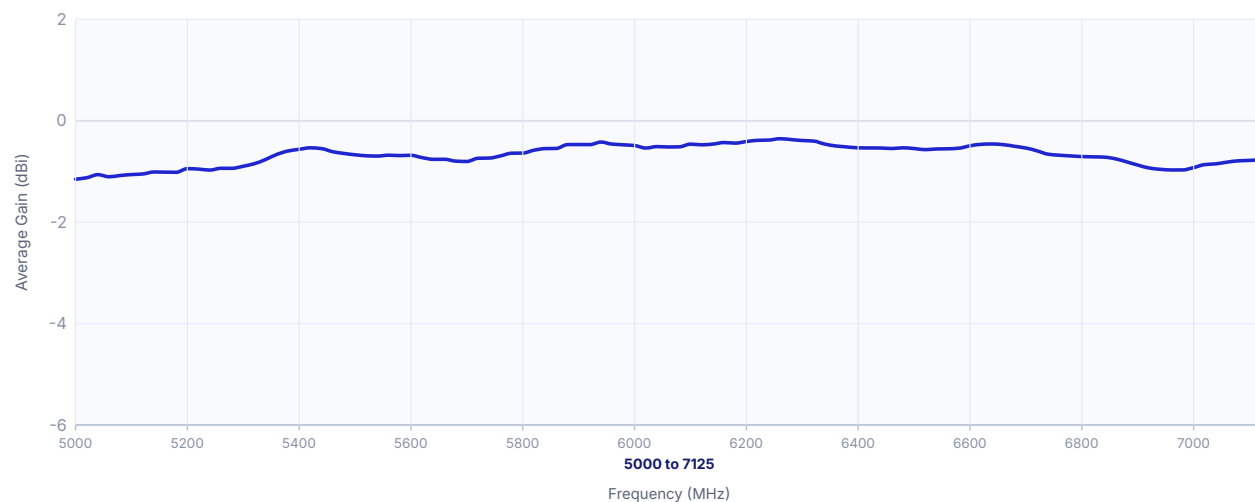


Peak Gain

Total gain (H + V)



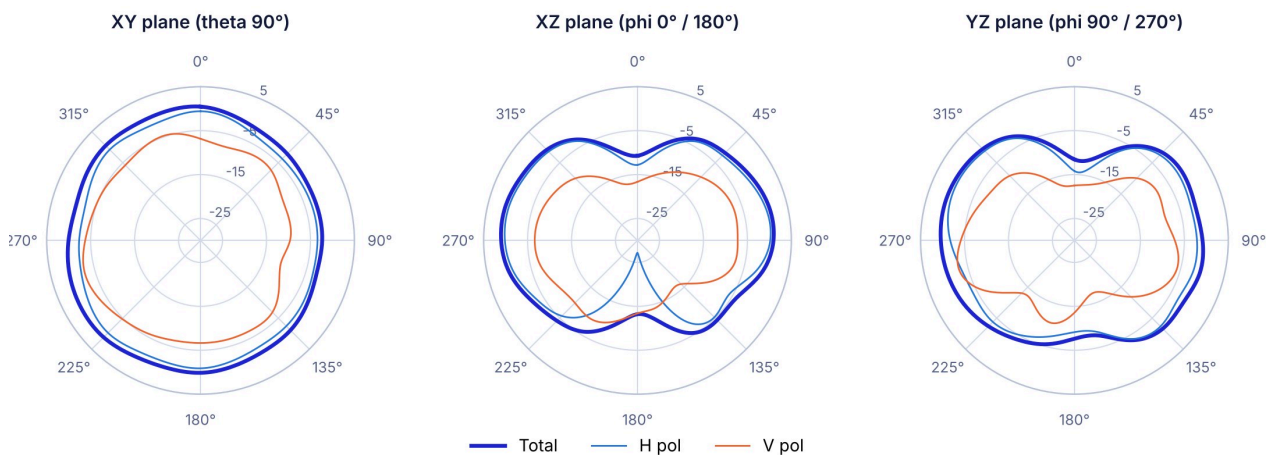
Average Gain



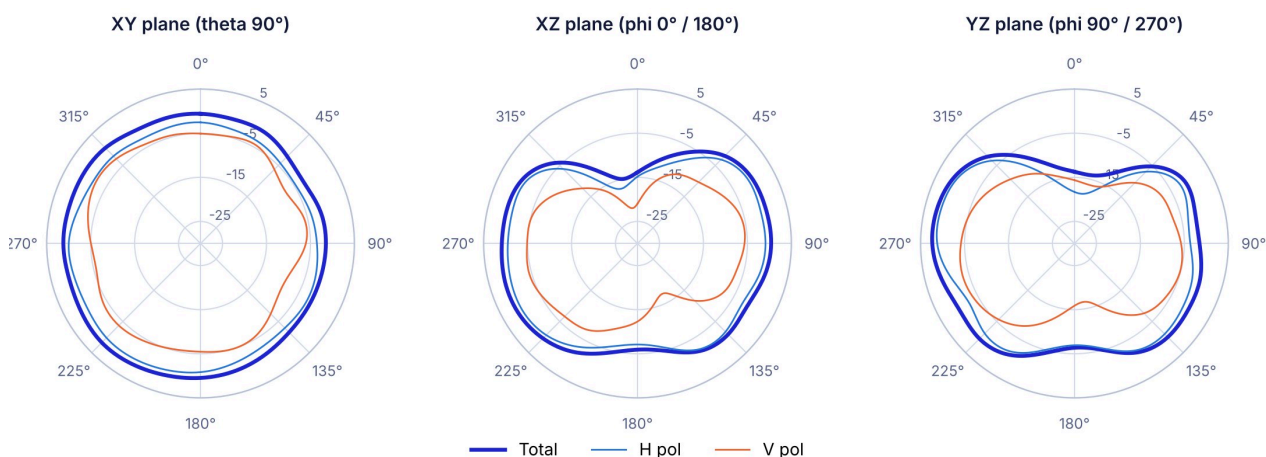
## 7 Radiation Patterns

TOTAL GAIN (H + V), FREE SPACE. THETA 0° IS THE ANTENNA AXIS (CAP END).

### 5800 MHz



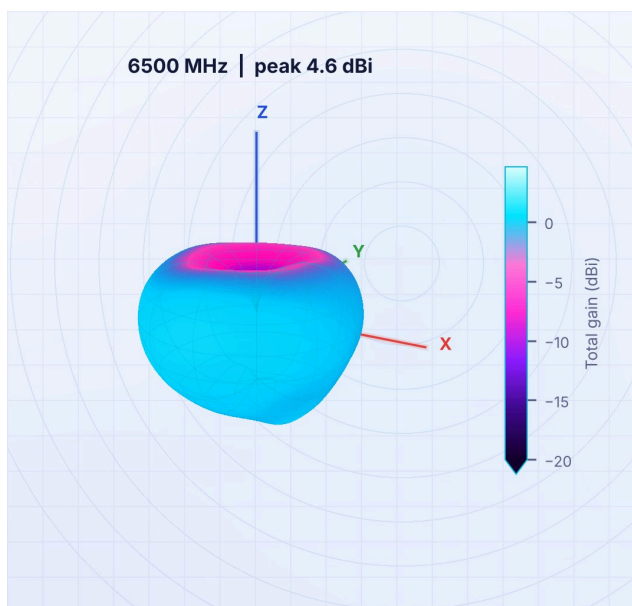
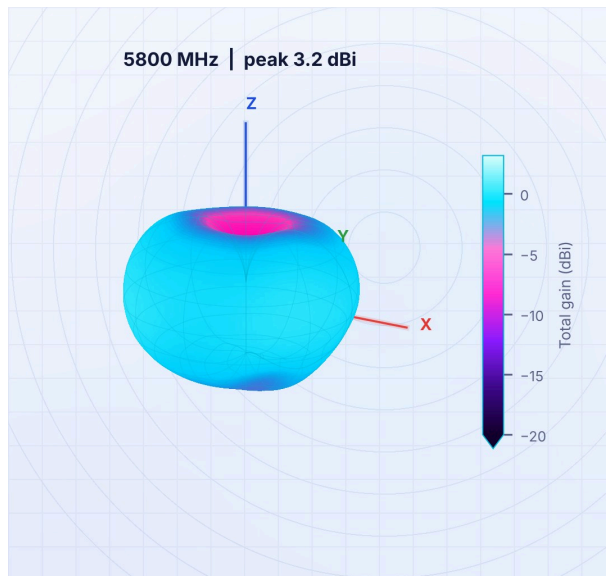
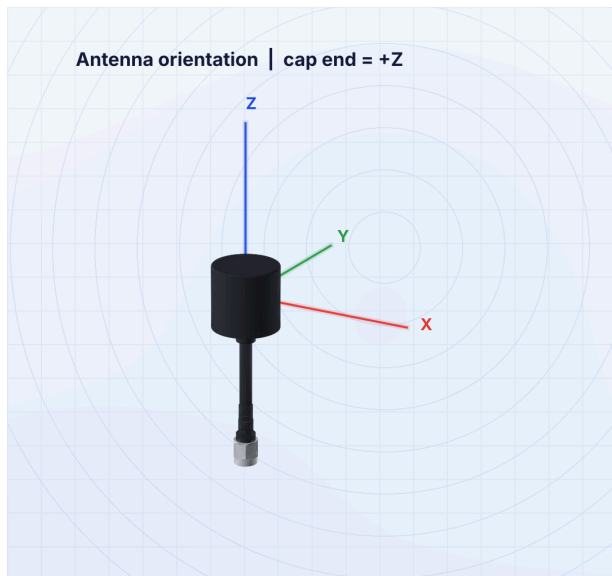
### 6500 MHz



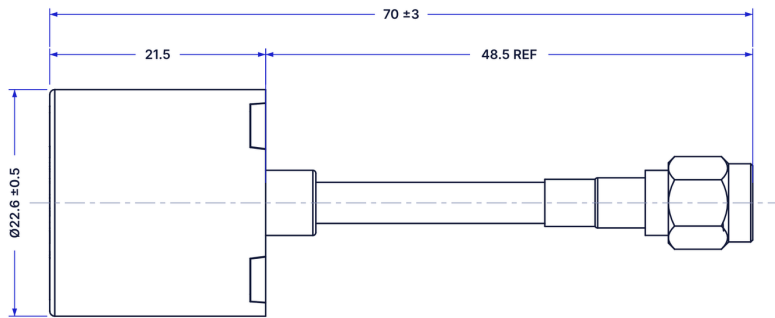
**8**

## 3D Radiation Patterns

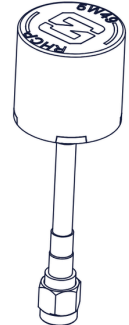
TOTAL GAIN (H + V), FREE SPACE.



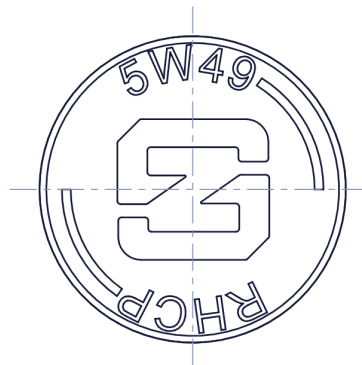
## 9 Mechanical Drawing



SIDE VIEW (SCALE 2:1)



ISOMETRIC (SCALE 0.95:1)



SZ logo, part code and polarization (RHCP shown)

CAP END VIEW, MARKING (SCALE 2:1)

Dimensions in mm. REF dimensions are for information only. Full drawing and 3D STEP model available on request.

## 10 Compliance

### ROHS

#### Compliant

Conforms to EU RoHS Directive 2011/65/EU as amended by Delegated Directive (EU) 2015/863.

### REACH

#### Compliant

Conforms to EU REACH Regulation (EC) No 1907/2006.

### CERTIFICATE

#### On request

A certificate of conformance is available upon request from sales@synzen.com.tw.

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