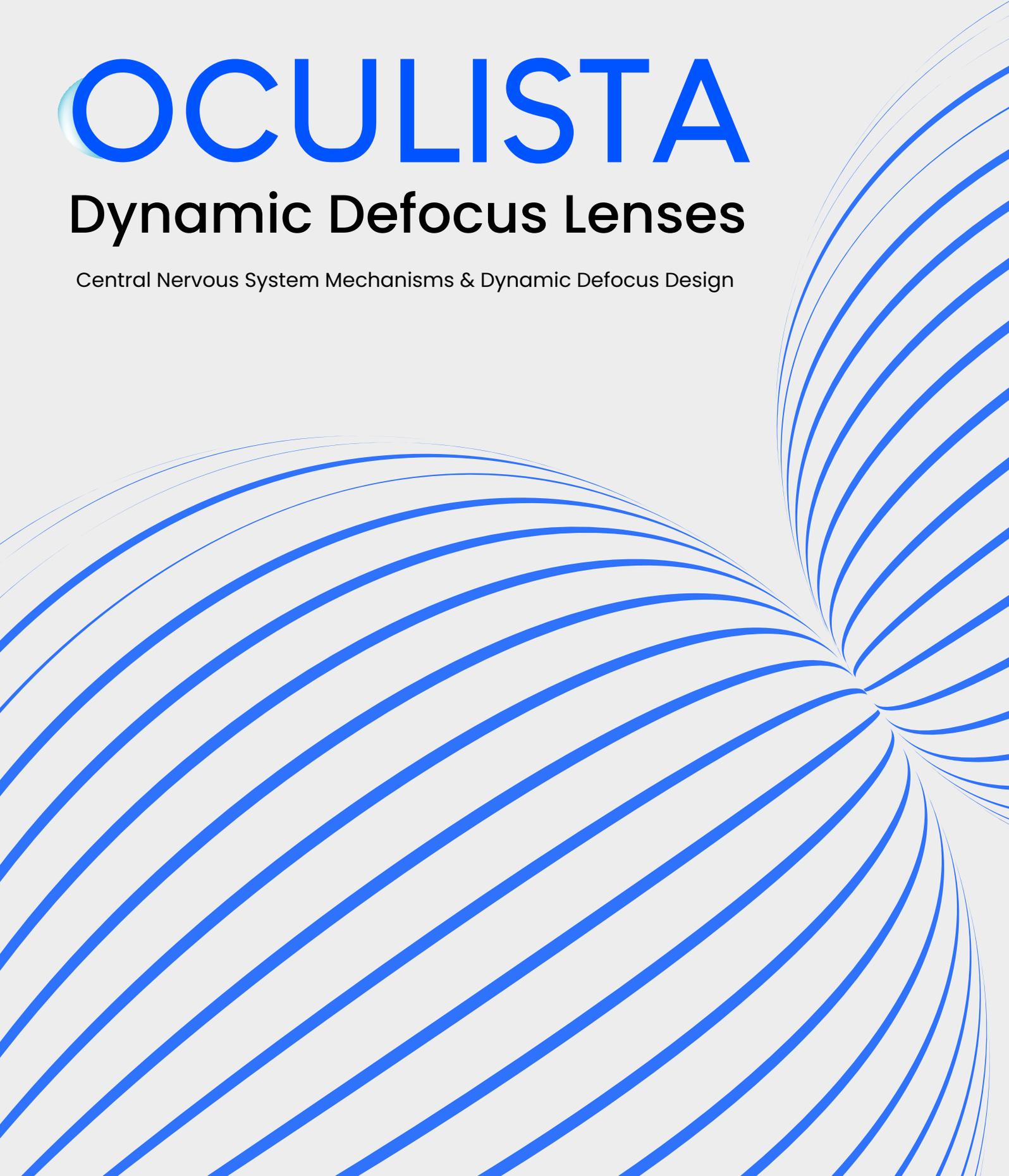


OCULISTA

Dynamic Defocus Lenses

Central Nervous System Mechanisms & Dynamic Defocus Design



About Rayzon

Founded in 2019 and headquartered in Changsha, China, Rayzon has branch offices in Germany, Hong Kong, Beijing, Shanghai, and Changsha. With business operations in over 60 countries and regions worldwide, Rayzon is an international eye health technology enterprise integrating R&D, manufacturing, marketing, and service.

Through independent R&D and strategic investment partnerships, Rayzon has gradually established a comprehensive product portfolio covering both optometry and ophthalmic surgery. Upholding the core philosophy of "Patients First," Rayzon drives growth through professionalism and innovation, working closely with leading global medical and research institutions to continuously develop products that better meet clinical and patient needs—contributing to improved eye health worldwide.

Evolution of Myopia Management

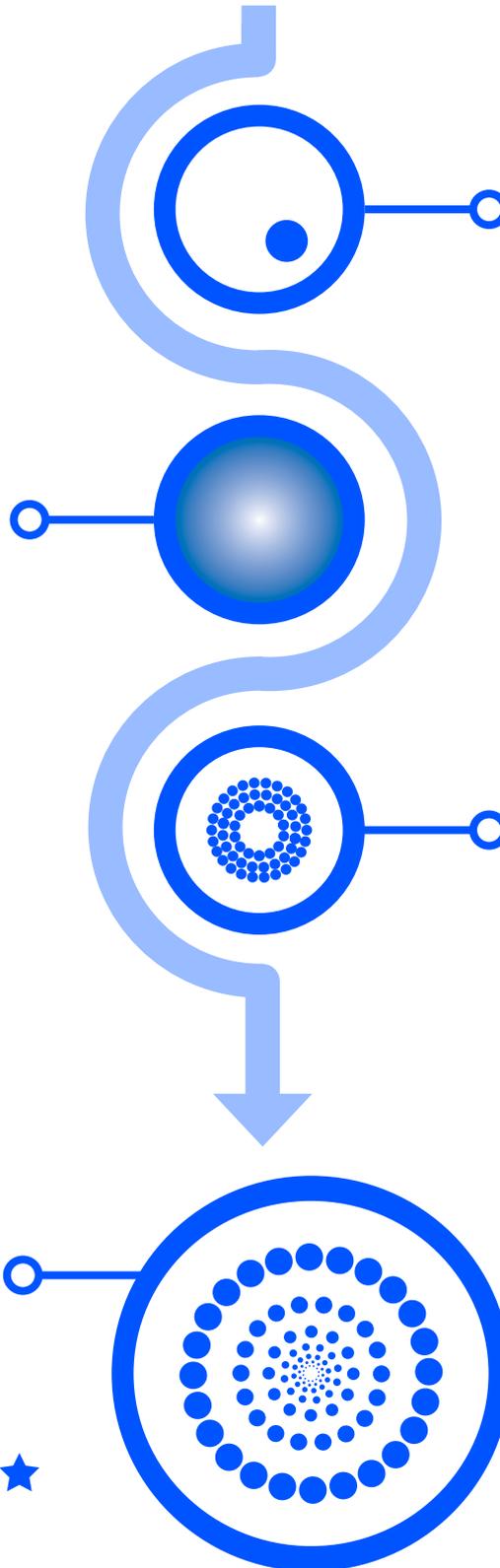
2nd Generation

Peripheral Defocus

Standard peripheral defocus lenses have limited stimulation to the peripheral retina.

Myopia Management: ★★

Visual Quality: ★★★★★



1st Generation

Bifocal & Progressive

Primarily addressed presbyopia and accommodative lag; little stimulation to the peripheral retina.

Myopia Management: ★

Visual Quality: ★★★

3rd Generation

Competitive Defocus

Competitive defocus lenses typically rely on increasing density and defocus power of lenslets to enhance peripheral retinal stimulation.

Myopia Management:

★★★★★

Visual Quality:

★★★

4th Generation

Dynamic Defocus

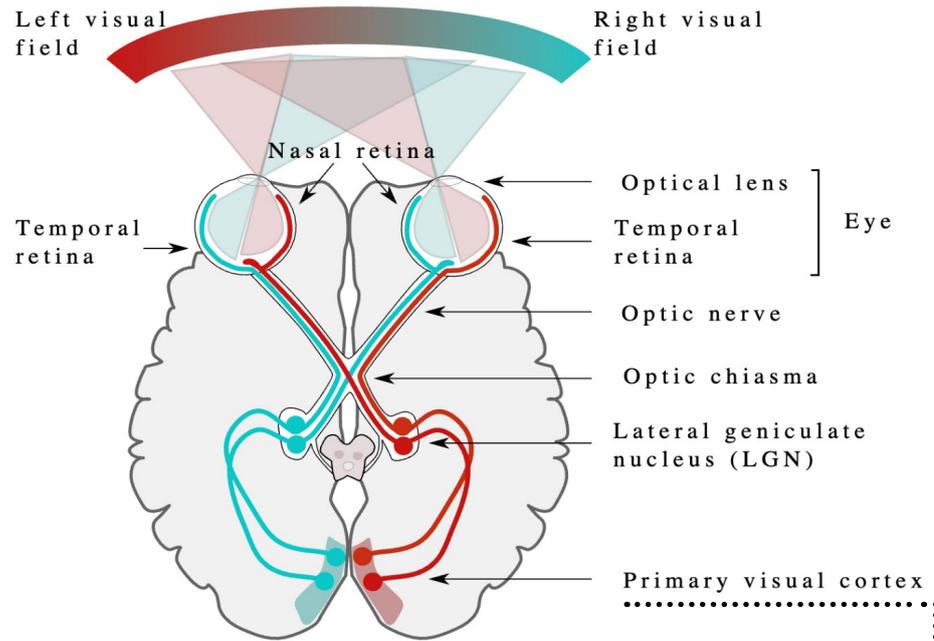
Dynamic Defocus design optimizes lenslets distribution, diameter, and defocus power to effectively pass stimuli to the primary visual cortex through receptive fields on the retina, meanwhile maintaining visual quality.

Myopia Management: ★★★★★

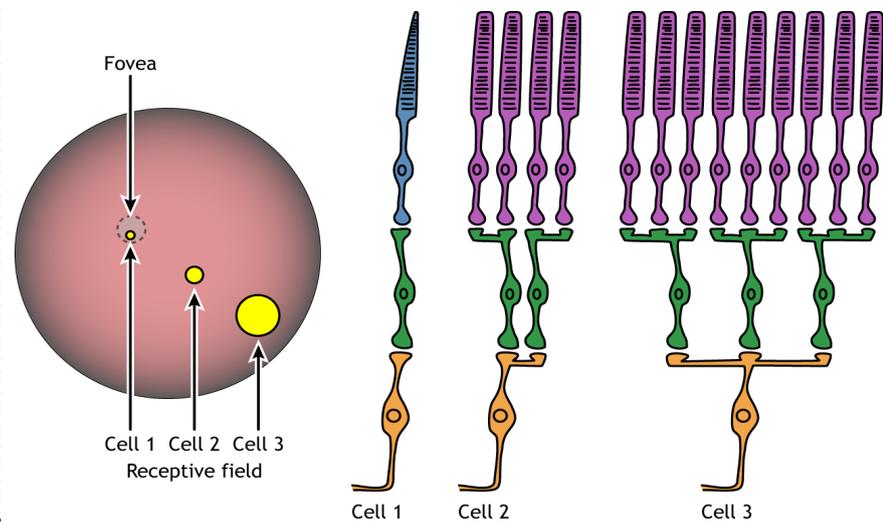
Visual Quality: ★★★★★

Myopia Progression

Central Nervous System Mechanisms



Distribution of Primary Visual Cortex Receptive Fields on the Retina

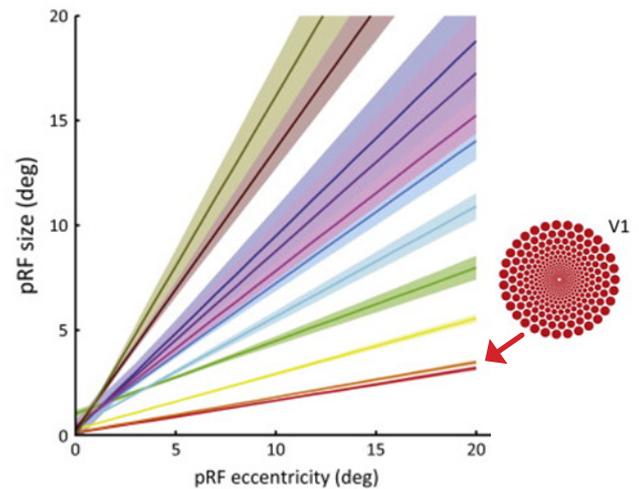


Receptive Field with Retinal Eccentricity

(Brian Wandell, 2015; Andrew Watson, 2014)

A visual receptive field is the area in the retina where stimuli can activate a particular neuron in the brain; the neuron responds primarily to visual stimuli within this field.

The primary visual cortex, also known as V1, is a crucial and direct visual information processing area in the cerebral cortex. According to research by Professor Brian A. Wandell of Stanford University, the receptive fields of V1 neurons that receive visual information have a characteristic and systematically varying distribution pattern across the retina based on retinal eccentricity (shown by the red pattern in the figure).

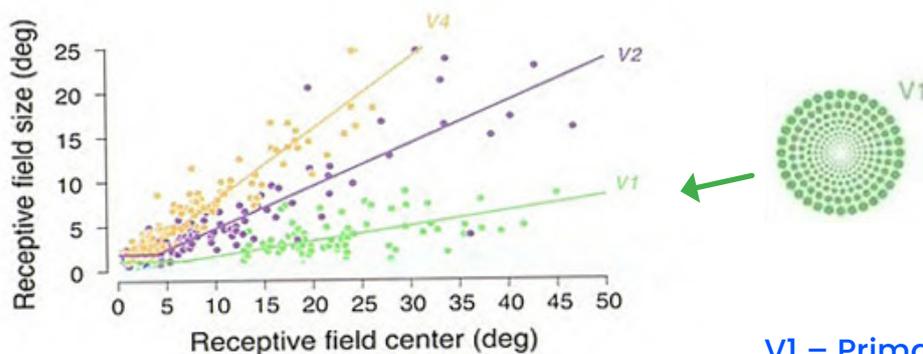


V1 – Primary visual cortex

Receptive Field with Retinal Eccentricity

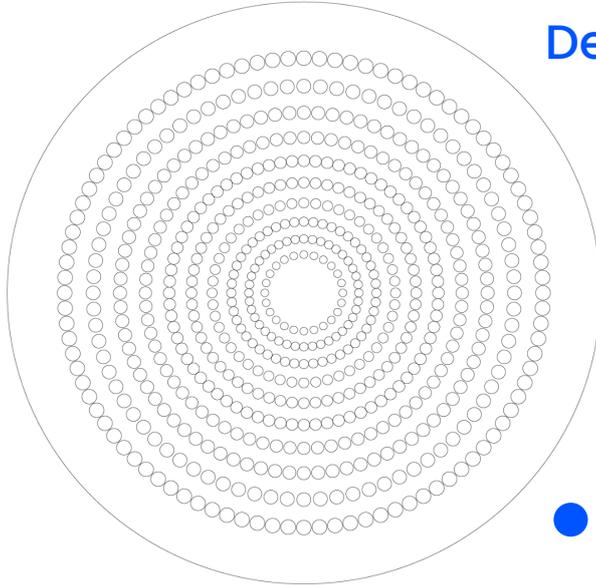
(Andrew Watson, 2014)

Professor Andrew Watson also identified a similar varying distribution pattern for V1 neuron receptive fields (shown by the green pattern in the figure).



V1 – Primary visual cortex

OCULISTA® Dynamic Defocus Design Lens



Design Parameters:

- 8/9mm central optical zone
- 10 concentric rings of lenslets
- **Dynamic power:**
defocus power of lenslets varies between 3.50D and 4.50D
- **Dynamic diameter:**
starting from 1.0 mm, diameter of lenslets increases progressively towards the periphery
- **Dynamic spacing:**
starting from 1.0 mm, space between neighbouring rings increases progressively outwards



Patent No.: ZL 2023 2 0873062.8

Dynamic Defocus Design (3D)

Key Aspects of Dynamic Defocus Technology



Interlocking Design

The lenslet array is arranged in a progressive pattern, proportionally simulating the visual cortex receptive fields to enhance efficiency.



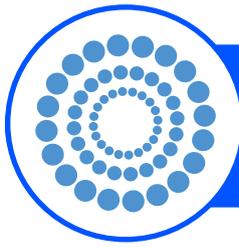
Progressive Optimization

The blur circles projected onto the retina by the lenslets increase progressively in size, providing targeted stimulation to the visual cortex.



Balanced Performance

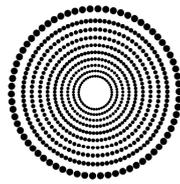
Defocus power is dynamically allocated to balance visual quality with visual cortex stimulation effectiveness.



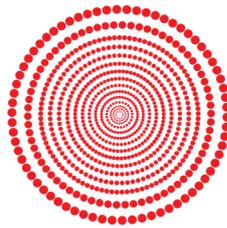
Receptive Field Adaptation Array

Interlocking Design: RFAA Receptive Field Adaptation Array

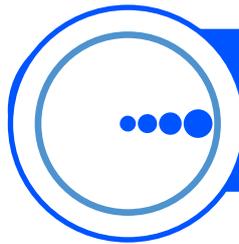
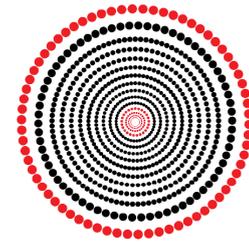
The arrangement of defocus lenslets is optimized according to the distribution of primary visual cortex receptive fields. Maximized lenslets efficiency to enhance the stimuli to central neural system.



OCULISTA Micro-lens layout of the lens



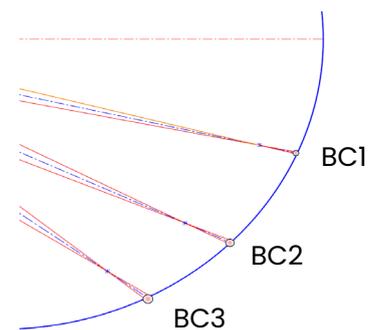
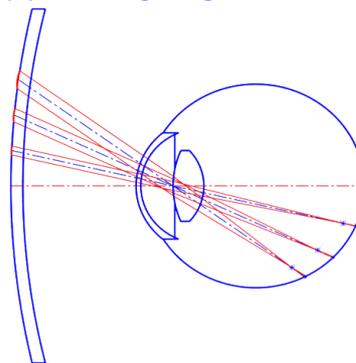
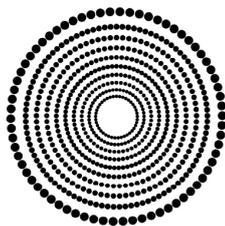
Simulate the retinal receptive field



Progressive Blur Circle Optimization

Progressive Optimization: PBCO Progressive Blur Circle

The image points formed by the lenslets are located in front of the retina, creating blur circles on the retinal plane. The size and shape of these blur circles correspond to receptive fields, thereby providing targeted visual cortex stimulation.



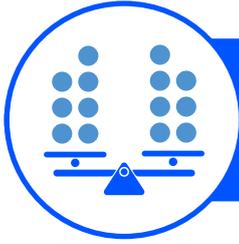
Interlocking Design



Progressive Optimization



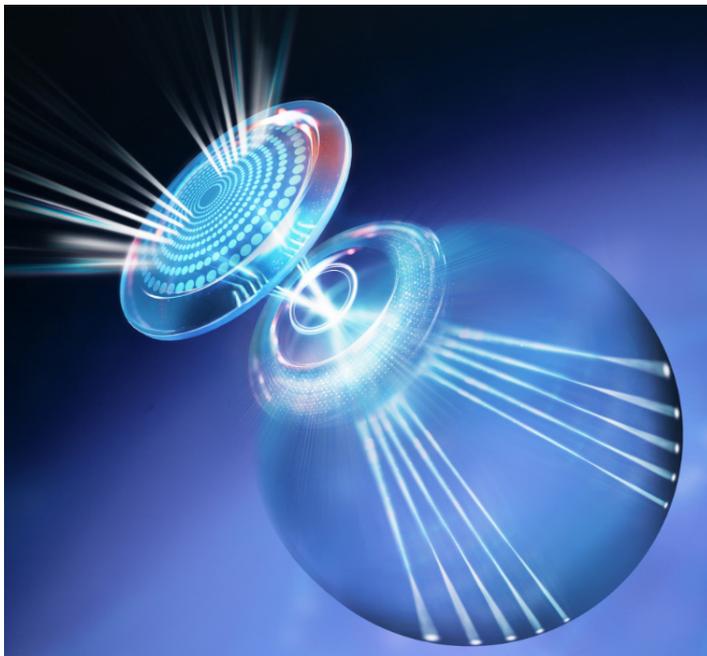
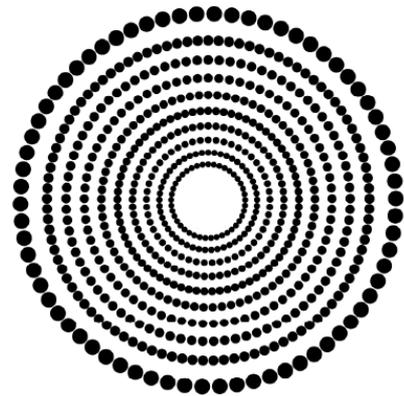
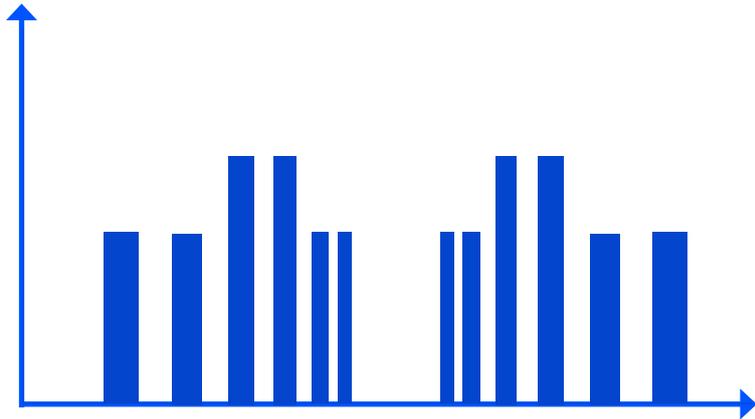
Optimized distribution & targeted stimulation enhance stimulation efficiency while minimizing impact on visual quality.



Smart-Balanced Defocus

Balanced Performance: SBD Smart-Balanced Defocus

286 lenslets are arranged within the effective area (central 6 rings), with intelligently varied defocus power to balance visual quality and visual cortex stimulation intensity.



- **Optimize Defocus Power**

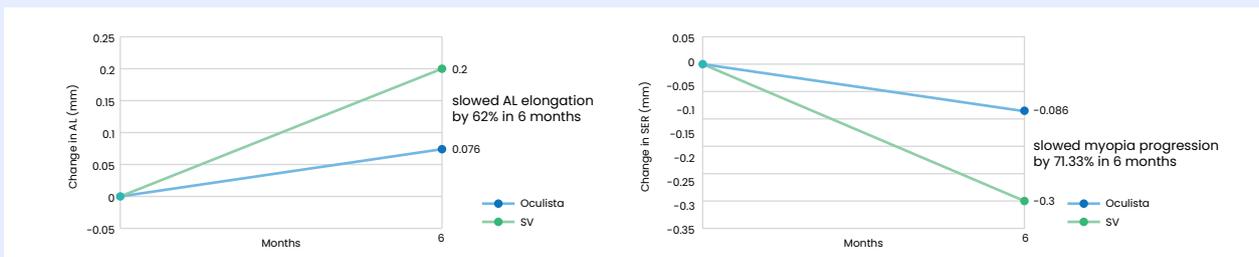
Optimizes visual quality while providing effective myopia management.

- **Enhance Defocus Power**

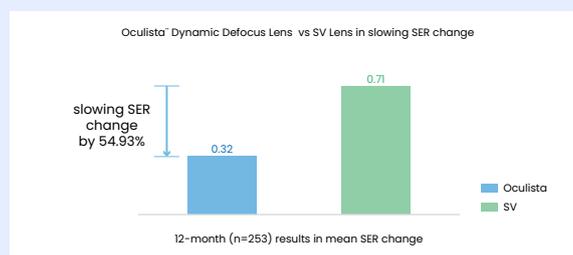
Increases myopia management efficacy without significantly compromising the child's visual quality.

OCULISTA® Dynamic Defocus Lens Real-World Studies

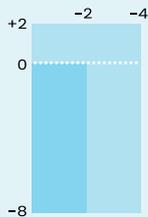
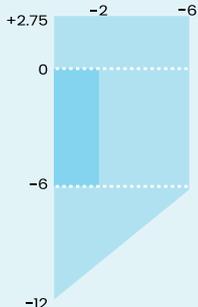
1 A multicenter real-world study showed that 184 eyes completed a 6-month follow-up. After six months of lens wear, compared with the single-vision (SV) lens group, the Oculista® Defocus Lens slowed SER progression by 71.33% and axial length elongation by 62%. Among the children, 59% maintained stable SER, 32% increased by 0.25 D, 4% increased by 0.50 D, and 5% decreased by 0.25 D. In total, 95% showed no more than a 0.50 D increase. Slit-lamp examinations confirmed the reliable safety profile of the Oculista® Defocus Lens, with no adverse events reported during the trial. The lens demonstrated strong clinical benefits in effectively slowing myopia progression in adolescents, with proven safety and comfortable visual performance.



2 Observation results from Aier Eye Hospital between July and August 2024 showed that among adolescents fitted with the Oculista® Dynamic Defocus Lens, the 6-month (n=1116) relative efficacy in controlling myopia progression (slowing SER change) was 61.44% compared with single-vision lenses, and 54.93% at 12 months (n=253). Compared with DIMS-type lenses, the Dynamic Defocus design achieved a 31.82% higher myopia control efficacy at 6 months and 27.65% higher at 12 months. The optimized micro-lens array structure of the Dynamic Defocus design further enhances myopia control performance.





OCULISTA® Dynamic Defocus Lenses	Pro	Elite
Design	3D Dynamic Defocus Design	
Material	Polycarbonate	Resin
Refractive Index	1.591	1.60
Abbe Value	31	40
Coating	Super Hard Green Coat	Platinum Blue Coat
Visual Comfort	★★★★	★★★★★★
Light Transmittance	★★★★	★★★★★★
Soil Resistance	★★★★	★★★★★★
Wear Resistance	★★★★	★★★★★★
Impact Resistance	★★★★★★	★★★★★★
Power Range (0.25D steps for Sphere & Cylinder)	 <p>Note: Cylinder > -2.00D requires custom order. For myopic prescriptions ≤ -9.00D, lens diameter is 70mm; For prescriptions between -9.00D and -10.00D, lens diameter is 65mm; For prescriptions > -10.00D, lens diameter is 60mm; For hyperopic prescriptions, lens diameter is 70mm.</p>	 <p>Note: Spheres > -6.00D or Cylinders > -2.00D require custom order. For myopic prescriptions ≤ -9.00D, lens diameter is 70mm; For prescriptions between -9.00D and -10.00D, lens diameter is 65mm; For prescriptions > -10.00D, lens diameter is 60mm; For hyperopic prescriptions, lens diameter is 70mm.</p>



Eyewear Frame Selection Guide



Stable Fit

Frame stability is crucial. As children are naturally active, we recommend selecting slip-resistant and stable frames.



Lightweight & Comfortable

Children's noses are delicate. Choose lightweight frames to avoid headaches, dizziness, or nasal discomfort caused by pressure on the bridge.



Additional Recommendations

1. Recommended frame eye size (B) is 30–38 mm. Frame PD minus Patient PD should be ≤ 6 mm.
2. Choose frames with adjustable nose pads.
3. Temple length should be appropriate for the child's head size.

愈健睛彩

Advancing for Seeing



Rayzon REDNOTE
Official Account



Rayzon WeChat
Mini Program



Rayzon Zhihu
Official Account