



INDUSTRIAL MACHINE VISION LIGHTS

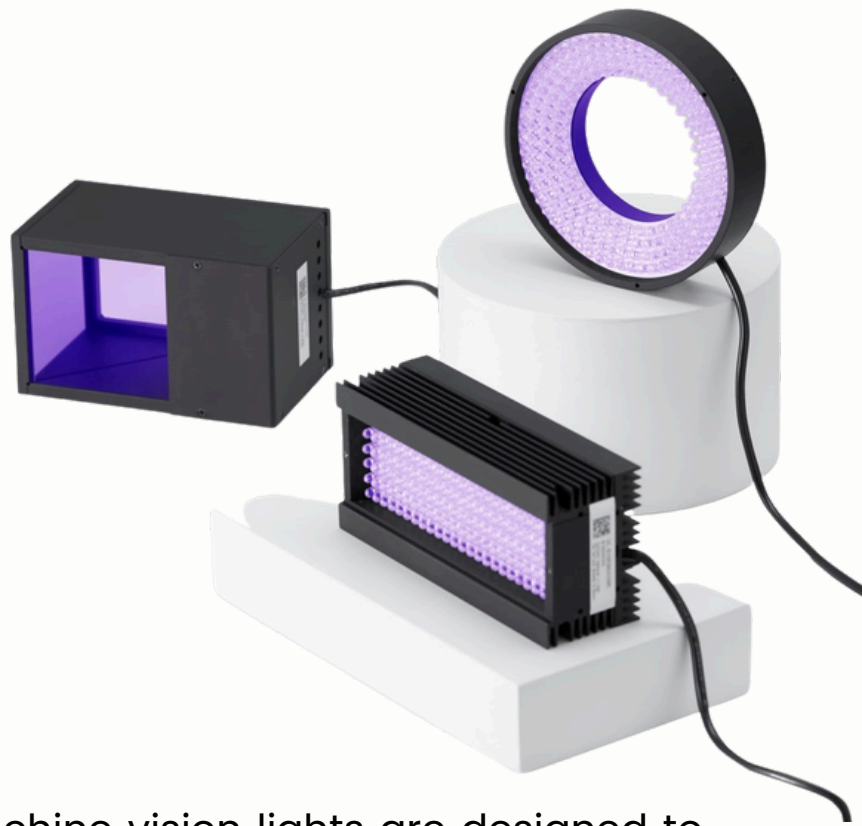


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"Illuminate the Path to Precision: Unleash the Power of Industrial Machine Vision Lights"



Our cutting-edge industrial machine vision lights are designed to illuminate the smallest details, ensuring flawless results and maximum efficiency.

With our extensive range of specialized lights, including line scan, ring, and high-intensity options, you can:

- Enhance image quality and accuracy
- Boost production speed and reliability
- Reduce errors and defects
- Improve overall product quality

DOME LIGHT

PS-DM SERIES



Dome lights are specialized lighting systems widely used in machine vision inspection applications. They produce uniform, shadowless, and diffuse illumination across the target object's surface, ensuring high image clarity. These lights are ideal for inspecting reflective, curved, or textured surfaces where traditional lighting may cause glare, shadows, or uneven highlights.

Working Principle

The light emitted from LED arrays passes through a cambered dome-shaped surface. This design allows for:

- Multi-angle light reflection: Scattering the light uniformly from all angles.
- Diffuse illumination: Reducing specular reflections and ensuring consistent brightness.
- Shadow elimination: Providing shadowless lighting, making surface details more visible.

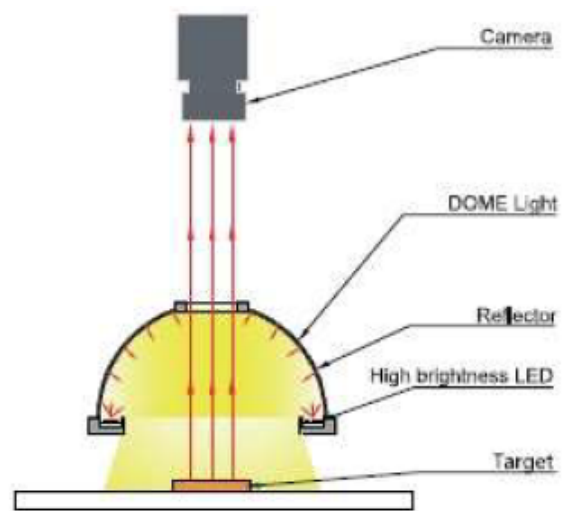
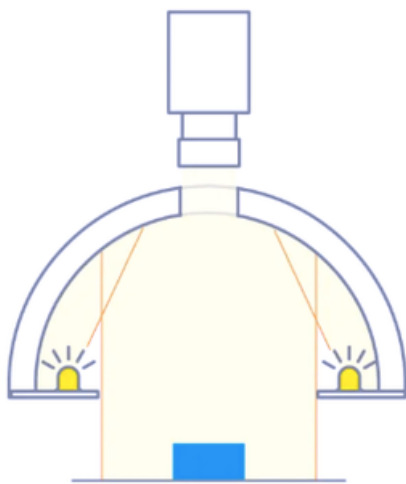
Why Dome Lights Are Superior

- Minimized Specular Reflection: Unlike spot or ring lights, dome lights reduce glare, which can interfere with vision systems.
- Adaptability: Suitable for complex and irregular surfaces that require uniform lighting.
- Enhanced Image Processing: Uniform lighting ensures accurate image analysis and better performance of inspection algorithms.

DOME LIGHT PS-DM SERIES

FEATURES

- **Uniform Illumination:** Even distribution of light minimizes bright spots and shadows.
- **Shadow-Free Imaging:** Ideal for curved or irregular surfaces where traditional lights create shadows.
- **Highlight Surface Defects:** Scratches, cracks, or small dents on reflective objects become more visible.
- **Reduced Glare:** Glare and hot spots are eliminated, improving camera visibility and inspection accuracy.
- **Enhanced Precision:** Provides smooth lighting for high-precision measurements and inspections.



Applications of Dome Lights in Vision Inspection

• ELECTRONICS INSPECTION

- Surface inspection of circuit boards, IC chips, and connectors for defects such as scratches, contamination, and cracks.
- Inspection of solder joints to identify uneven or missing components.

• PHARMACEUTICAL INDUSTRY

- Inspect tablet coatings for defects like cracks, color inconsistencies, or irregularities.
- Verify packaging, such as the reflective plastic shells of medicine bottles.

• METAL SURFACE INSPECTION

- Detection of scratches, dents, or irregularities on reflective metal surfaces like cans, capacitors, or polished parts.
- Suitable for aluminium, stainless steel, and coated metal components.

- **AUTOMOTIVE INDUSTRY**

- Inspection of reflective and curved parts such as metal rings, trims, and casings.
- Checking painted surfaces for bubbles, debris, or scratches.

- **PRECISION COMPONENT INSPECTION**

- Inspection of ceramic rings, bearings, and optical lenses where uniform lighting enhances defect detection.

- **PACKAGING AND PRINTING**

- Defect detection on printed materials, labels, or packaging films.
- Highlighting misalignment, print errors, or coating inconsistencies.

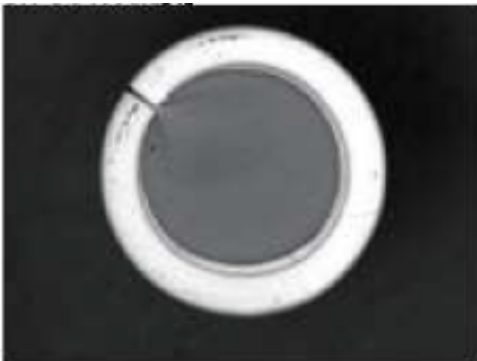
Example

Inspect Ceramic Ring of High Precision

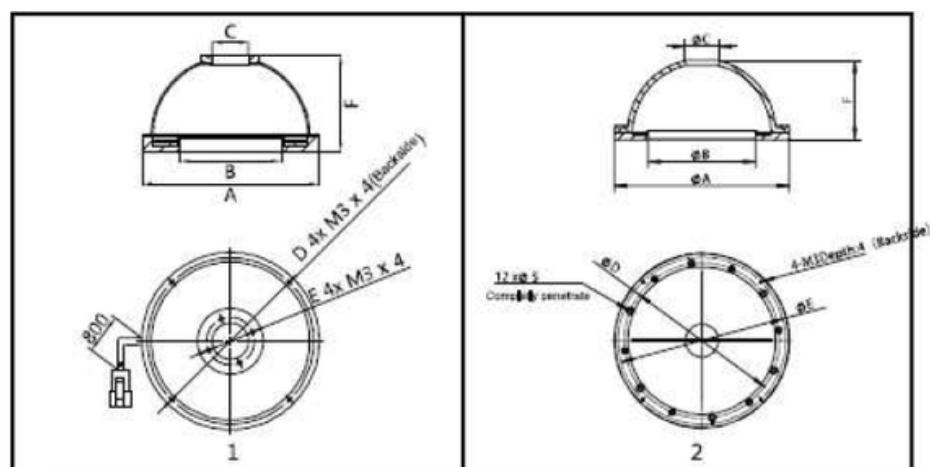
- Curved ceramic rings have reflective surfaces, requiring multi-angle uniform illumination to make scratches and defects on the curved surface clearly visible.

Inspect the Appearance of Medicine

- Curved plastic shells of medicine are reflective, requiring multi-angle uniform illuminating to detect scratches and defects on the curved surface.



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TECHNICAL INDEX

Color (Wavelength)	Red: 620-630nm	Green: 525-530nm	Blue: 465-470nm
	White Color Temperature 6600-7000K	UV: 365-395nm	IR: 850/940nm
Operating environment	Temperature: 0 to 50 C, Humidity: 20% to 85% RH		
Lifetime	100,000 Hours theoretical service time (Depends on the operating environment, not a guarantee.		
Compatible Controller	Analog Controller, Digital Controller, Constant Current Controller		
Optional Accessory	Light sources and Lens Adapter.		
	Diffusion Plate, Polarizing Plate (Optical Transmittance: 60%, 70%, 80%, 90%)		
	Extension Cable: 1m/2m/5m/10m/15m (Two kinds of materials of the shell of wire; PVC of hardness; silicon of softness)		
Warranty	One year warranty, technical support (Buyers pay for the freight)		

DOME LIGHTS

PS-DM SERIES

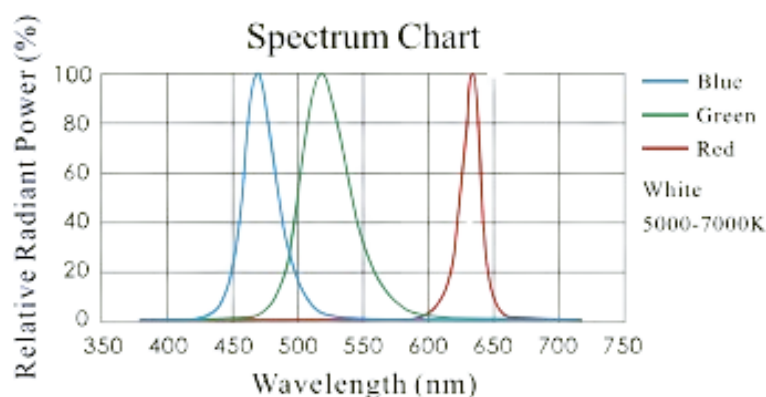
Light parameters (Voltage is 24V)

Model	Color	Power(W)		Dimensions(mm)					
		Output 	Output   	A	B	C	D	E	F
PS-DM50	   	3.5	4.1	68	30	15	60	19.5	37
PS-DM70	   	4.8	5.9	95	54	20	83	27	50
PS-DM100	   	7	8.1	117	65	23	110	30	61
PS-DM120	   	8.3	10.3	120	86	30	-	40	61
PS-DM150	   	10.5	13.5	180	110	30	160	172	81
PS-DM180	   	11.4	15.6	198	138	30	184	-	95
PS-DM200	   	22.9	24.5	234	166	50	222	-	115
PS-DM240	   	30.9	36.6	260	192	48	246	-	123
PS-DM280	   	33.1	39.6	280	230	50	266	-	123
PS-DM300	   	36.1	42.6	300	232	48	286	-	149

Technical Considerations

When selecting a dome light for a vision system, consider:

- **Illumination Intensity:** Ensuring sufficient brightness for the camera sensor.
- **Color Options:** LEDs in Red, Green, Blue, or White for specific material and defect detection requirements.
- **Size and Shape:** Matching the dome dimensions to the object size and camera field of view.
- **Integration:** Compatibility with coaxial lights for improved shadow elimination on highly reflective objects.



Note: The data is for reference only.

CONTACT DETAILS

You can also contact us over email / phone, we will be happy to support you.

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