

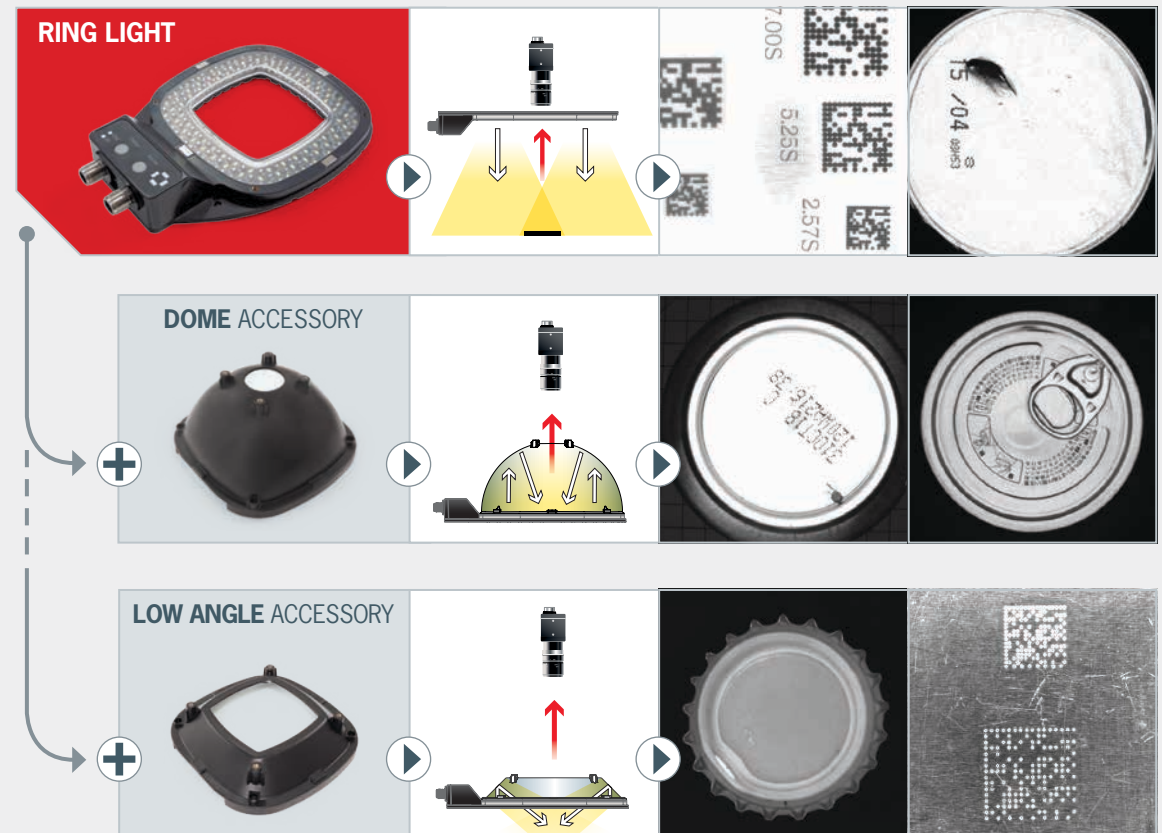
# MODULAR RINGLIGHT



## MACHINE VISION & CODE READING APPLICATIONS



### THE **MOST CAPABLE** CONCEPT FOR CODE READING



The **MODULAR LIGHT** is a high brightness, flexible illumination platform designed for use across multiple inspection applications in a factory. It's great strength is as a modular testing toolkit, allowing users to quickly identify the best illumination setups, especially in frequently changing production environments.

# THE **MODULAR RINGLIGHT** IS A VERY DIFFUSE, HIGH BRIGHTNESS RING THAT ENABLES WORKING AT VERY SHORT WORKING DISTANCES DUE TO ITS TINY BLIND CONE.



## ■ BRIGHTNESS MEASUREMENT IN RING CONFIGURATION:

(Lux) – white colour – Standard mode

Working distance (mm)	100	200	300	500
Size 80	19 200	6 840	3 180	N/A
Size 130	15 890	9 020	4 740	1 900

## ■ FIELD OF VIEW COVERED\* (in millimeter)

Working distance (mm)	100	200	300	500
Size 80	150 x 100	200 x 150	250 x 200	N/A
Size 130	200 x 150	200 x 150	250 x 200	400 x 300

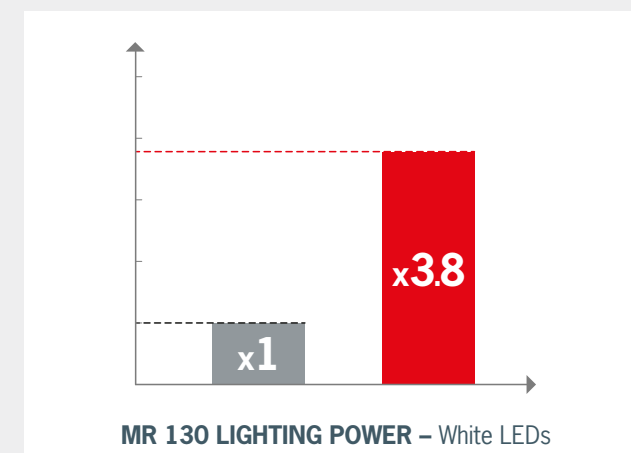
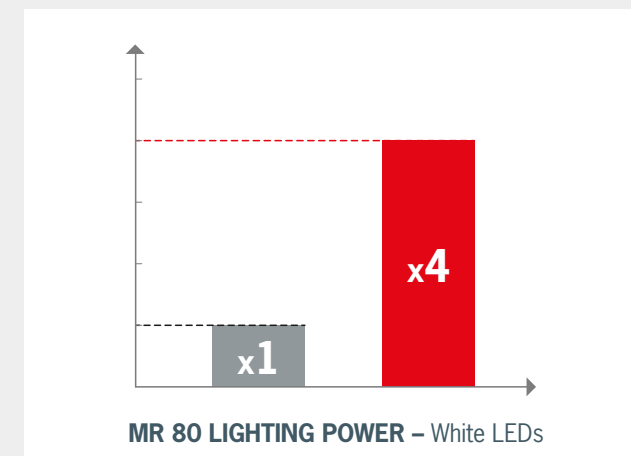
\* We advise to use a 6mm focal lens to cover this Field of View (FoV).



## ■ WORKING AT SHORT WORKING DISTANCE

	Min. working distance
Size 80	60 mm
Size 130	50 mm

## ■ OVERDRIVE MODE:



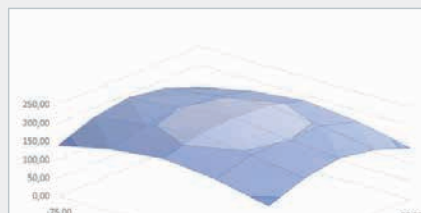
# THE **MODULAR RINGLIGHT** IS A VERY DIFFUSE, HIGH BRIGHTNESS RING WITH HIGH HOMOGENEITY OVER A WIDE WORKING DISTANCE + FOV



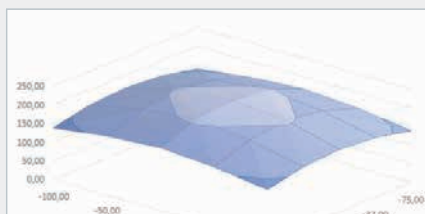
## ■ HOMOGENEITY RING 80



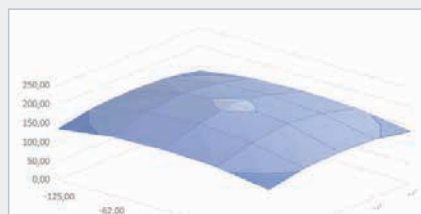
UNIFORMITY MAP – RING 80  
WD 50mm – FoV 150 x 120



UNIFORMITY MAP – RING 80  
WD 100mm – FoV 150 x 120



UNIFORMITY MAP – RING 80  
WD 200mm – FoV 200 x 150

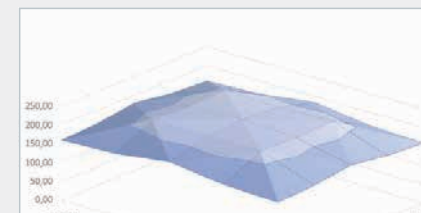


UNIFORMITY MAP – RING 80  
WD 300mm – FoV 250 x 200

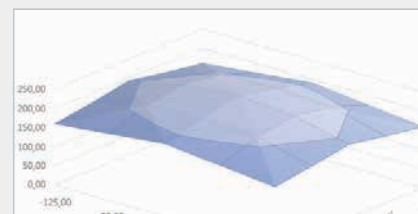
## ■ HOMOGENEITY RING 130



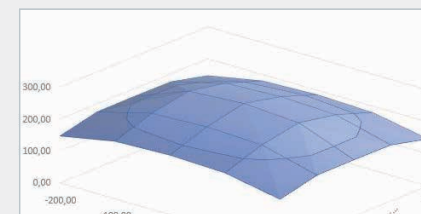
UNIFORMITY MAP – RING 130  
WD 80mm – FoV 200 x 150



UNIFORMITY MAP – RING 130  
WD 200mm – FoV 200 x 150



UNIFORMITY MAP – RING 130  
WD 300mm – FoV 250 x 200



UNIFORMITY MAP – RING 130  
WD 500mm – FoV 400 x 300

## ACCESSORIES:

The Modular Ringlight can be paired with several accessories, including a Dome and a Low Angle accessory (which can also turn the Ring into an efficient Dark Field at close working distances).

The Modular Ringlight produces very diffused light so additional diffusers are not required. To reduce the brightness, you can dim the light down to 30% using the 0-10V dimming feature. For very shiny parts we recommend using one of the accessories such as the Dome, rather than direct illumination with the Ring.

THE **DOME ACCESSORY** TURNS THE MODULAR RINGLIGHT INTO A HIGH PERFORMANCE DOME LIGHT, PROVIDING **BOTH HOMOGENEOUS AND BRIGHT ILLUMINATION**.



**DOME**  
LIGHT

■ **TESTING WITH A CAN PLACED AT DIFFERENT LOCATIONS WITHIN THE FOV:**



LEFT TOP



RIGHT TOP



CENTER



LEFT BOTTOM



RIGHT BOTTOM

■ **TESTING OF VARIOUS SHINY AND UN-HOMOGENEOUS SURFACES:**

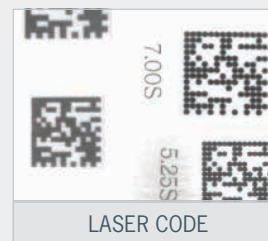
The Modular Ringlight equipped with the **Dome accessory** is the perfect tool to read inkjet or laser markings on shiny and/or uneven surfaces.



TABLET



LID



LASER CODE



COVER



LID

**DIFFERENT COLOURS** are selected to help increase the contrast, depending on the material you are using.

E.g. laser engraved codes on steel typically give best results with Cyan light, but Red or even IR light might work better on aluminium surfaces.

However, white is always the better colour to use for inkjet marks on metal surfaces.

THE **DOME ACCESSORY** TURNS THE MODULAR RINGLIGHT INTO A HIGH PERFORMANCE DOME LIGHT, PROVIDING **BOTH HOMOGENOUS AND BRIGHT ILLUMINATION**.

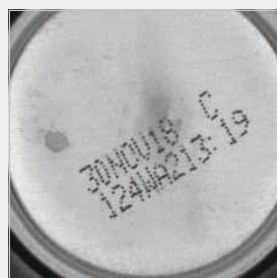
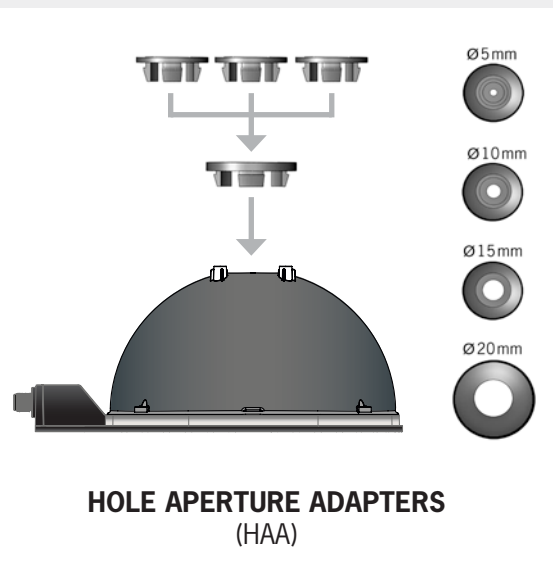
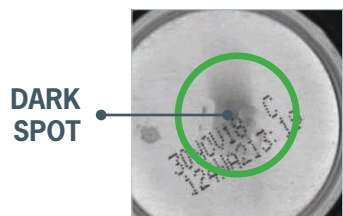


**DOME**  
LIGHT

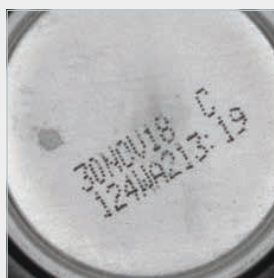
■ **TESTING SHOWING HOW TO REDUCE THE 'DARK SPOT' EFFECT USING THE HOLE APERTURE ADAPTERS (HAA) ON 130mm DOME:**

**All dome illuminations have a well-known problem:**

A dark spot in the middle of the field of view, created by the reflection of the lens into the part. The TPL Vision Modular Ringlight solves this problem using simple Hole Aperture Adapters (included with the Dome accessory) - just clip an Adapter at the top of the Dome to reduce the hole diameter down to 20, 15, 10 or even 5mm.



HAA Ø15



HAA Ø10



HAA Ø5

**NO DARK SPOT**

■ **USING THE POWERFUL DOME TO CREATE A COAXIAL EFFECT WITH THE HOLE APERTURE ADAPTERS:**



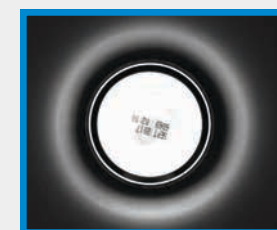
HAA Ø5 - WD 50mm



HAA Ø5 - WD 100mm



HAA Ø5 - WD 150mm



HAA Ø5 - WD 200mm

**THE HOLE APERTURE ADAPTERS** are also very useful to help create a COAXIAL effect. This means if you have room to increase your working distance, you may be able to avoid the need for a separate costly Coaxial light. Simply use the powerful Modular Ringlight with the Dome accessory placed at a long working distance from your part and attach the Hole Aperture Adapter size 35/5 (for 130mm Ring) or 30/5 (for 80mm Ring.)

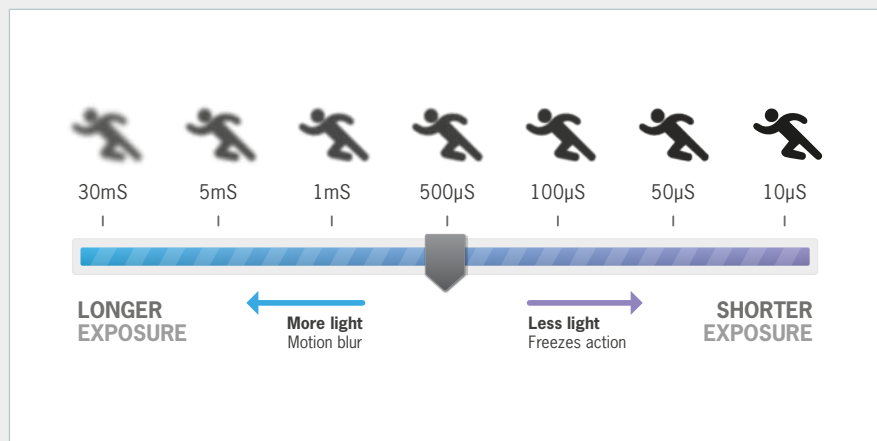


# THE **IN-BUILT OVERDRIVE** FUNCTION MAKES THE MODULAR RINGLIGHT PERFECT FOR **HIGH SPEED APPLICATIONS**.

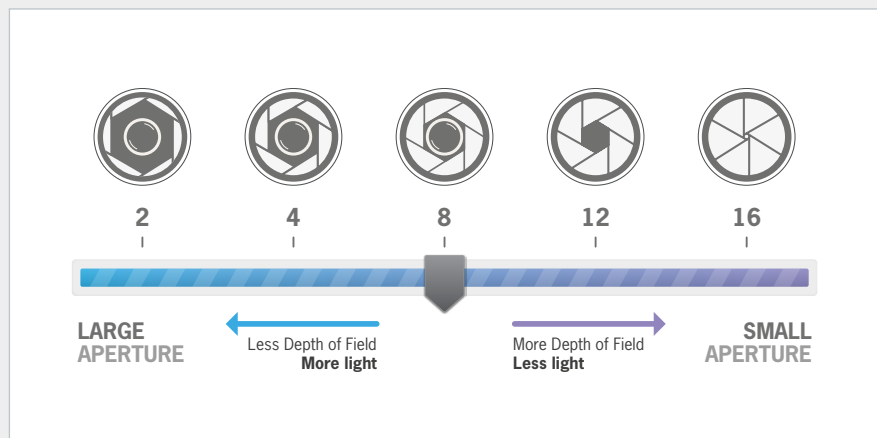


**DOME LIGHT**

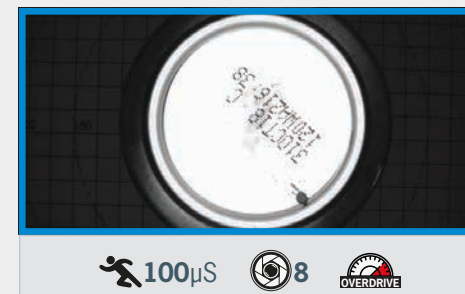
## ■ EXPOSURE TIME (ET)



## ■ LENS APERTURE (A)



## ■ WITH OVERDRIVE

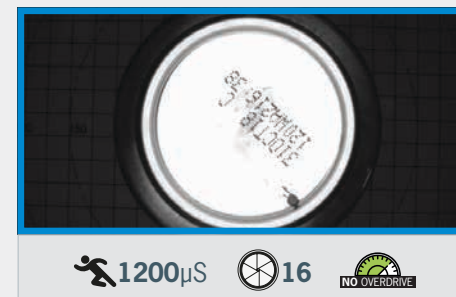


# THE MODULAR RINGLIGHT **WITHOUT OVERDRIVE** IS PERFECT FOR **LESS DEMANDING** APPLICATIONS



**DOMELIGHT**

## ■ WITHOUT OVERDRIVE

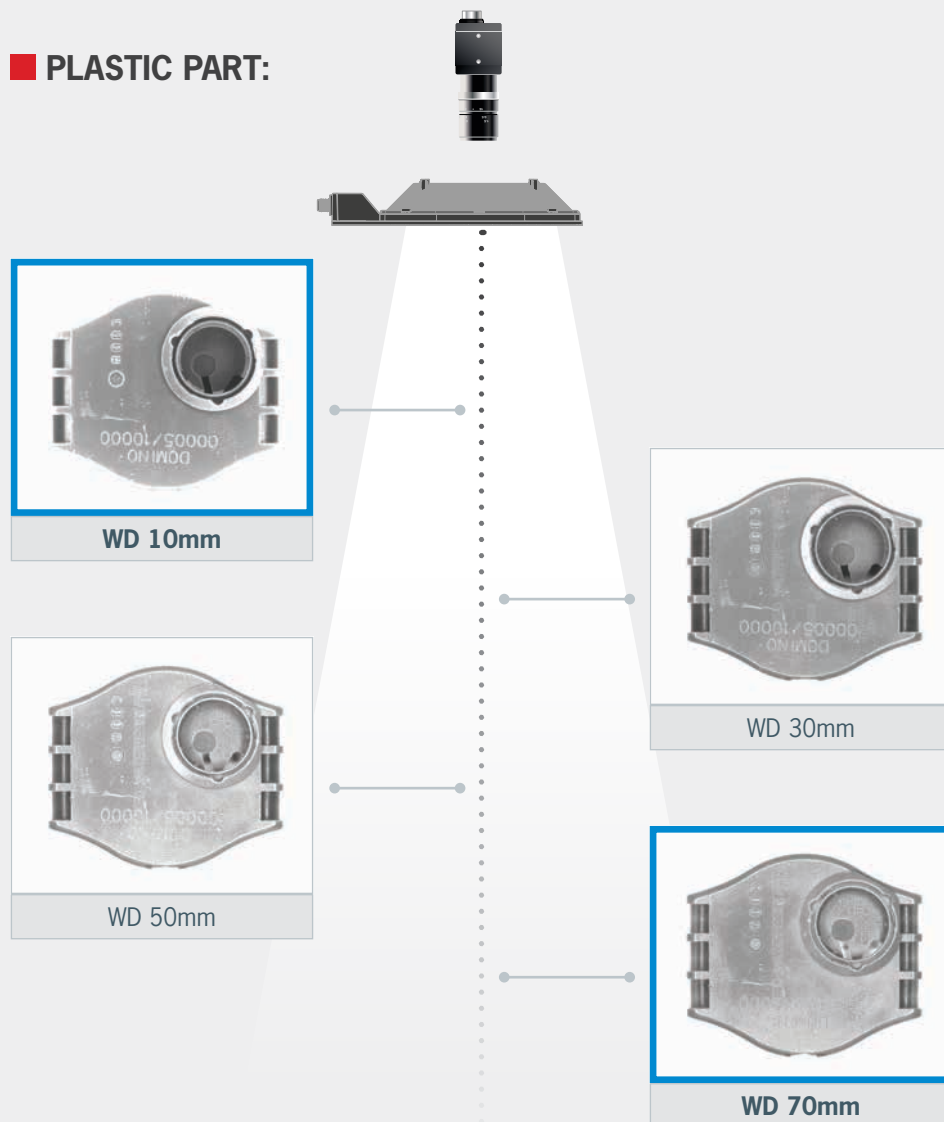


THE **LOW ANGLE ACCESSORY** TURNS THE MODULAR RINGLIGHT INTO A VERY VERSATILE TOOL, WITH **VARIOUS EFFECTS OBTAINED AT DIFFERENT WORKING DISTANCES.**

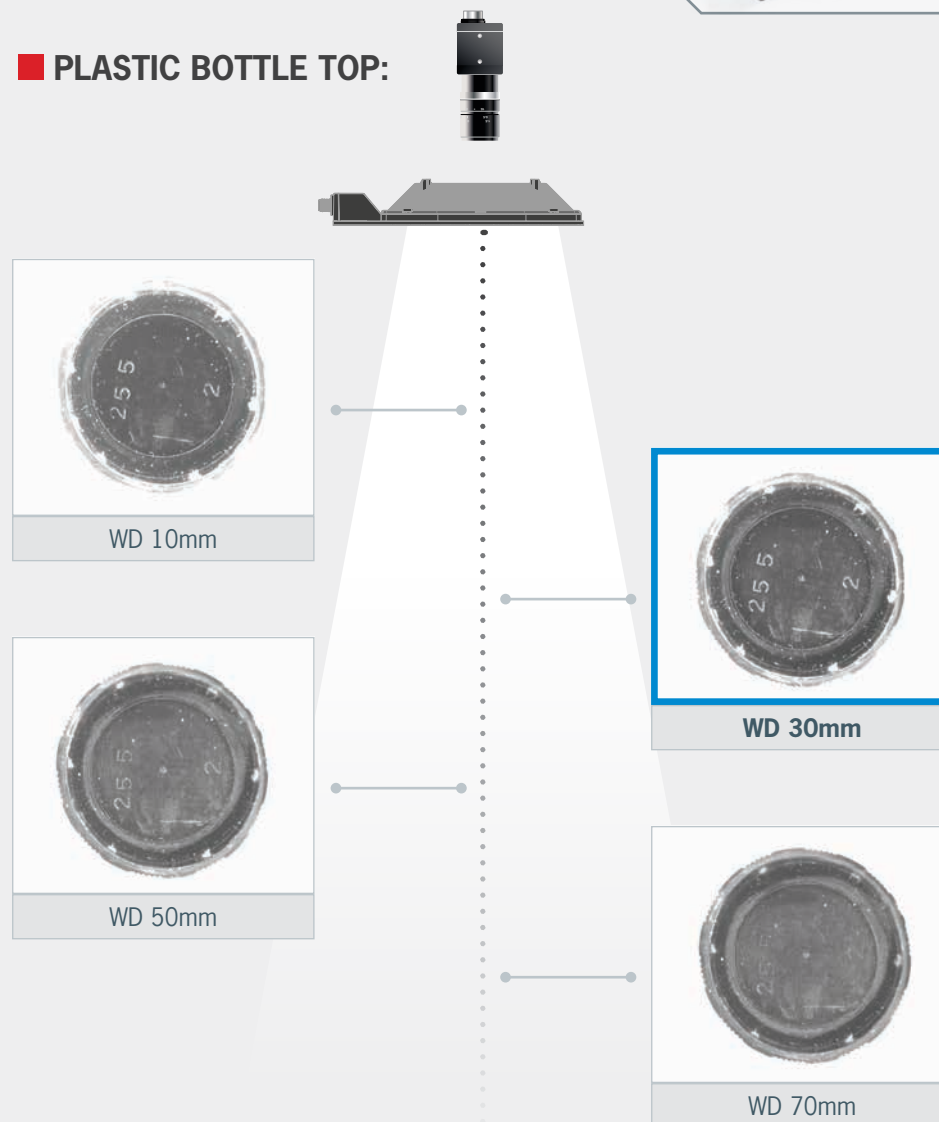


**LOW  
ANGLE**

■ **PLASTIC PART:**



■ **PLASTIC BOTTLE TOP:**



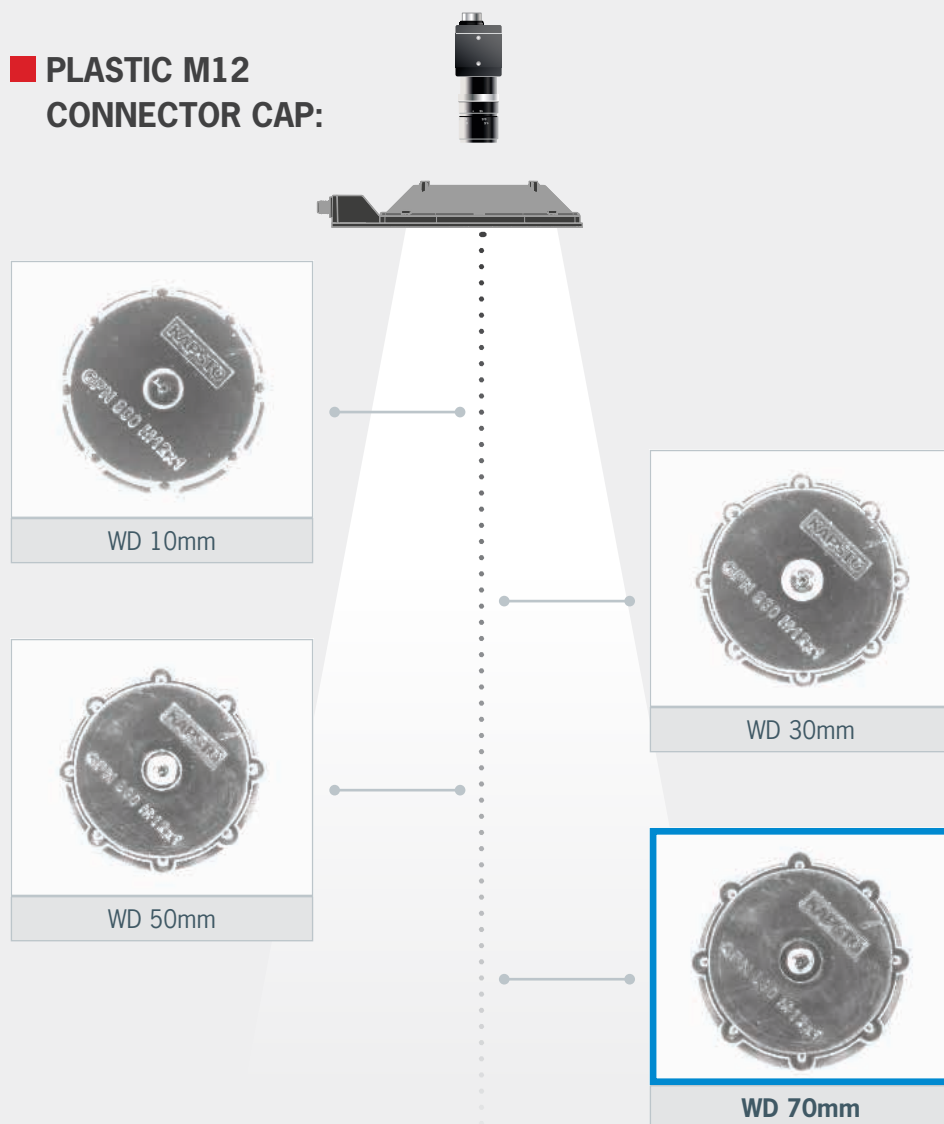


THE **LOW ANGLE ACCESSORY** TURNS THE MODULAR RINGLIGHT INTO A VERY VERSATILE TOOL, WITH **VARIOUS EFFECTS OBTAINED AT DIFFERENT WORKING DISTANCES.**



**LOW ANGLE**

■ **PLASTIC M12 CONNECTOR CAP:**



■ **BEER BOTTLE TOP – INSIDE INSPECTION:**



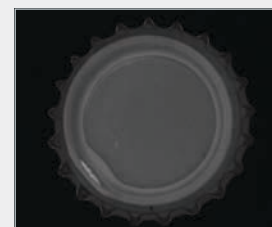
WD DARK FIELD\*



WD 10mm



WD 20mm



WD 30mm

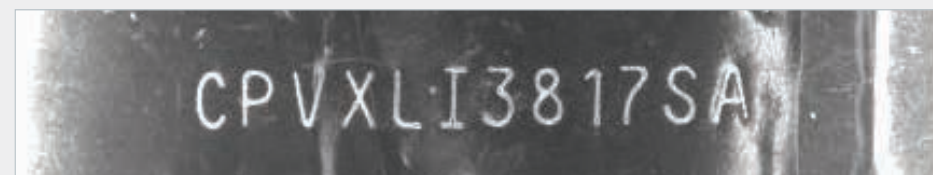


WD 30mm (ET x2)\*\*

\*Using the Low Angle accessory with a very short working distance, the Modular Ringlight creates a Dark Field effect comparable to that achieved with a Dark Field dedicated ring.

\*\*ET = Exposure Time

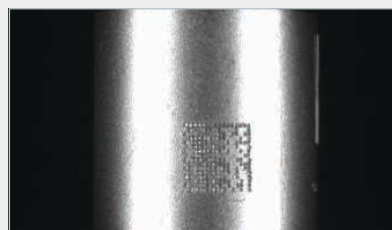
■ **TO CREATE A BRILLIANT DARK FIELD EFFECT, USE THE MODULAR RINGLIGHT WITH THE LOW ANGLE ACCESSORY AND POSITION IT VERY CLOSE TO THE PART:**



THE MODULAR RINGLIGHT'S **UNIQUE ROUND/SQUARE SHAPE** ALLOWS IT TO BE TURNED INTO **PARALLEL LOW ANGLE** BAR LIGHTS.



■ DPM CODE READING ON ROUND PARTS USING LOW ANGLE ACCESSORY – 2 SECTORS SELECTED:



WD DARK FIELD



WD 10mm



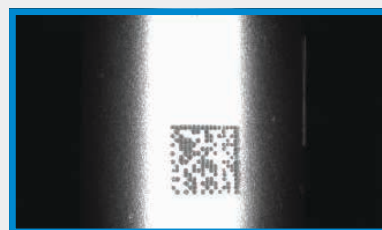
WD 30mm



WD 30mm – ET x2



WD 50mm



WD 50mm – ET x2

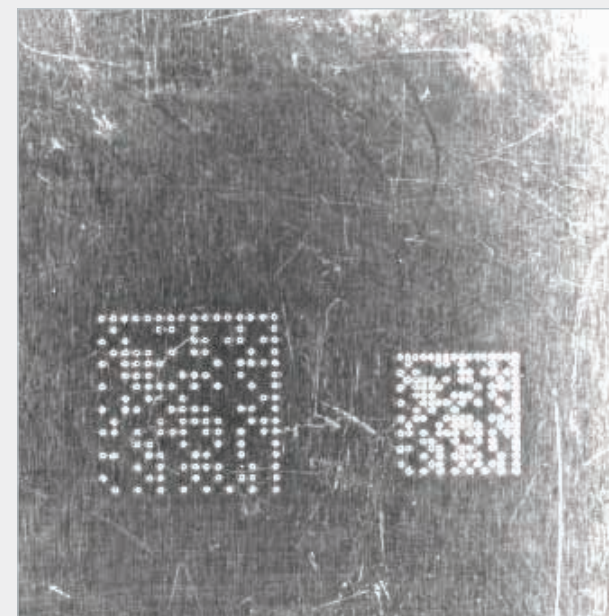


OR



▶ **2** SECTORS

■ DPM CODE READING USING LOW ANGLE ACCESSORY – 4 SECTORS SELECTED:



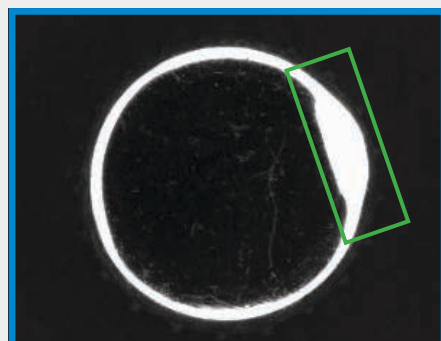
▶ **4** SECTORS

THE **LOW ANGLE ACCESSORY** TURNS THE MODULAR RINGLIGHT INTO A VERY VERSATILE TOOL, WITH **VARIOUS EFFECTS OBTAINED AT DIFFERENT WORKING DISTANCES.**

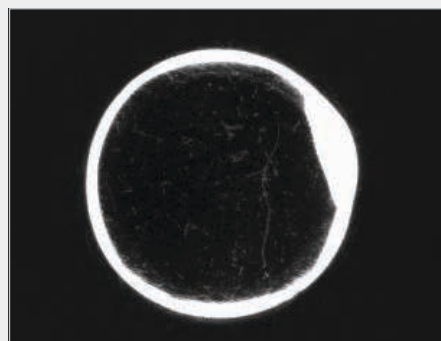


**LOW  
ANGLE**

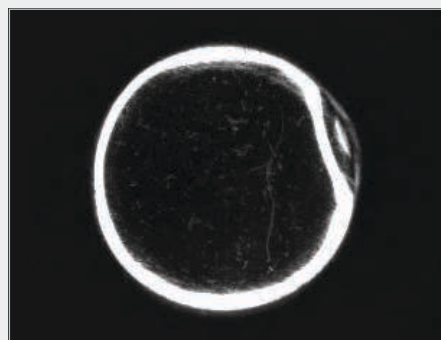
■ **BEER BOTTLE TOP – SURFACE INSPECTION:**



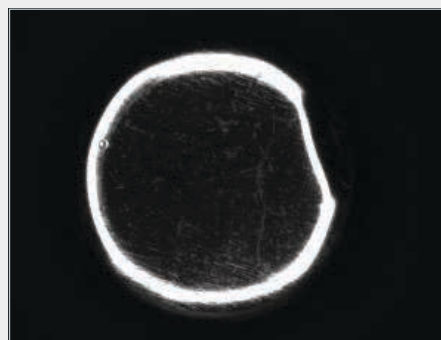
WD DARK FIELD\*



WD 10mm



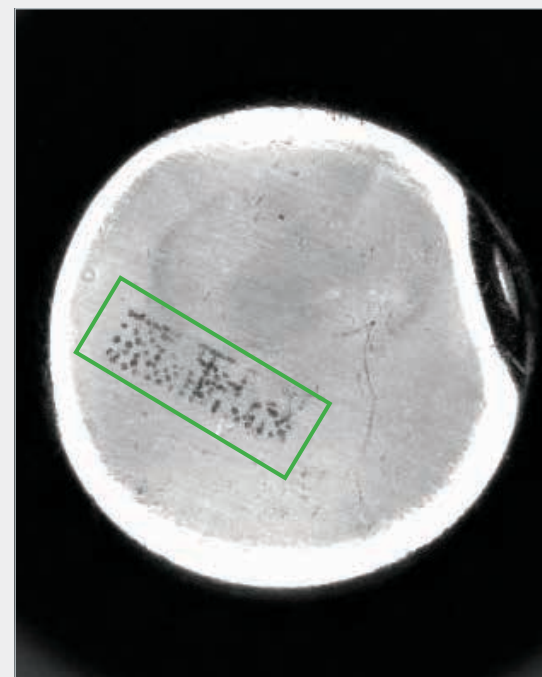
WD 30mm



WD 50mm

\*Using the Low Angle accessory with a very short working distance, the Modular Ringlight creates a Dark Field effect comparable to that achieved with a Dark Field dedicated ring.

■ **MIXING BOTH A LOW ANGLE ACCESSORY AND A DOME ACCESSORY ON THE SAME RING:**



The combination of both accessories allows you to detect the defect whilst still being able to read the Datamatrix code.

# MODULAR RINGLIGHT: AN INDUSTRIAL PLATFORM



## REMOTE SETTINGS

THROUGH CAMERA / PLC

### M12 male 8 pins\*

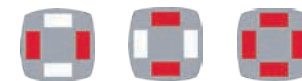
- ☒ Activate Overdrive
- ☒ Change colour
- ☒ Program sectors
- ☒ Disable keypad

\* For pin out information, refer to Technical User Guide

## MANUAL SETTINGS

FOR FEASIBILITY TESTING

☒ Select sector pairs:



☒ Select Colour:



Features	80 mm	130 mm
Functioning Mode	Continuous, Strobe, Overdrive, Dimming, Manual Control	
Rise/ Fall Time	10 µs	
Minimum On-Time @ min frequency	50 µs @ 30 Hz	
Max. consumption Red-Cyan	9W average / 51W peak	11W average / 82W peak
Max. consumption WHI-IR	10W average / 42W peak	13W average / 62W peak
Dimensions (external)	136 x 193 mm	197 x 257 mm
Dimensions (internal)	Ø76 mm	Ø127.5 mm
Height with no accessories	11 mm at light, 31 mm at connectors	
Height with Dome	75 mm	106.75 mm
Height with Low Angle	34.75 mm	45.25 mm
IP Protection	IP 65	



# COMBOS FOR **EASY** ORDERING

CUSTOMER EVALUATION PROCESS SIMPLIFIED

## SIMPLE DEMONSTRATION PROCESS



## 2 COMBOS: 80mm & 130mm

- **Make life easy:** no need to order the products separately
- **Little support required**
- **Rapid delivery**







**EASY TO USE!**


COMBOS available for easy ordering	COMBO References
COMBO 80 Red-Cyan White-Infrared with briefcase	MR-80-RC-WIR-CO-B
COMBO 130 Red-Cyan White-Infrared with briefcase	MR-130-RC-WIR-CO-B

# THE PERFECT PARTNER PLATFORM!



## ■ YOU BUY FROM:

4x RINGS		
RING 80mm White-IR	MR-80-WIR-R	
RING 80mm Red-Cyan	MR-80-RC-R	
RING 130mm White-IR	MR-130-WIR-R	
RING 130mm Red-Cyan	MR-130-RC-R	

4x LIGHTING ACCESSORIES		
LOW ANGLE – 80mm	LA-MR-80	
DOME – 80mm	D-MR-80	
LOW ANGLE – 130mm	LA-MR-130	
DOME – 130mm	D-MR-130	

MOUNTING ACCESSORY		
MOUNTING BRACKET	TPL-MOUNT-MR	

## ■ TO SELL UP TO 12 CONFIGURATIONS:

Products		80 mm	130 mm
	RING White-IR	MR-80-WIR-R	MR-130-WIR-R
	RING Red-Cyan	MR-80-RC-R	MR-130-RC-R
	LOW ANGLE White-IR	MR-80-WIR-LA	MR-130-WIR-LA
	LOW ANGLE Red-Cyan	MR-80-RC-LA	MR-130-RC-LA
	DOME White-IR	MR-80-WIR-D	MR-130-WIR-D
	DOME Red-Cyan	MR-80-RC-D	MR-130-RC-D



▶ **12**  
CONFIGURATIONS