

# QML/ QMHL

Water, Vibration and Oil Resistant  
LED Work Lights with IP67/ IP69K Protection



## Water, vibration and oil resistant LED work light, suitable for machine tools applications and high temperature water cleaning environments



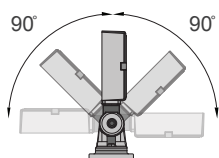
### Common Specifications(QML/ QMHL)

- Excellent oil resistance with a special sealing structure with IP67 protection rating, suitable for machine tool applications with cutting fluids
- Suitable for high pressure and high temperature water cleaning environments(IP69K)
- Tempered glass prevents damage from machine tool chips
- Foreign substances do not accumulate on the shielding glass surface of the working light due to its flush structure to the housing structure of the product
- Can select between QML model (Anti-glare type) and QMHL model (High luminance type) depending on your work conditions
- An external power supply is not needed for the AC type product; AC voltage can be applied directly to the product
- Can select from a variety of bracket options from direct mount, tilt mount, and pan/ tilt mount type to fit your work environment or lighting condition needs
- Standard entry cable included. Can customize the product with the M12 connector if requested
- Customized oil resistant cable attached type available
- Certificates : CE, UL Compliant

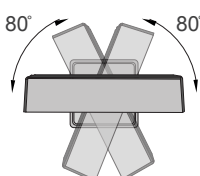


### Tilt/ Pan Type MF Bracket, Water and Oil Resistant

SIDE VIEW



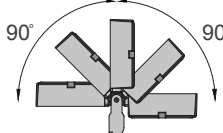
TOP VIEW



- Water and oil resistant MF type brackets protect output cable from cutting fluid and chips
- Has a tilt adjustment angle of 180° and a pan angle of 160°

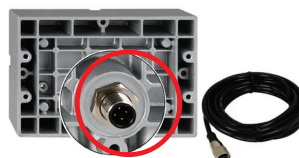
### Tilt Type K Bracket

SIDE VIEW



Has tilt adjustment with wide angle of 180°

### M12 Connector Attached Type



Customized cable entry M12 connector attached type available, an additional connector cable will be also provided with this model.

### Test Conditions/ Regulations

Vibration Resistance Test	<ul style="list-style-type: none"> <li>• Acceleration : 20m/s<sup>2</sup></li> <li>• Duration : 1 octave/min</li> <li>• Range of frequency : 10-150Hz</li> <li>• Amplitude : 10 times maximum 7.5mm, direction : test 10times in 3 directions(X, Y, Z)</li> </ul>
Shock Resistance Test	<ul style="list-style-type: none"> <li>• Acceleration : 20g</li> <li>• Directions : ±X, ±Y, ±Z</li> <li>• Numbers : 3 times each directions</li> <li>• Time period : 11ms for each direction</li> <li>• Waveform : Half sine</li> </ul>
Oil Resistance Test	<ul style="list-style-type: none"> <li>• General test : Tested in water soluble and non-water soluble flooded environments for 500 hours.</li> <li>• High temperature oil resistance test : Place the object in a constant temperature water bath at 80°C for two hours and then submerge the object in the room temperature oil diluent for 24hours.</li> </ul>
Solid Particle Protection Test(IP6X)	<ul style="list-style-type: none"> <li>• After reducing the pressure inside the test object, spray talcum powder with a nominal diameter of 50um for 2 hours at 40-60meters/hour inside the dust chamber.</li> <li>• IEC60529</li> </ul>
Liquid Ingress Protection Test(IPX7)	<ul style="list-style-type: none"> <li>• Test ingress by putting the object under 1000mm water with 2bar of pressure for 30 mins</li> </ul>
High-pressure, High-temperature Wash-down Test (IP69K)	<ul style="list-style-type: none"> <li>• Spray nozzle provides 80°C water with pressure of 80–100 bar and a flow rate of 14–16 L/min to the object</li> <li>• Distance between spray nozzle and the test object : 10-15cm</li> <li>• Water spray angle : 0°, 30°, 60°, 90°</li> <li>• The nozzle is held at 4 of each angle for 30 seconds</li> <li>• DIN 40050 PART9</li> </ul>

# QML/QMHL

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## QML-150/ QML-250

- Equipped anti-glare filter
- Suitable for environments that require stable intensity illumination for improved visibility



QML-150-D



QML-250-D



QML-150-K



QML-250-K



QML-150-MF



QML-250-MF

## QMHL-150/ QMHL-250

- High intensity illumination and condenser lens combination
- High intensity illumination allows for the environment both long distance and straightness are required



QMHL-150-D



QMHL-250-D



QMHL-150-K



QMHL-250-K



QMHL-150-MF



QMHL-250-MF

### Optics Specifications

Model	QML-150-D QML-150-K QML-150-MF	QML-250-D QML-250-K QML-250-MF	QMHL-150-D QMHL-150-K QMHL-150-MF	QMHL-250-D QMHL-250-K QMHL-250-MF
Lens color	Translucent	Translucent	Transparent	Transparent
Light color	Cooldaylight			
Color temperature	5,500-6,000K			
Luminous flux	875lm	2,014lm	884lm	1,892lm
Efficacy (lm/W)	620Lux	890Lux	1,000Lux	1,900Lux

### Specifications

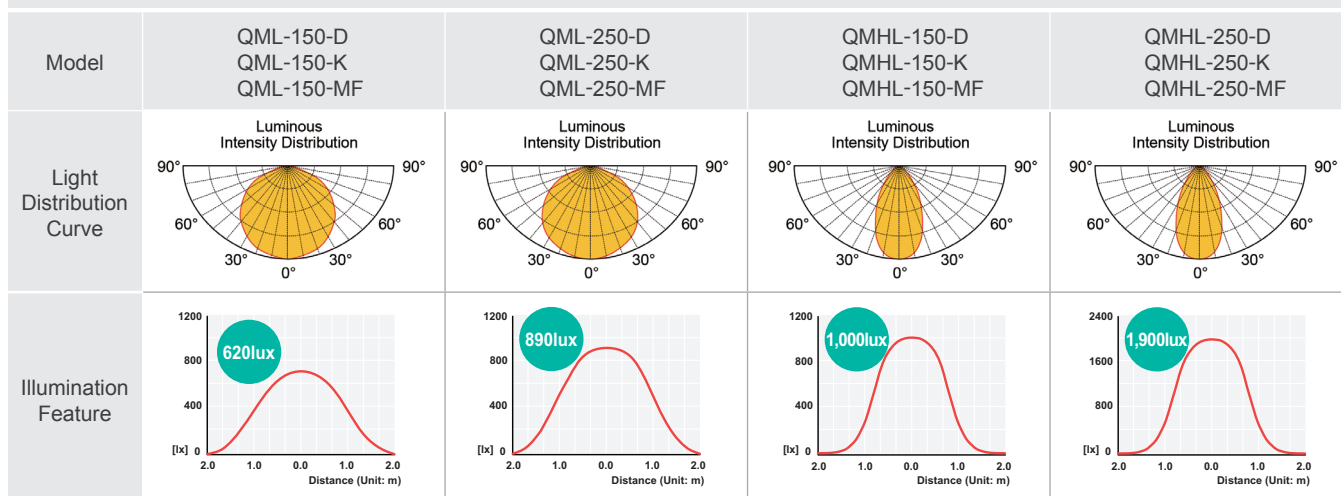
Model	QML-150-D QML-150-K QML-150-MF	QML-250-D QML-250-K QML-250-MF	QMHL-150-D QMHL-150-K QMHL-150-MF	QMHL-250-D QMHL-250-K QMHL-250-MF
Voltage	DC24V	DC24V	DC24V	DC24V
Range for operation voltage	DC21.5V-26.5V			
Current	0.530A	1.180A	0.510A	1.020A
Power consumption	13W	29W	12W	25W
Insulation resistance	Min. 100MΩ(500V DC mega ohm meter)			
Withstanding voltage	DC : 500V AC, 60Hz, 1 minute			
Operating temperature	-30°C to +60°C			
Protection rating	IP67/ IP69K			
Materials	Housing : Al, Lens : Tempered glass, Cover : Al, Bracket : K type-ST5430/MF type-AI			
Certification	CE UL DC only		-	
Weight(Approx.)	QML-150-D : 0.75kg QML-150-K : 0.93kg QML-150-MF : 0.98kg	QML-250-D : 1.30kg QML-250-K : 1.46kg QML-250-MF : 1.52kg	QMHL-150-D : 0.95kg QMHL-150-K : 1.05kg QMHL-150-MF : 1.45kg	QMHL-250-D : 1.20kg QMHL-250-K : 1.30kg QMHL-250-MF : 1.70kg

QML-150-D = Lagertyp

# QML/QMHL

## Water, Vibration and Oil Resistant LED Work Lights with IP67/ IP69K Protection

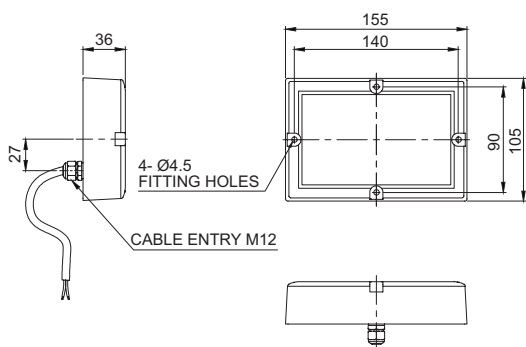
### Light Distribution and Illumination



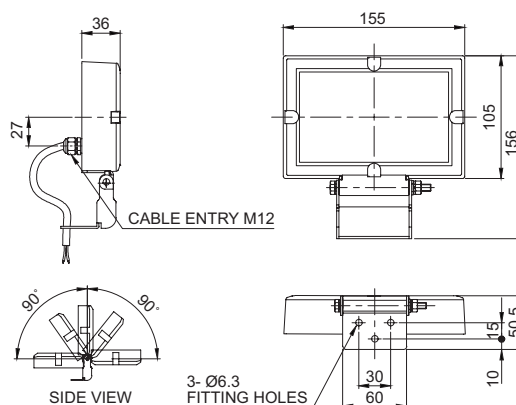
### Technical Diagram

(Units : mm)

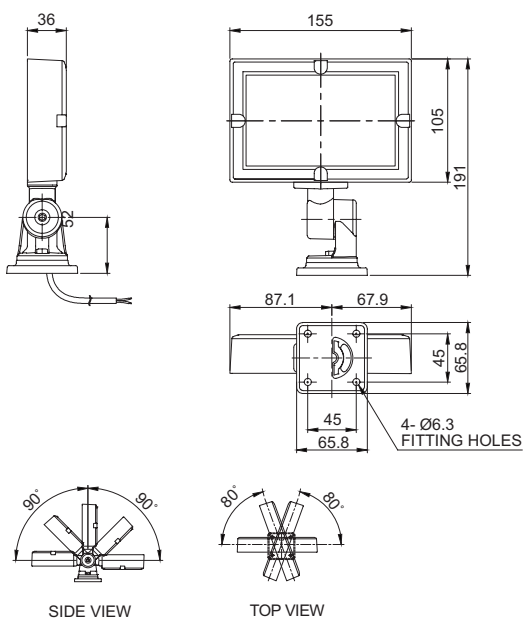
QML/ QMHL-150-D



QML/ QMHL-150-K



QML/ QMHL-150-MF



※ Power line standard : Dura & Flex-F VU (0.5sq) x2C 550mm

# QML/QMHL

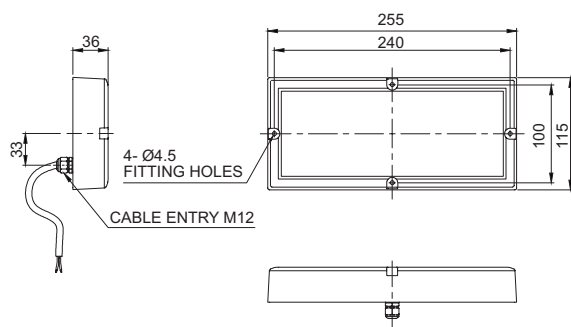
## Water, Vibration and Oil Resistant LED Work Lights with IP67/ IP69K Protection



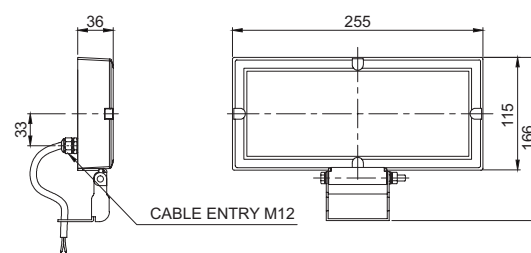
### Technical Diagram

(Units : mm)

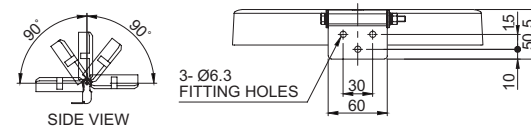
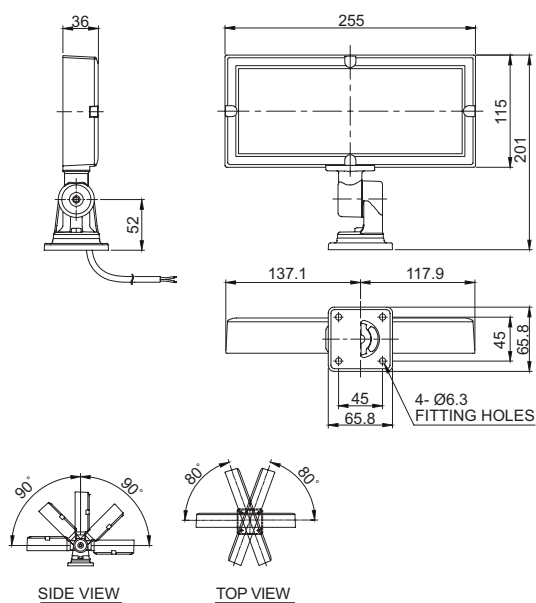
QML/ QMHL-250-D



QML/ QMHL-250-K



QML/ QMHL-250-MF



※ Power line standard : Dura & Flex-F VU (0.5sq) x 2C 550mm



### Ordering Specification

<b>QML</b>	-	<b>150</b>	-	<b>D</b>	-	<b>24</b>
[Model number]		[Product length]		[Mount bracket]		[Voltage]
<ul style="list-style-type: none"> <li>• QML : Anti-Glare</li> <li>• QMHL : High illumination</li> </ul>		<ul style="list-style-type: none"> <li>• 150 : 155mm</li> <li>• 250 : 255mm</li> </ul>		<ul style="list-style-type: none"> <li>• D : Self stand</li> <li>• K : Vertical angle adjustment</li> <li>• MF : Vertical, horizontality angle adjustment</li> </ul>		<ul style="list-style-type: none"> <li>• 24-DC24V</li> </ul>



Please check the safety manual before use, accidents such as fire or electric shock can occur if the safety manual is not followed.

This product can be changed without any notification. Latest information is on the website.

# QMFLN

## Water, Vibration and Oil Resistant LED Work Lights with IP67/ IP69K Protection



### Suitable for machine tool equipment that needs excellent water and oil proof features

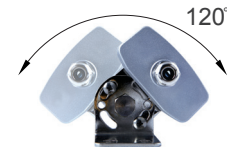


#### Common Specifications

- Special sealing structure provides excellent oil resistance, suitable for environments with high temperature cutting oil
- Suitable for high pressure and high temperature water cleaning environments(IP69K)
- Tempered glass prevents damage from machine tool chips
- Bracket included has tilt adjustment with angle of 120°
- Can select from variety of body length of 200/ 300/ 400/ 500/ 600mm to fit your application needs
- Can choose anti-glare lens type depending on work environment needs
- High illumination type (QMFLN) is available as customization
- Certificates : CE, UL Compliant

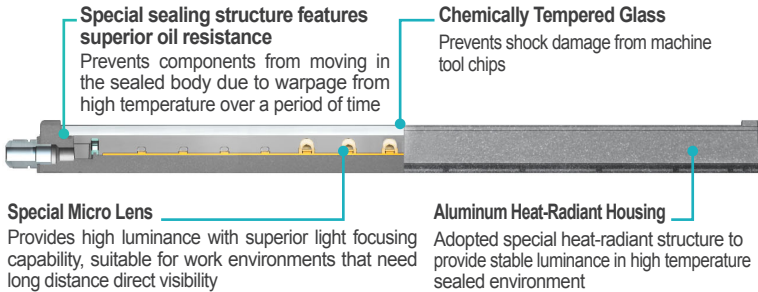


#### Tilt Type K Bracket



The standard bracket included enables tilt adjustment with angle of 120°

#### Structural Features



#### M12 Connector Type



M12 connector attached type available.

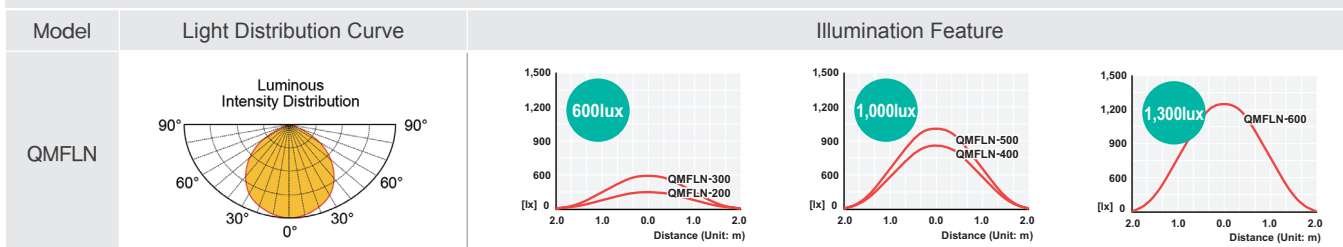
#### Test Conditions/ Regulations

Vibration Resistance Test	<ul style="list-style-type: none"> <li>• Acceleration : 20m/s<sup>2</sup></li> <li>• Duration : 1 octave/min</li> <li>• Range of frequency : 10-150Hz</li> <li>• Amplitude : Maximum 7.5mm, Direction : tested 10times each 3 directions(X, Y, Z)</li> </ul>
Shock Resistance Test	<ul style="list-style-type: none"> <li>• Acceleration : 20g</li> <li>• Directions : ±X, ±Y, ±Z</li> <li>• Numbers : 3 times each directions</li> <li>• Time period : 11ms for each direction</li> <li>• Waveform : Half sine</li> </ul>
Oil Resistance Test	<ul style="list-style-type: none"> <li>• General test : Tested in water soluble and non-water soluble flooded environments for 500 hours.</li> <li>• High temperature oil resistance test : Place the object in a constant temperature water bath at 80°C for two hours and then submerge the object in the room temperature oil diluent for 24hours.</li> </ul>
Solid Particle Protection Test(IP6X)	<ul style="list-style-type: none"> <li>• After reducing the pressure inside the test object, spray talcum powder with a nominal diameter of 50um for 2 hours at 40-60meters/hour inside the dust chamber.</li> <li>• IEC60529</li> </ul>
Liquid Ingress Protection Test(IPX7)	<ul style="list-style-type: none"> <li>• Test ingress by putting the object under 1000mm water with 2bar of pressure for 30 mins</li> </ul>
High-pressure, High-temperature Wash-down Test (IP69K)	<ul style="list-style-type: none"> <li>• Spray nozzle provides 80°C water with pressure of 80–100 bar and a flow rate of 14–16 L/min to the object</li> <li>• Distance between spray nozzle and the test object : 10-15cm</li> <li>• Water spray angle : 0°, 30°, 60°, 90°</li> <li>• The nozzle is held at 4 of each angle for 30 seconds</li> <li>• DIN 40050 PART9</li> </ul>

# QMFLN

## Water, Vibration and Oil Resistant LED Work Lights with IP67/ IP69K Protection

### Light Distribution and Illuminance



### Optics Specifications

Model	QMFLN-200ET FG	QMFLN-300ET FG	QMFLN-400ET FG	QMFLN-500ET FG	QMFLN-600ET FG
Lens color	Transparent	Transparent	Transparent	Transparent	Transparent
Light color	Cooldaylight				
Color temperature	6,000-7,000K				
Luminous flux	DC 732lm	1,626lm	2,411lm	2,710lm	3,523lm
Efficacy (lm/W)	DC 270Lux	600Lux	890Lux	1,000Lux	1,300Lux

### Specifications

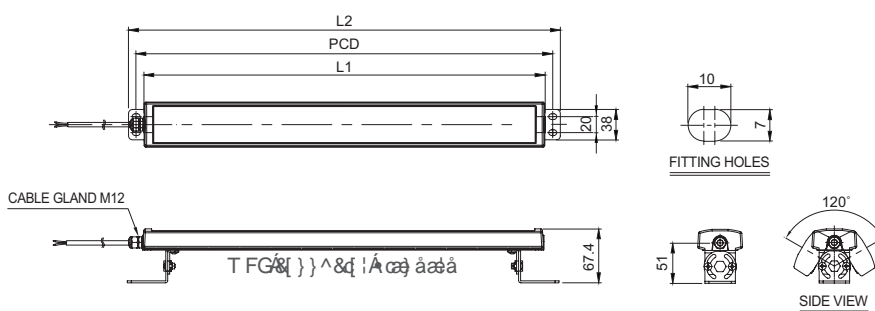
Model	QMFLN-200	QMFLN-300	QMFLN-400	QMFLN-500	QMFLN-600
Voltage	DC24V				
Range for operation voltage	DC22V-30V				
Current	0.235A	0.520A	0.816A	0.816A	1.050A
Power consumption	5.6W	12.5W	20W	20W	25W
Power consumption	Min. 100MΩ(500V DC mega ohm meter)				
Withstanding voltage	500V AC, 60Hz, 1 minute				
Operation temperature	-30°C to +60°C				
Protection rating	IP67/ IP69K				
Materials	Housing: Al, Lens : Tempered glass, Bracket : Spc-1				
Certificates	CE DC24V Only UL DC24V Only				
Weight (Approx.)	0.57kg	0.80kg	1.03kg	1.26kg	1.49kg



### Technical Diagram

(Units : mm)

QMFLN-200/ 300/ 400/ 500/ 600



MODEL	L1	PCD	L2
QMFLN - 200	190	210	230
QMFLN - 300	290	310	330
QMFLN - 400	400	420	440
QMFLN - 500	500	520	540
QMFLN - 600	600	620	640



### Ordering Specification

<b>QMFLN</b>	-	<b>200</b>	-	<b>24</b>	-	<b>TLC</b>
[Model number]		[Product length]		[Voltage]		[Lens type]
• QMFLN		• 200 : 190mm • 300 : 290mm • 400 : 400mm • 500 : 500mm • 600 : 600mm		• 24-DC24V		• (Blank) - Transparent lens • TLC - Translucent lens