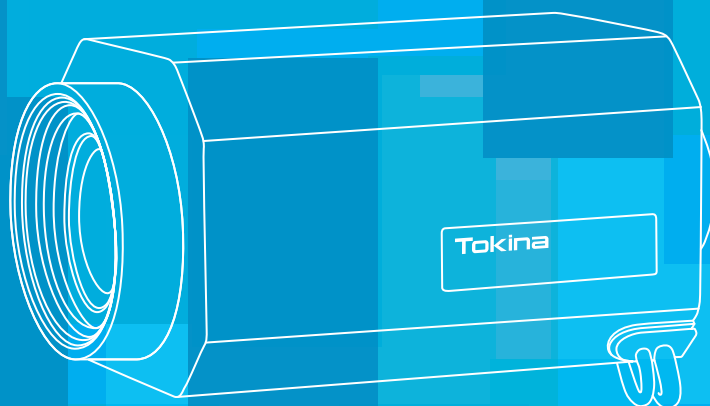


Tokina

SECURITY PRODUCTS CCTV LENSES



INDEX

SECURITY PRODUCTS

THE LARGEST INTEGRATED PTZ

APTO-S955	3
APTO-221	4

DOMES ENCLOSURE

DCHO-191C (CEILING)	5
DCHO-191W (WALL)	5

CAMERA HOUSING

VCHO-15S	6
VCHO-15SL	6
VCHO-15SDHF	6
VCHO-35S	6
VCHO-14	7
Accessories for VCHO-14	
FAN-16 (I) Fan Kit	7
DEF-16 (I) Defroster Kit	7
HTR-16 (I) Heater Kit	7
WTR-16 (I) Wiper Kit	7
VCH-90S	7

MOUNTING BRACKET

HT-001	8
WH-5	8
WH-4PL / WH-6N	8
SFP-3	8
PTP-300 / PTP-500	9
CBM-500	9
WH-11 / WH-LS1 / WH-LS3	9
WH-21 / WH-31 / WH-31L	10

LARGE TRIPOD

WGT-140D	10
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CCTV Lenses

Quick Reference CCTV Lenses	11
IR Corrected Megapixel Vari-Focal Lens	12-15
Megapixel Vari-Focal Lens	16
High Resolution Vari-Focal Lens	16-17
Motorized Zoom Lens	18-19
Long Focal Length Motorized Zoom Lens	20-23
Megapixel Long Focal Length Motorized Zoom Lens	24
IR Corrected Megapixel Motorized Zoom Lens	25
Intelligent Auto Focus Motorized Zoom Lens	26-29
IR Corrected Megapixel Motorized Zoom Lens	30-32

Technical Information

Motorized Zoom Lens: Cable Connection	33
Intelligent Auto Focus Motorized Zoom Lens: Cable Connection	34
Feature	35
Glossary	35

THE LARGEST INTEGRATED PTZ

APTO-S955

High performance model under extreme environment
It is suitable for port and border surveillance.

INTEGRATED POSITIONING UNIT

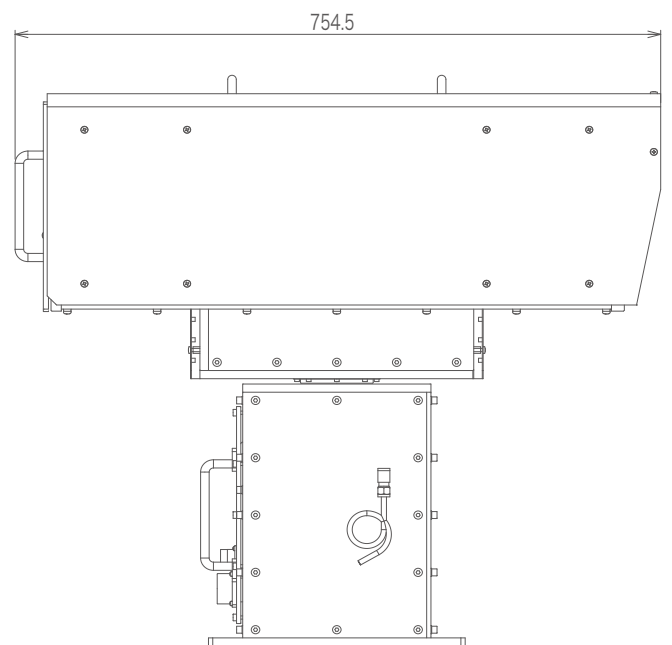
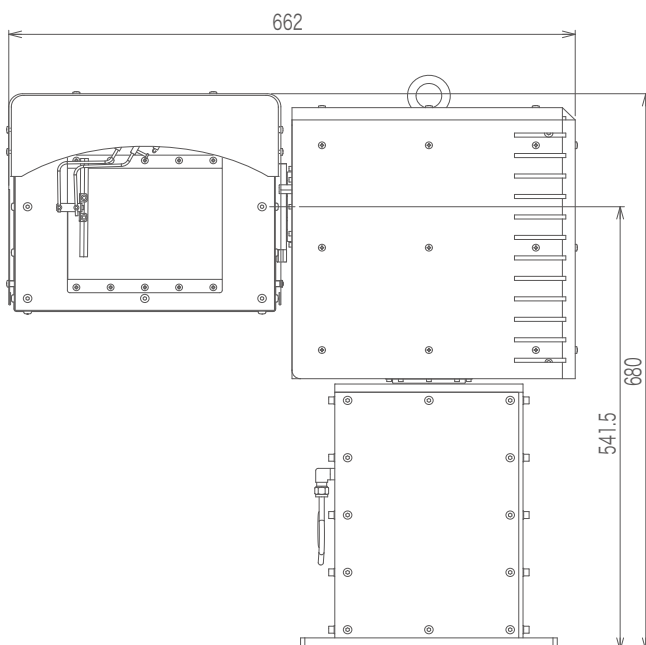
STANDARD SPECIFICATION

INSTALLATION CONDITION	OUTDOOR UP RIGHT (NO VIBRATION)
TEMPERATURE	-20 ~ +50°C (PROVIDED THAT AT 0°C OR LESS IN AN ENERGIZING STATE AND NO FROZEN)
HUMIDITY (RH)	30 ~ 90% (NO DEW CONDENSATION)
WIND PRESSURE	WIND 40m/s OR LESS - NORMAL OPERATION WIND 60m/s OR LESS - MANUAL OPERATIONAL WIND 90m/s OR LESS - NON-DESTRUCTIVE
STRUCTURE	JIS C 0920 IP66s
DEFROSTER GLASS	AUTO ON / OFF
WIPER	MANUAL ON (5 SEC.) / OFF
PANNING & TILT ANGLE	HORIZONTAL 360° ENDLESS / VERTICAL ± 90°
MAXIMUM PANNING SPEED	H · V 180°/s
MINIMUM PANNING SPEED	H · V 0.001°/s OR LESS (MANUAL OPERATION)
STOP ACCURACY	H · V ± 0.01 ~ 0.025° OR LESS
CONTROL SIGNAL	RS-485 (FACTORY DEFAULT SETTING) OR RS-232C , RS-422
COMMUNICATION PROTOCOL	PELCO-D
OUTER DIMENSION	W655.5 x D757.5 x H685.5mm (WITHOUT PROTRUSION)
WEIGHT	APPROX. 60kg (EXCLUDING CAMERA AND LENS)
POWER SUPPLY	AC100V-240V, 50Hz / 60Hz
POWER CONSUMPTION	APPROX. 500VA
PAINT	POLYURETHANE RESIN COATING
EXTERNAL CONTROL	PAN&TILT / PRESET MAX.254 POINTS / PRESET SEQUENCE
AUTO CONTROL	DEFROSTER - TURN ON +10°C OR LESS BY PANEL TEMPERATURE FAN - TURN ON +25°C OR LESS BY HOUSING INTERNAL TEMPERATURE HEATER - TURN ON +5°C OR LESS, TURN OFF +15°C BY HOUSING INTERNAL TEMPERATURE



OPTION

ILLUMINATOR	500W XENON LAMP (1km 25lx.)
COLD RESISTANCE	-40°C
HEAT RESISTANCE	+60°C

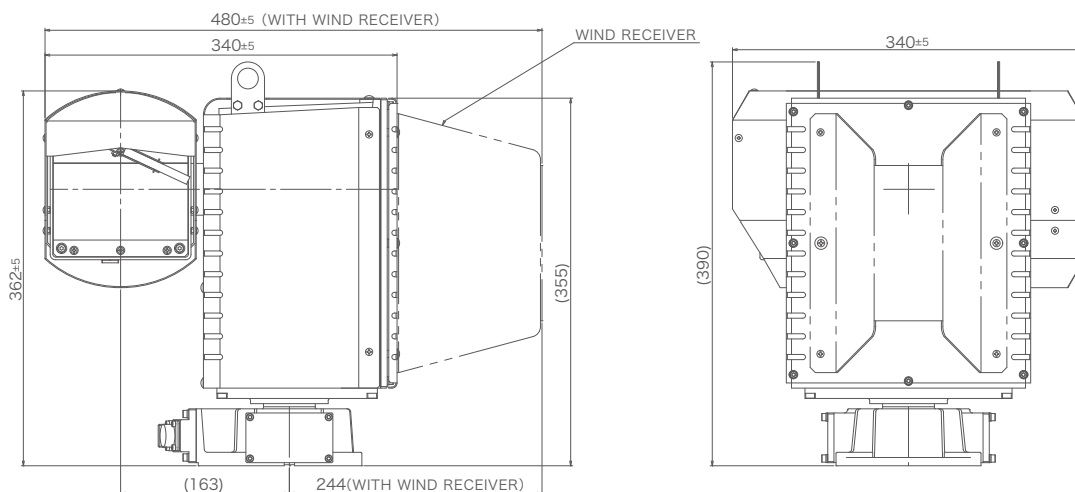


THE LARGEST INTEGRATED PTZ

APTO-221

STANDARD SPECIFICATION

INSTALLATION CONDITION	OUTDOOR UP RIGHT (NO VIBRATION)
TEMPERATURE	-10 ~ +50℃
HUMIDITY (RH)	30 ~ 90% (NO DEW CONDENSATION)
WIND PRESSURE	WIND 20m/s OR LESS NORMAL OPERATION (WITH WIND RECEIVER)
	WIND 40m/s OR LESS MANUAL OPERATIONAL (WITH WIND RECEIVER)
	WIND 60m/s OR LESS NON-DESTRUCTIVE
STRUCTURE	JIS C 0920 IP55
PANNING & TILT ANGLE	HORIZONTAL ± 360° ENDLESS / VERTICAL ± 90°
MAXIMUM PANNING SPEED	HORIZONTAL 180°/s, VERTICAL 90°/s (IN PRESET OPERATION)
MINIMUM PANNING SPEED	HORIZONTAL · VERTICAL 0.5°/s (IN PRESET OPERATION)
STOP ACCURACY	HORIZONTAL · VERTICAL ± 0.15°
CONTROL SIGNAL	RS-485
COMMUNICATION PROTOCOL	PELCO-D
OUTER DIMENSION	W495 x D451 x H434mm (WITHOUT PROTRUSION)
WEIGHT	APPROX.20kg (EXCLUDING CAMERA AND LENS)
POWER SUPPLY	AC100V, 50Hz / 60Hz
POWER CONSUMPTION	APPROX. 190 VA
PAINT	POLYURETHANE RESIN COATING
EXTERNAL CONTROL	PAN&TILT / PRESET MAX.32 POINTS / PRESET SEQUENCE
	ABSOLUTE VALUE CONTROL (PAN / TILT / ZOOM / FOCUS)



VARIABLE OPTIONS ARE AVAILABLE



WITH ONE LIGHTING EQUIPMENT

WITH TWO LIGHTING EQUIPMENT

TWIN HOUSING

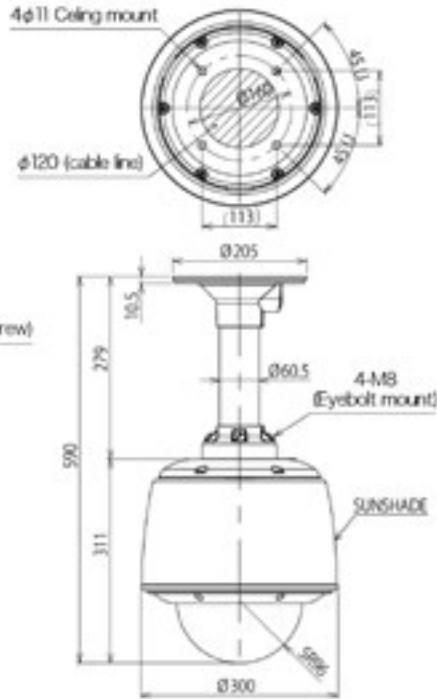
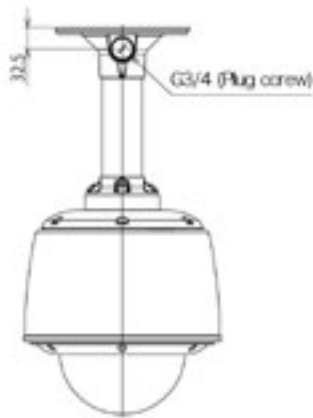
LARGE HOUSING

SNOW FALLING TYPE ROOF

DOME ENCLOSURE

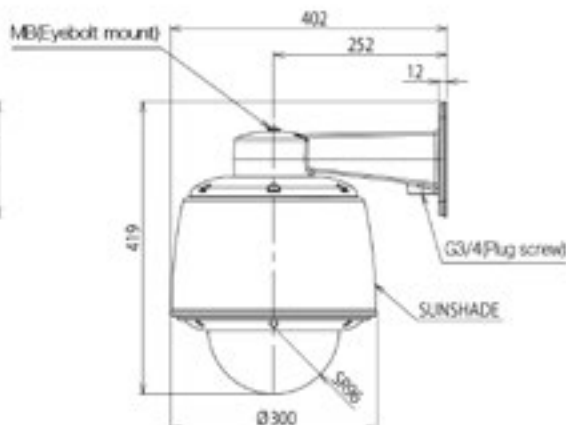
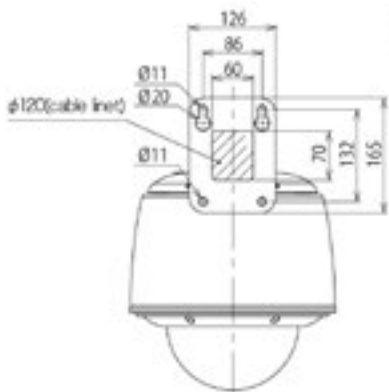
DCHO-191C (CEILING)

SPECIFICATION		RoHS
Installation condition	outdoor / ceiling suspending	
Water proof	IP66	
Temperature	-20°C~ +45°C	
Main material	Aluminium die casting and AES	
Paint	ivory	
Power supply	AC100V, 50Hz / 60Hz	
Fan	5/4W controlled by thermostat	
Heater	40W controlled by thermostat	
Power consumption	max. 45W	
Weight	4.2kg	
Mounting screw	M10	



DCHO-191W (WALL)

SPECIFICATION		RoHS
Installation condition	outdoor / wall surface	
Water proof	IP66	
Temperature	-20°C~ +45°C	
Main material	Aluminium die casting and AES	
Paint	ivory	
Power supply	AC100V, 50Hz / 60Hz	
Fan	5/4W controlled by thermostat	
Heater	40W controlled by thermostat	
Power consumption	max. 45W	
Weight	4.1kg	
Mounting screw	M10 (With SPF-3, M8)	



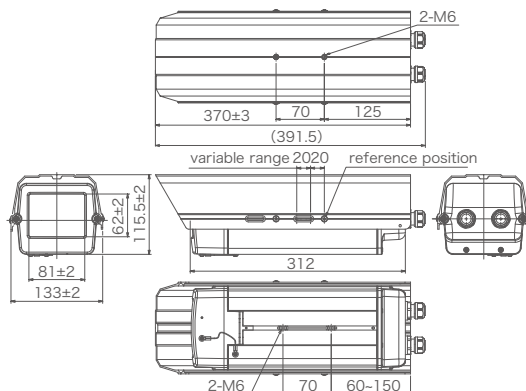
CAMERA HOUSING

VCHO-15S

SPECIFICATION

Installation condition	outdoor & indoor / up right / ceiling suspending
Water proof	IPx5
Temperature	-10°C~+45°C
Main material	Aluminium alloy
Paint	ivory
Weight	2.4kg
Mounting screw	M6 x 2pcs.
Mounting bracket	WH-6N / PTP-300 / PTP-500 / PTP-SP
Option	antirust coating

RoHS

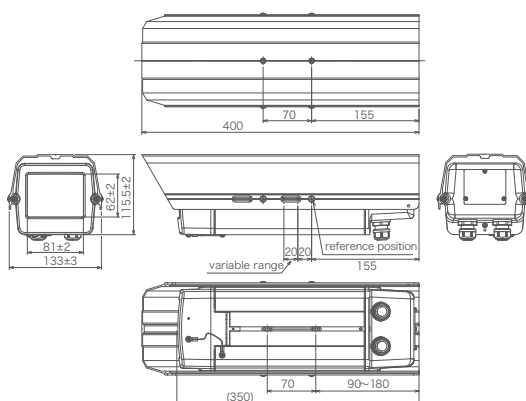


VCHO-15SL

SPECIFICATION

Installation condition	outdoor & indoor / up right / ceiling suspending
Water proof	IPx5
Temperature	-10°C~+45°C
Main material	Aluminium alloy
Paint	ivory
Weight	2.6kg
Mounting screw	M6 x 2pcs.
Mounting bracket	WH-6N / PTP-300 / PTP-500 / PTP-SP
Option	antirust coating

RoHS

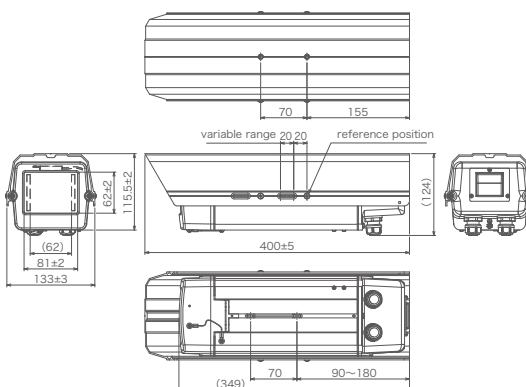


VCHO-15SDHF

SPECIFICATION

Installation condition	outdoor & indoor / up right / ceiling suspending
Water proof	IPx3
Temperature	-15°C~+45°C
Main material	Aluminium alloy
Paint	ivory
Weight	approx. 3kg
Mounting screw	M6 x 2pcs.
Mounting bracket	WH-6N / PTP-300 / PTP-500 / PTP-SP
Power supply	AC100V, 50Hz / 60Hz
Power consumption	max. 20W
Option	antirust coating

RoHS

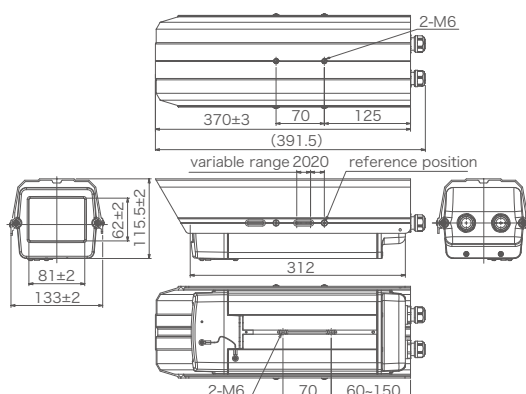


VCHO-35S

SPECIFICATION

Installation condition	outdoor & indoor / up right / ceiling suspending
Water proof	IP66
Temperature	-10°C~+45°C
Main material	Aluminium alloy
Paint	ivory
Weight	2.5kg
Mounting screw	M6 x 2pcs.
Mounting bracket	WH-6N / PTP-300 / PTP-500 / PTP-SP

RoHS

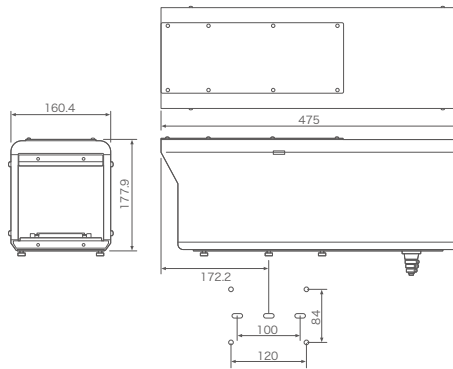


CAMERA HOUSING

VCHO-14

SPECIFICATION

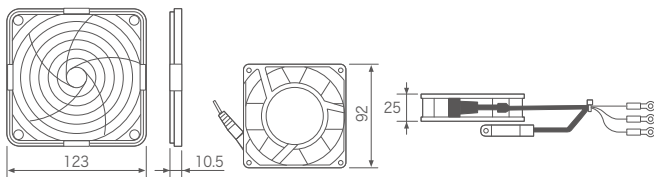
Installation condition	outdoor & indoor
Water proof	IPx3
Temperature	-15°C ~ +45°C
Main material	Aluminium and SPCC
Paint	ivory
Weight	3.7kg
Mounting screw	M6 x 4pcs.
Option	See below



Accessories for VCHO-14

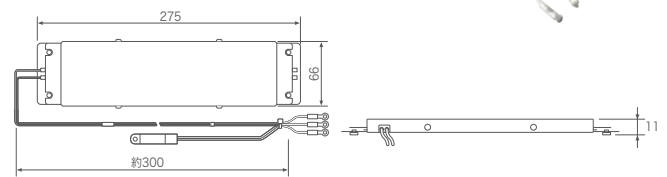
FAN-16 (I)

Fan Kit



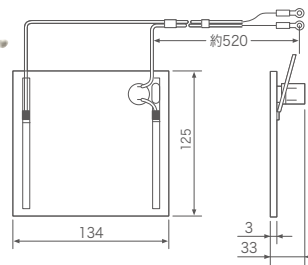
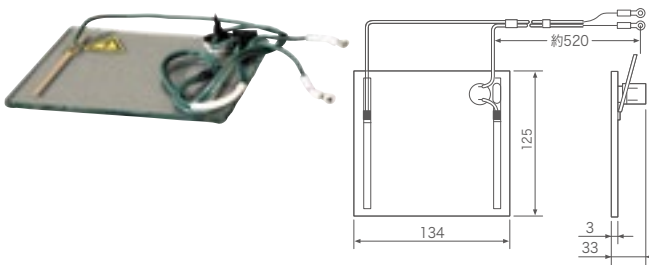
HTR-16 (I)

Heater Kit



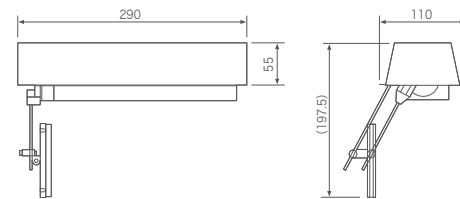
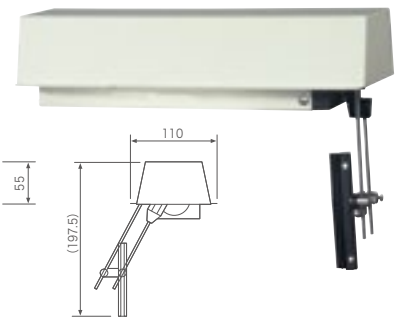
DEF-16 (I)

Defroster Kit



WTR-16 (I)

Wiper Kit

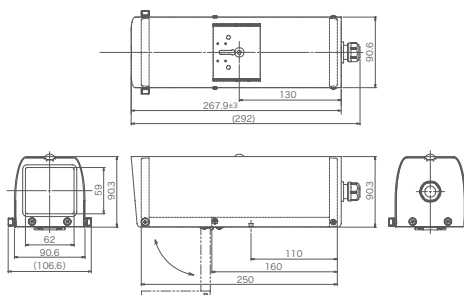


VCH-90S

SPECIFICATION

RoHS

Installation condition	outdoor / up right / ceiling suspending
Water proof	IP66
Temperature	-10°C ~ +45°C
Main material	Aluminium alloy
Paint	ivory
Weight	0.8kg
Mounting screw	U 1/4
Mounting bracket	WH-4PL / WH-11 / WH-21 / WH-31 / WH-31L



MOUNTING BRACKET

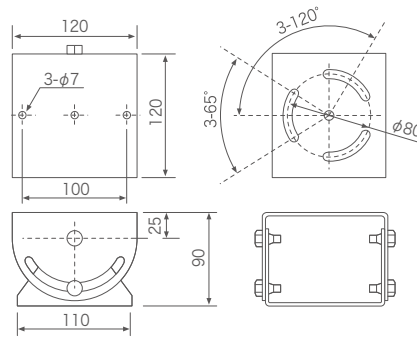
HT-001

HEAVY DUTY HOUSING BRACKET

SPECIFICATION

RoHS

Installation condition	outdoor & indoor
Main material	Steel SECC
Capability	50kg
Weight	1.2kg
Compatible with	VCHO-15S, VCHO-14



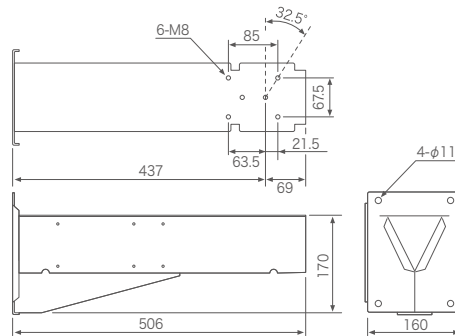
WH-5

HEAVY DUTY WALL BRACKET

SPECIFICATION

RoHS

Installation condition	outdoor & indoor
Main material	Steel SECC
Capability	50kg
Weight	4.8kg
Combination use with	HT-050, HT-001



WH-4PL / WH-6N

HEAVY DUTY WALL BRACKET

SPECIFICATION

RoHS

	WH-4PL	WH-6N
Installation condition	indoor	outdoor & indoor
Main material	Aluminium die casting and steel SECC	Aluminium die casting
Capability	10kg	15kg
Weight	0.85kg	1.4kg
Compatible with	CCTV cameras, VCH-905	VCHO-15S series, VCHO-14
Option	-	antirust coating

SFP-3

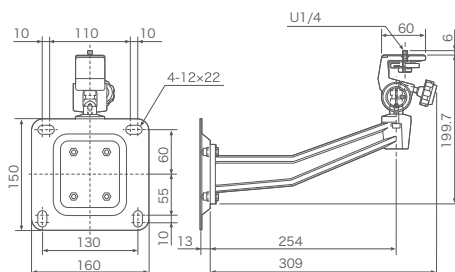
HEAVY DUTY POLL BRACKET

SPECIFICATION

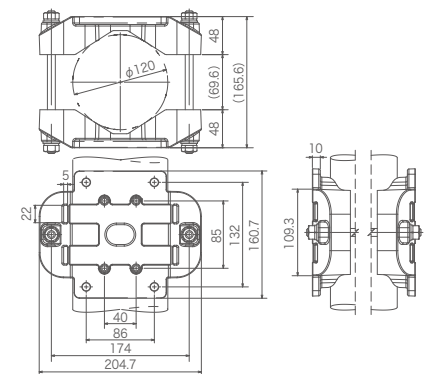
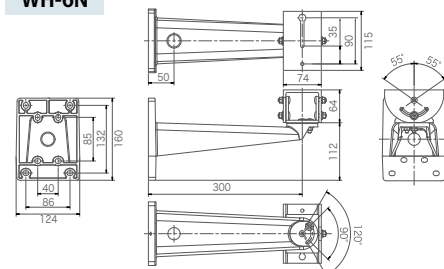
RoHS

Installation condition	outdoor & indoor
Main material	Aluminium die casting
Capability	15kg
Weight	1.5kg
Compatible with	WH-6N, DCHO-191
Option	antirust coating

WH-4PL



WH-6N

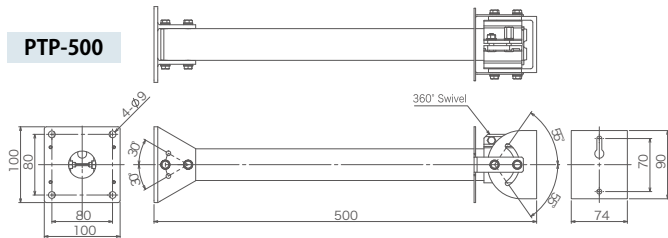
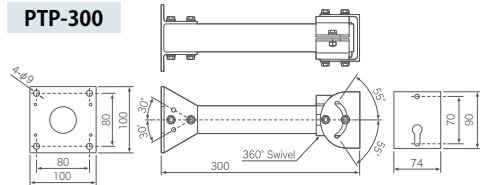


MOUNTING BRACKET

PTP-300 / PTP-500

HEAVY DUTY CEILING BRACKET

SPECIFICATION	RoHS	
	PTP-300	PTP-500
Installation condition	outdoor & indoor	
Main material	Aluminium alloy	
Capability	10kg	
Weight	0.9kg	1.1kg
Compatible with	VCHO-15S series	
Option	antirust coating	



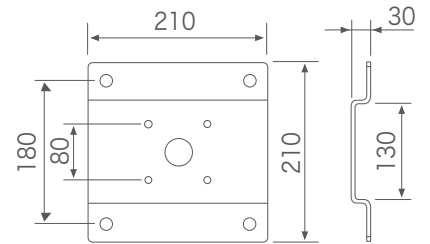
PTP-300

PTP-500

CBM-500

HEAVY DUTY CEILING MOUNT BASE

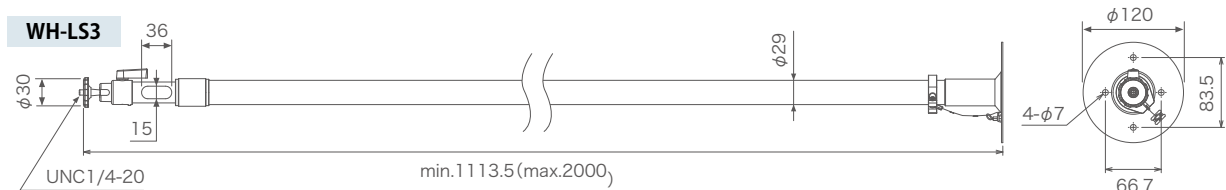
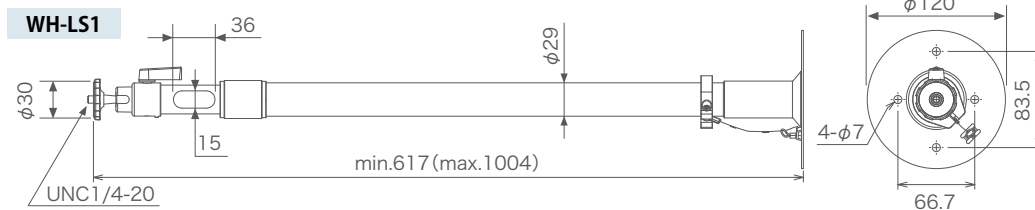
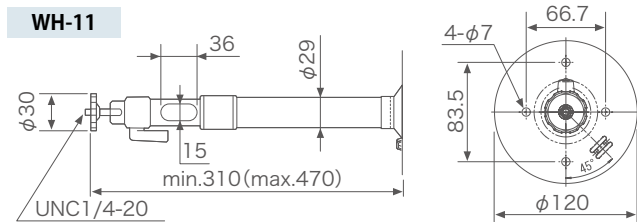
SPECIFICATION	RoHS	
Installation condition	outdoor & indoor	
Main material	Aluminium alloy	
Weight	0.7kg	
Combination use with	PTP series	
Option	antirust coating	



WH-11 / WH-LS1 / WH-LS3

CEILING BRACKET

SPECIFICATION	RoHS		
	WH-11	WH-LS1	WH-LS3
Installation condition	indoor/ceiling		
Main material	Steel SPCC and aluminium alloy		
Capability	4kg	2kg	
Weight	0.4kg	0.96kg	
Compatible with	CCTV cameras, VCH-90S	CCTV cameras	
Note	internal cable channel, one touch adjustable		



WH-11

WH-LS1

WH-LS3

MOUNTING BRACKET

WH-21 / WH-31 / WH-31L

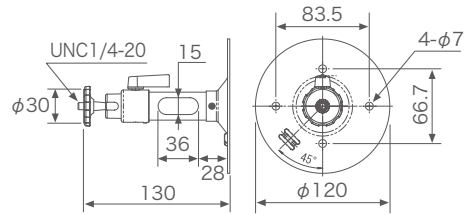
WALL/CEILING BRACKET

SPECIFICATION

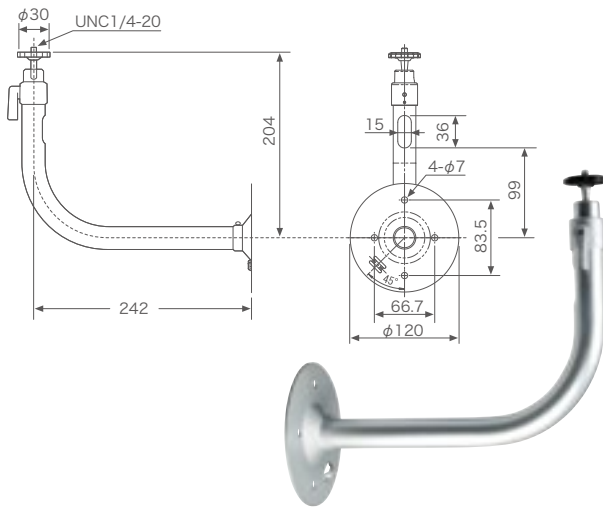
	WH-21	WH-31	WH-31L
Installation condition	indoor/ceiling/wall surface		
Main material	Steel SPCC and aluminium alloy		
Capability	2kg	4kg	
Weight	0.34kg	0.26kg	0.28kg
Compatible with	CCTV cameras, VCH-905		
Note	internal cable channel, one touch adjustable		

RoHS

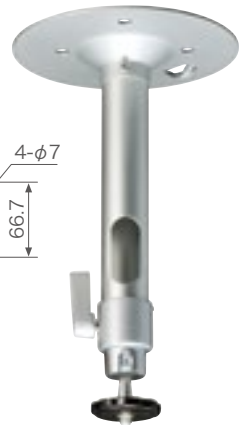
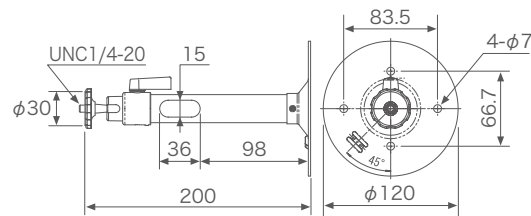
WH-31



WH-21



WH-31L









LARGE TRIPOD

WGT-140D

SPECIFICATION

Capability	30kg
Weight	5kg
Main material	Aluminium die casting
Note	Special order item

		
1,390mm	740mm	820mm
		
worm drive	36mm 2sections	approx. 5000g

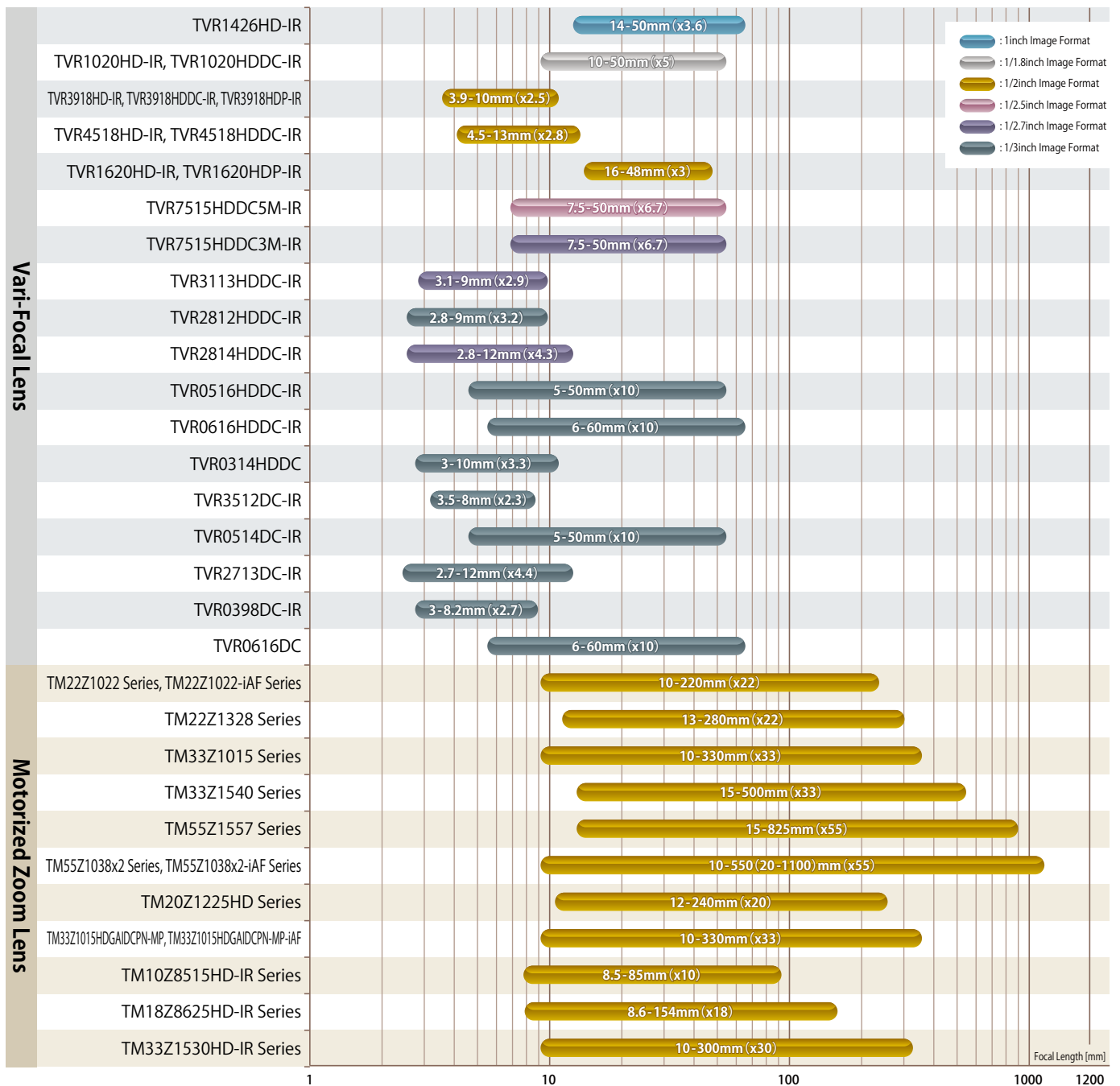


Usage example
PTZ unit APTO-221 on WGT-140D



Quick Reference CCTV Lenses

Vari-Focal Lens & Zoom Lens



IR Corrected Megapixel Vari-Focal Lens

TVR1426HD-IR TVR1020HD-IR TVR1020HDDC-IR TVR3918HD-IR

1" 8MP IR

1/1.8" 3MP IR

1/1.8" 3MP IR

1/2" 3MP IR



NEW SD RoHS

SD RoHS

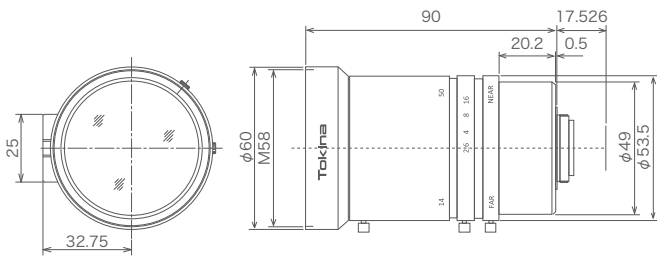
SD RoHS

SD RoHS

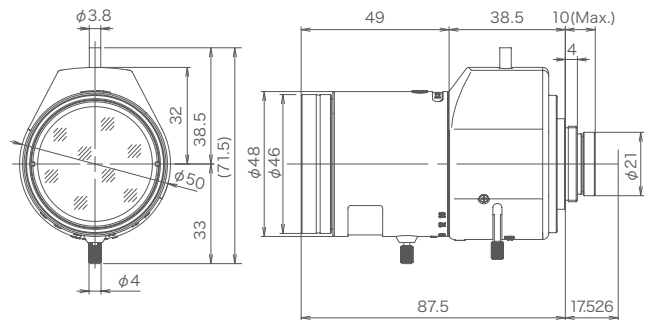
Model Name	TVR1426HD-IR	TVR1020HD-IR	TVR1020HDDC-IR	TVR3918HD-IR
Image Format	1"	1/1.8"	1/1.8"	1/2"
Mount	C	C	C	CS
Focal Length	14-50mm	10-50mm	10-50mm	3.9-10mm
Aperture Range	F2.6-16	F2.0-C	F2.0-360	F1.8-C
Angle of View	Wide	40.53° x 30.20°	40.53° x 30.20°	96.5° x 70.95°
(Horizontal x Vertical)	Tele	14.5° x 11.1°	8.49° x 6.37°	36.5° x 28.0°
M.O.D.	1.2m	0.3m	0.3m	0.3m
Back Focal Length	13.995mm	9.422mm	9.422mm	7.3mm - 13.22mm
Dimensions (W x H x L)	ø60 x 90mm	ø50.0 x 57.0 x 87.5mm	ø50.0 x 57.0 x 87.5mm	ø36.0 x 46.52mm
Weight	390g	250g	260g	105g
Operating Temperature Range	-10 ~ +50 °C	-10 ~ +50 °C	-10 ~ +50 °C	-20 ~ +50 °C
Operating	Iris	Manual	DC Auto Iris	Manual
	Focus	Manual	Manual	Manual
	Zoom	Manual	Manual	Manual
Note	IR (Day/Night), 8Megapixel	IR (Day/Night), 3Megapixel	IR (Day/Night), 3Megapixel	IR (Day/Night), 3Megapixel

UNIT : mm

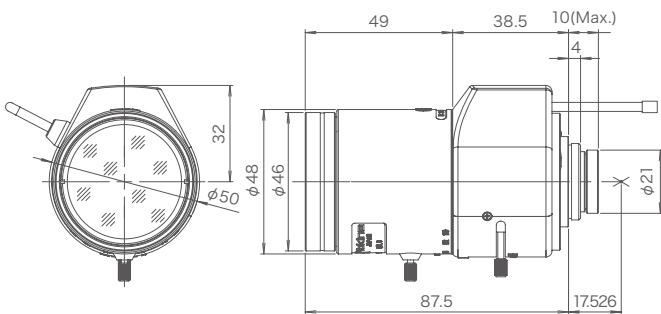
TVR1426HD-IR



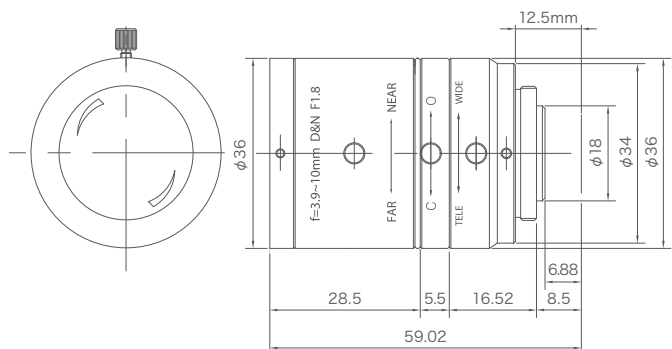
TVR1020HD-IR



TVR1020HDDC-IR



TVR3918HD-IR



IR Corrected Megapixel Vari-Focal Lens

TVR3918HDDC-IR TVR3918HDP-IR TVR4518HD-IR TVR4518HDDC-IR

1/2" 3MP IR

1/2" 3MP IR

1/2" 5MP IR

1/2" 5MP IR



SD RoHS

NEW SD RoHS

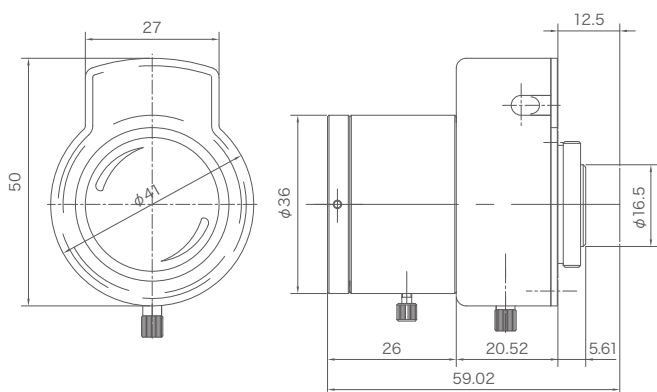
SD RoHS

SD RoHS

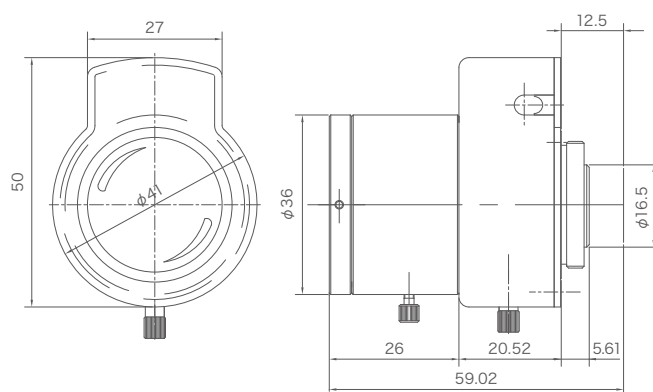
Model Name	TVR3918HDDC-IR	TVR3918HDP-IR	TVR4518HD-IR	TVR4518HDDC-IR
Image Format	1/2"	1/2"	1/2"	1/2"
Mount	CS	CS	CS	CS
Focal Length	3.9-10mm	3.9-10mm	4.5-13mm	4.5-13mm
Aperture Range	F1.8 - 360	F1.8 - 360	F1.8 - C	F1.8 - 360
Angle of View	Wide	Wide	Wide	Wide
(Horizontal x Vertical)	96.5° x 70.95°	96.5° x 70.95°	90.3° x 66.6°	90.3° x 66.6°
	Tele	Tele	Tele	Tele
	37.3° x 28.0°	37.3° x 28.0°	29.4° x 24.0°	31.2° x 24.0°
M.O.D.	0.3m	0.3m	0.5m	0.5m
Back Focal Length	7.3mm - 13.22mm	7.3mm - 13.22mm	6.67mm	6.67mm
Dimensions (W x H x L)	ø41.0 x 50 x 46.52mm	ø41.0 x 50 x 46.52mm	ø39.0 x 59.0mm	ø39.0 x 59.0 x 61.0mm
Weight	105g	105g	123g	137g
Operating Temperature Range	-20 ~ +50 °C	-20 ~ +50 °C	-5 ~ +50 °C	-20 ~ +50 °C
Operating	Iris	DC Auto Iris	Manual	DC Auto Iris
	Focus	Manual	Manual	Manual
	Zoom	Manual	Manual	Manual
Note	IR (Day/Night), 3Megapixel	IR (Day/Night), 3Megapixel	IR (Day/Night), 5Megapixel	IR (Day/Night), 5Megapixel

UNIT : mm

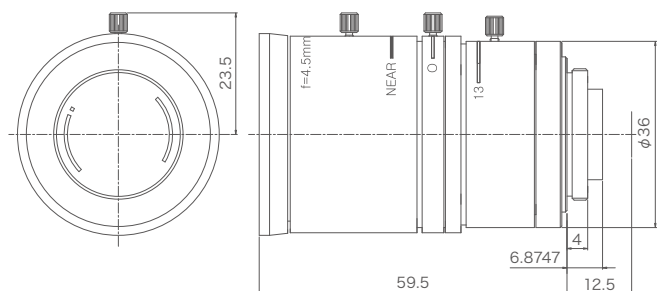
TVR3918HDDC-IR



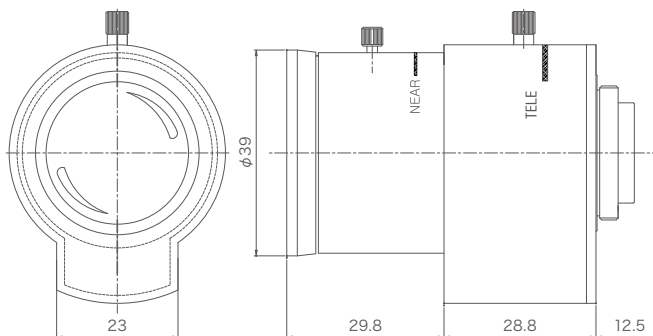
TVR3918HDP-IR



TVR4518HD-IR



TVR4518HDDC-IR



IR Corrected Megapixel Vari-Focal Lens

TVR1620HD-IR TVR1620HDP-IR TVR7515HDDC5M-IR TVR7515HDDC3M-IR

1/2" 5MP IR

1/2" 5MP IR

1/2.5" 5MP IR

1/2.7" 3MP IR



SD RoHS

NEW SD RoHS

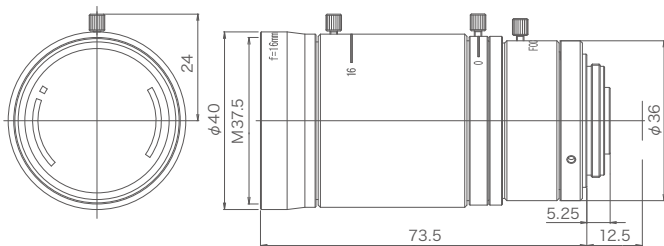
NEW As SD RoHS

NEW As SD RoHS

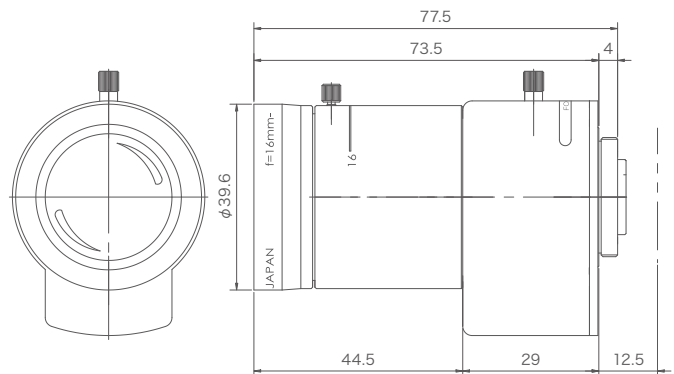
Model Name	TVR1620HD-IR	TVR1620HDP-IR	TVR7515HDDC5M-IR	TVR7515HDDC3M-IR
Image Format	1/2"	1/2"	1/2.5"	1/2.7"
Mount	CS	CS	CS	CS
Focal Length	16-48mm	16-48mm	7.5-50mm	7.5-50mm
Aperture Range	F2.0 - C	F2.0 - C	F1.5-360	F1.5-360
Angle of View (Horizontal x Vertical)	Wide	25.8° x 19.04°	41.0° x 30.8°	38.0° x 28.6°
	Tele	8.8° x 6.42°	8.8° x 6.42°	6.7° x 5.0°
M.O.D.	0.415m	0.415m	0.5m	0.5m
Back Focal Length	8.81mm	8.81mm	9.3-10.7mm	9.3-10.7mm
Dimensions (W x H x L)	ø40.0 x 73.5mm	ø39.6 x 50 x 73.5mm	ø52.0 x 72.9mm	ø46.3 x 68.4mm
Weight	150g	150g	174g	162g
Operating Temperature Range	-5 ~ +50 °C	-5 ~ +50 °C	-10 ~ +50 °C	-10 ~ +50 °C
Operating	Iris	Manual	P Iris	DC Auto Iris
	Focus	Manual	Manual	Manual
	Zoom	Manual	Manual	Manual
Note	IR (Day/Night), 5Megapixel	IR (Day/Night), 5Megapixel	IR (Day/Night), 5Megapixel	IR (Day/Night), 3Megapixel

UNIT : mm

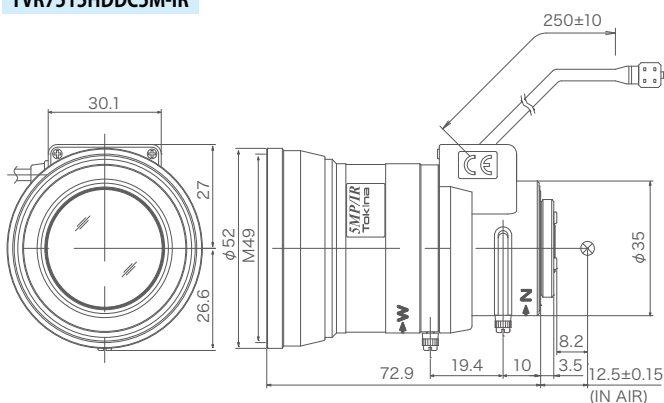
TVR1620HD-IR



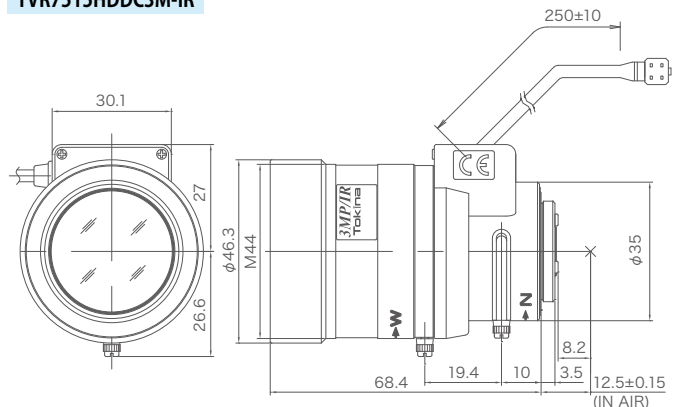
TVR1620HDP-IR



TVR7515HDDC5M-IR



TVR7515HDDC3M-IR



IR Corrected Megapixel Vari-Focal Lens

TVR3113HDDC-IR TVR2812HDDC-IR TVR2814HDDC-IR TVR0516HDDC-IR

1/2.7" 3MP IR

1/3" 3MP IR

1/2.7" 2MP IR

1/3" 2MP IR



NEW As SD RoHS

NEW As SD RoHS

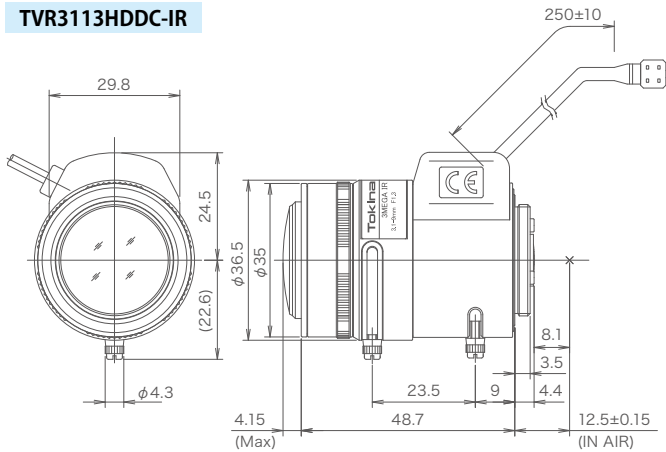
SD RoHS

SD RoHS

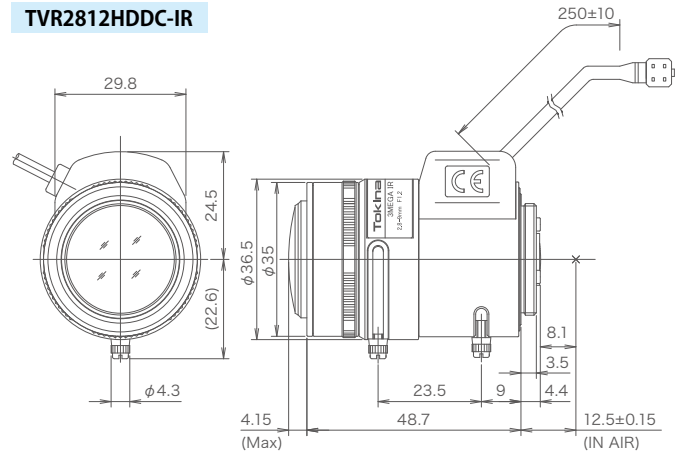
Model Name	TVR3113HDDC-IR	TVR2812HDDC-IR	TVR2814HDDC-IR	TVR0516HDDC-IR
Image Format	1/2.7"	1/3"	1/2.7"	1/3"
Mount	CS	CS	CS	CS
Focal Length	3.1-9mm	2.8-9mm	2.8-12mm	5-50mm
Aperture Range	F1.3 - 360	F1.2 - 360	F1.4 - 360	F1.6 - 360
Angle of View	Wide	Wide	Wide	Wide
(Horizontal x Vertical)	99.4° x 73.1°	97.7° x 71.9°	106.1° x 76.1°	49.2° x 37.1°
Tele	34.8° x 26.1°	31.7° x 23.8°	33.3° x 24.8°	5.0° x 3.8°
M.O.D.	0.5m	0.5m	0.3m	0.5m
Back Focal Length	8.3 - 15.5mm	8.0 - 15.5mm	7.73mm	8.86mm
Dimensions (W x H x L)	ø36.5 x 42.8 x 48.7mm	ø36.5 x 42.8 x 48.7mm	ø28 x 38.65 x 43.7mm	ø39.0 x 47.2 x 70.2mm
Weight	55.5g	55.5g	90g	120g
Operating Temperature Range	-20 ~ +50 °C	-20 ~ +50 °C	-10 ~ +50 °C	-10 ~ +50 °C
Operating	Iris	DC Auto Iris	DC Auto Iris	DC Auto Iris
	Focus	Manual	Manual	Manual
	Zoom	Manual	Manual	Manual
Note	IR (Day/Night), 3Megapixel	IR (Day/Night), 3Megapixel	IR (Day/Night), 2Megapixel	IR (Day/Night), 2Megapixel

UNIT : mm

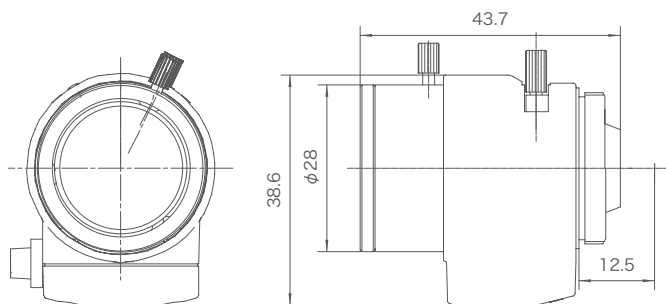
TVR3113HDDC-IR



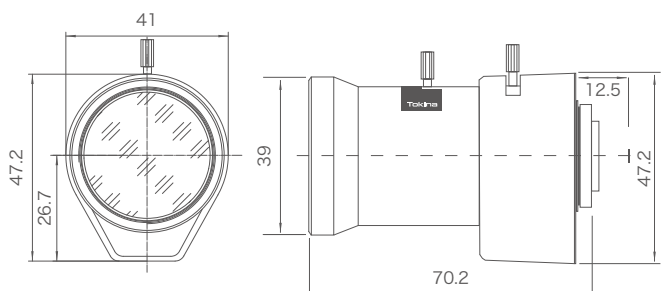
TVR2812HDDC-IR



TVR2814HDDC-IR



TVR0516HDDC-IR



Megapixel / High Resolution Vari-Focal Lens

TVR0616HDDC-IR TVR0314HDDC TC1514HD-IR TVR3512DC-IR

1/3" MP IR

1/3" 3MP

1/2" 3MP IR

1/3" IR



Fisheye

SD RoHS

As RoHS

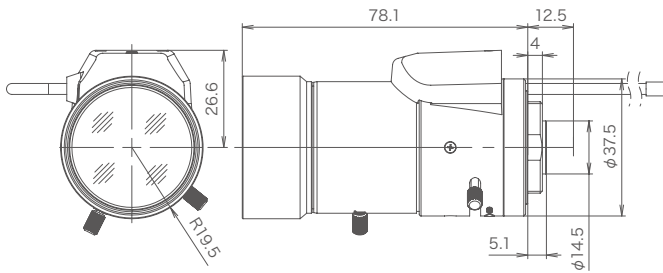
RoHS

SD RoHS

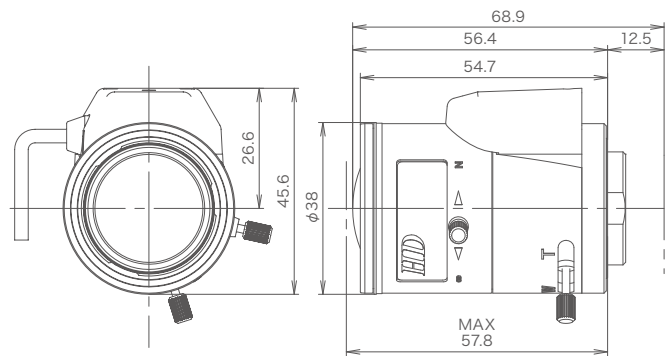
Model Name	TVR0616HDDC-IR	TVR0314HDDC	TC1514HD-IR	TVR3512DC-IR
Image Format	1/3"	1/3"	1/2"	1/3"
Mount	CS	CS	CS	CS
Focal Length	6-60mm	3-10mm	1.5mm	3.5-8mm
Aperture Range	F1.6 - 360	F1.4 - 360	F1.4 Fixed	F1.2 - 360
Angle of View	Wide 44.57° x 33.49° Tele 4.69° x 3.53°	88.58° x 66.60° 27.95° x 21.0°	187°	83.2° x 61° 34.3° x 25.7°
M.O.D.	0.3m	0.3m	0.1m	0.3m
Back Focal Length	9.64mm	9.67 - 18.95mm	8.43mm	7.42mm
Dimensions (W x H x L)	ø39.0 x 46.1 x 78.1mm	ø38 x 45.6 x 57.8mm	ø42.0x53.22mm	ø31 x 45 x 55.6mm
Weight	139g	73g	115g	80g
Operating Temperature Range	-10 ~ +50 °C	-5 ~ +50 °C	-5 ~ +50 °C	-20 ~ +50 °C
Operating	Iris	DC Auto Iris	-	DC Auto Iris
	Focus	Manual	-	Manual
	Zoom	Manual	-	Manual
Note	IR (Day/Night), Megapixel	3Megapixel	Fisheye, IR (Day/Night), 3Megapixel	IR (Day/Night)

UNIT : mm

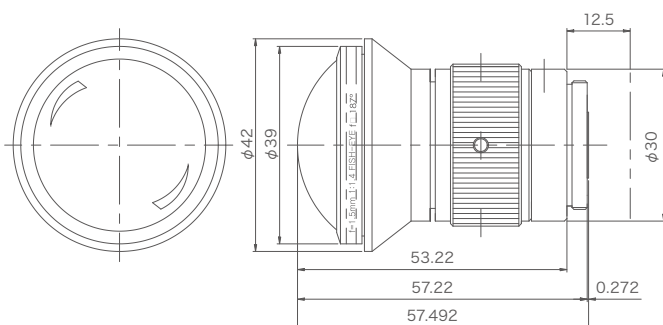
TVR0616HDDC-IR



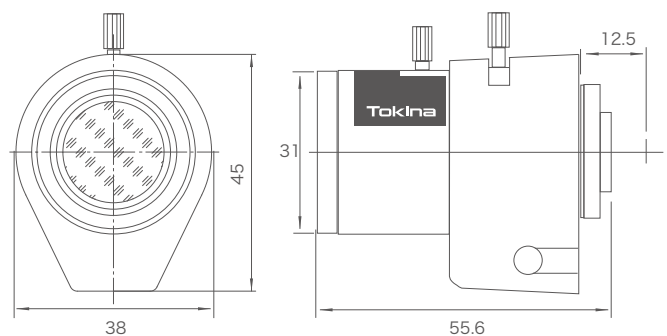
TVR0314HDDC



TC1514HD-IR



TVR3512DC-IR



High Resolution Vari-Focal Lens

TVR0514DC-IR TVR2713DC-IR TVR0398DC-IR TVR0616DC



SD RoHS

As SD RoHS

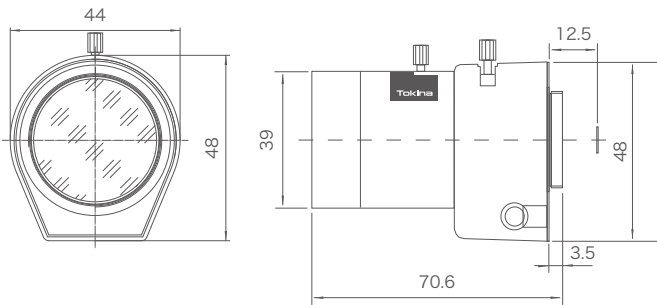
As SD RoHS

RoHS

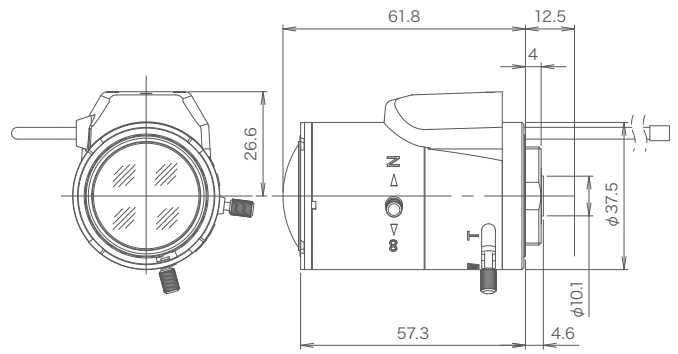
Model Name	TVR0514DC-IR	TVR2713DC-IR	TVR0398DC-IR	TVR0616DC
Image Format	1/3"	1/3"	1/3"	1/3"
Mount	CS	CS	CS	CS
Focal Length	5-50mm	2.7-12mm	3-8.2mm	6-60mm
Aperture Range	F1.4 - 360	F1.3 - 360	F0.98 - 360	F1.6 - 360
Angle of View	Wide	98.66° x 74.11°	89.22° x 66.8°	43.62° x 32.73°
(Horizontal x Vertical)	Tele	23.56° x 17.69°	34.47° x 25.85°	4.73° x 3.55°
M.O.D.	0.5m	0.2m	0.3m	0.1m
Back Focal Length	9.8mm	8.08mm	7.80-15.63mm	12.65-16.09mm
Dimensions (W x H x L)	ø39 x 48 x 70.6mm	ø37.5 x 45.4 x 61.8mm	ø37.5 x 45.4 x 52.2mm	ø37.5 x 45.4 x 74.0mm
Weight	160g	90g	80g	110g
Operating Temperature Range	-10 ~ +50 °C	-10 ~ +45 °C	-10 ~ +50 °C	-10 ~ +50 °C
Operating	Iris	DC Auto Iris	DC Auto Iris	DC Auto Iris
	Focus	Manual	Manual	Manual
	Zoom	Manual	Manual	Manual
Note	IR (Day/Night)	IR (Day/Night)	IR (Day/Night)	-

UNIT : mm

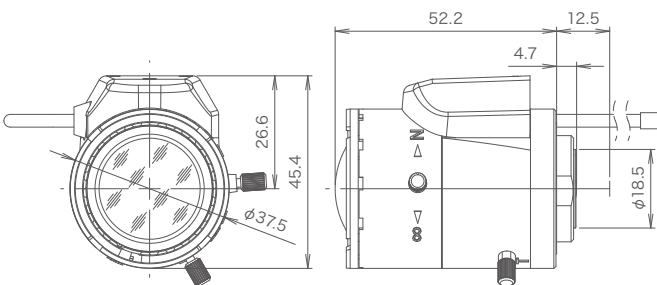
TVR0514DC-IR



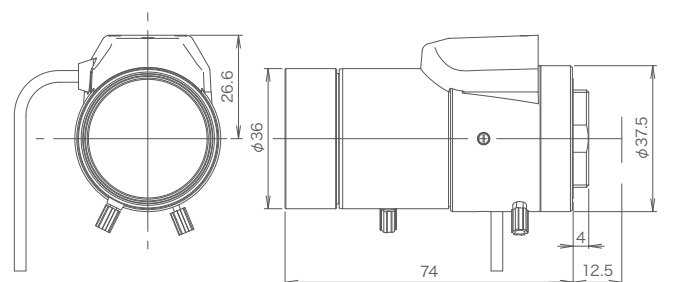
TVR2713DC-IR



TVR0398DC-IR



TVR0616DC



Motorized Zoom Lens

TM22Z1022 Series

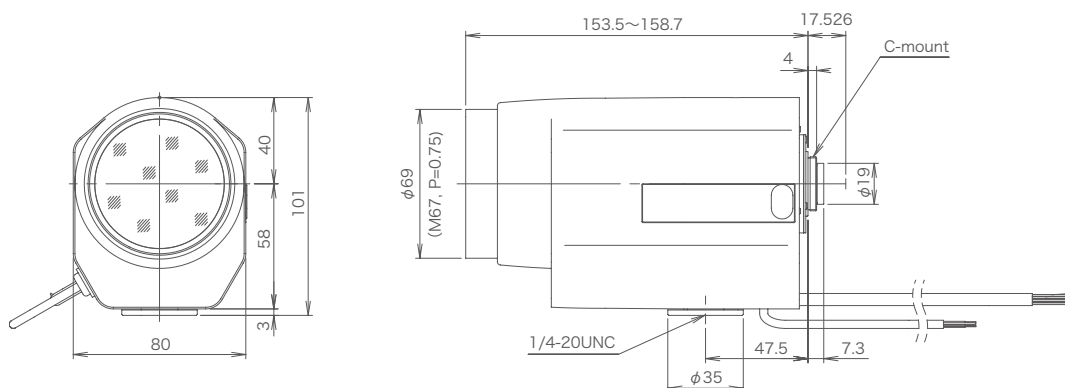
1/2" 22X

RoHS



Model Name	TM22Z1022N	TM22Z1022NPN	TM22Z1022AI	TM22Z1022AIPN	TM22Z1022GAI	TM22Z1022GAIPN	TM22Z1022GAIDC	TM22Z1022GAIDCPN	
Image Format	1/2"								
Mount	C								
Focal Length	10 - 220mm								
Aperture Range	F2.2 - C				F2.2 - 360				
Zoom	x22								
M.O.D.	1.8m								
Angle of View H x V	1/2"	Wide	34.14° x 25.90°						
		Tele	1.74° x 1.31°						
	1/3"	Wide	25.90° x 19.53°						
		Tele	1.31° x 0.99°						
Operating	Iris	Motorized	Motorized	Video Auto Iris	Video Auto Iris	Video Auto Iris	Video Auto Iris	DC Auto Iris	DC Auto Iris
	Focus	Motorized	Motorized W/preset	Motorized	Motorized W/preset	Motorized	Motorized W/preset	Motorized	Motorized W/preset
	Zoom	Motorized	Motorized W/preset	Motorized	Motorized W/preset	Motorized	Motorized W/preset	Motorized	Motorized W/preset
Iris	Input voltage	DC6V-12V			DC8V-16V				
	Current consumption	30mA or Less			30mA or Less		35mA or Less		
	Input signal	-			VS or V Signal		VS or V Signal		
	Accuracy	-			± 15% at Video Signal Level		± 15% at Video Signal Level		
	Sensitivity	-			0.5 ~ 1.0Vp-p		0.5 ~ 1.0Vp-p		
	Response speed	Approx. 4.5 sec.			-				
Iris (DC Auto)	Drive coil	-						190 Ω ± 10% (20°C)	
	Damp coil	-						Close to Open: 4.0V (20°C) Open to Close: 0.5V (20°C)	
Focus	Input voltage	DC6V-12V							
	Current consumption	60mA or Less							
	Controlled speed	Approx. 6 sec.							
Zoom	Input voltage	DC6V-12V							
	Current consumption	60mA or Less							
	Controlled speed	Approx. 6 sec.							
Filter size	M67mm P=0.75								
Back Focal Length	11.0mm								
Operating Temperature Range	-10°C ~ +50°C								
Dimensions(W x H x L)	80.0 x 101.0 x 158.7mm								
Weight	1050g								
Note	Type NPN-3 available								

UNIT : mm



Motorized Zoom Lens

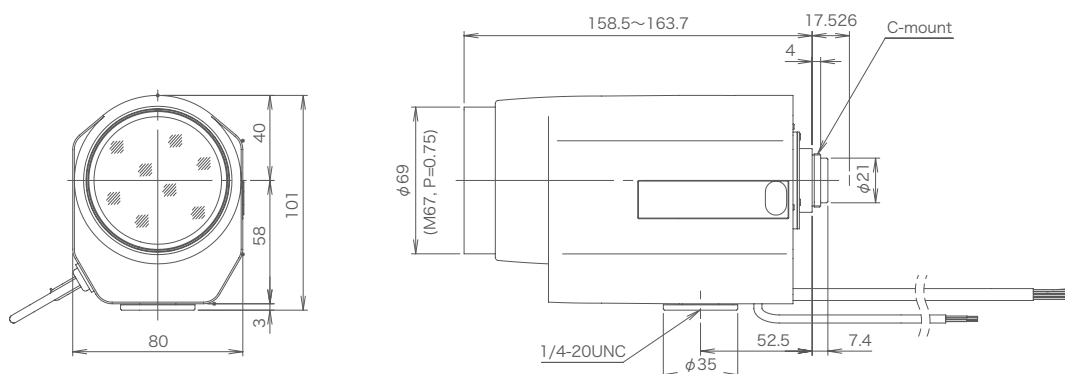
TM22Z1328 Series

1/2" 22X

RoHS



Model Name	TM22Z1328N	TM22Z1328NPN	TM22Z1328AI	TM22Z1328AIPN	TM22Z1328GAI	TM22Z1328GAIPN	TM22Z1328GAIDC	TM22Z1328GAIDCPN	
Image Format	1/2"								
Mount	C								
Focal Length	13 - 280mm								
Aperture Range	F2.8 - C				F2.8 - 360				
Zoom	x22								
M.O.D.	1.8m								
Angle of View H x V	1/2"	Wide	26.76° x 20.23°						
		Tele	1.37° x 1.02°						
	1/3"	Wide	20.23° x 15.24°						
		Tele	1.02° x 0.77°						
Operating	Iris	Motorized	Motorized	Video Auto Iris	Video Auto Iris	Video Auto Iris	Video Auto Iris	DC Auto Iris	DC Auto Iris
	Focus	Motorized	Motorized W/preset	Motorized	Motorized W/preset	Motorized	Motorized W/preset	Motorized	Motorized W/preset
	Zoom	Motorized	Motorized W/preset	Motorized	Motorized W/preset	Motorized	Motorized W/preset	Motorized	Motorized W/preset
Iris	Input voltage	DC6V-12V			DC8V-16V				
	Current consumption	30mA or Less			30mA or Less		35mA or Less		
	Input signal	-			VS or V Signal		VS or V Signal		
	Accuracy	-			± 15% at Video Signal Level		± 15% at Video Signal Level		
	Sensitivity	-			0.5 ~ 1.0Vp-p		0.5 ~ 1.0Vp-p		
	Response speed	Approx. 4.5 sec.			-				
Iris (DC Auto)	Drive coil	-						190 Ω ± 10% (20°C)	
	Damp coil	-						Close to Open: 4.0V (20°C) Open to Close: 0.5V (20°C)	
Focus	Input voltage	DC6V-12V							
	Current consumption	60mA or Less							
	Controlled speed	Approx. 6 sec.							
Zoom	Input voltage	DC6V-12V							
	Current consumption	60mA or Less							
	Controlled speed	Approx. 6 sec.							
Filter size	M67mm P=0.75								
Back Focal Length	11.0mm								
Operating Temperature Range	-10°C ~ +50°C								
Dimensions(W x H x L)	80.0 x 101.0 x 168.7mm								
Weight	1050g								
Note	Type NPN-3 available								



UNIT : mm

Long Focal Length Motorized Zoom Lens

TM33Z1015 Series

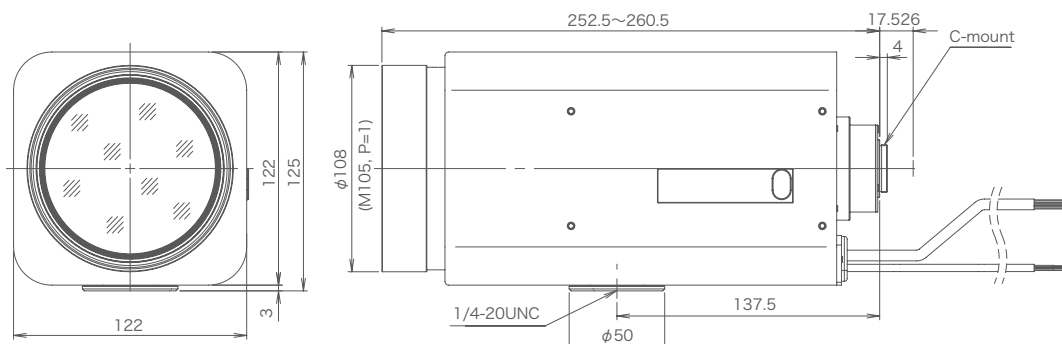
1/2" 33X

RoHS



Model Name		TM33Z1015N	TM33Z1015NPN	TM33Z1015AI	TM33Z1015AIPN
Image Format					1/2"
Mount		C			
Focal Length				10 - 330mm	
Aperture Range		F1.5 - C		F1.5 - 560	
Zoom		x33			
M.O.D.		2.9m			
Angle of View H x V	1/2"	Wide	34.99° x 26.44°		
		Tele	1.13° x 0.85°		
	1/3"	Wide	26.44° x 19.91°		
		Tele	0.85° x 0.64°		
Operating	Iris	Motorized	Motorized	Video Auto Iris	Video Auto Iris
	Focus	Motorized	Motorized W/preset	Motorized	Motorized W/preset
	Zoom	Motorized	Motorized W/preset	Motorized	Motorized W/preset
Iris	Input voltage	DC8V		DC8V-16V	
	Current consumption	20mA or Less		30mA or Less	
	Input signal	-		VS or V Signal	
	Accuracy	-		± 15% at Video Signal Level	
	Sensitivity	-		0.5 ~ 1.0Vp-p	
	Response speed	Approx. 7 sec.		-	
Focus	Input voltage	DC8V			
	Current consumption	60mA or Less			
	Controlled speed	Approx. 9.5 sec.			
Zoom	Input voltage	DC8V			
	Current consumption	80mA or Less			
	Controlled speed	Approx. 5 sec.			
Filter size		M105mm P=1.0			
Back Focal Length		11.0mm			
Operating Temperature Range		-10°C ~ +50°C			
Dimensions(W x H x L)		122.0 x 125.0 x 260.5mm			
Weight		2900g			
Note		Type NPN-3 available			

UNIT : mm



Long Focal Length Motorized Zoom Lens

TM33Z1540 Series

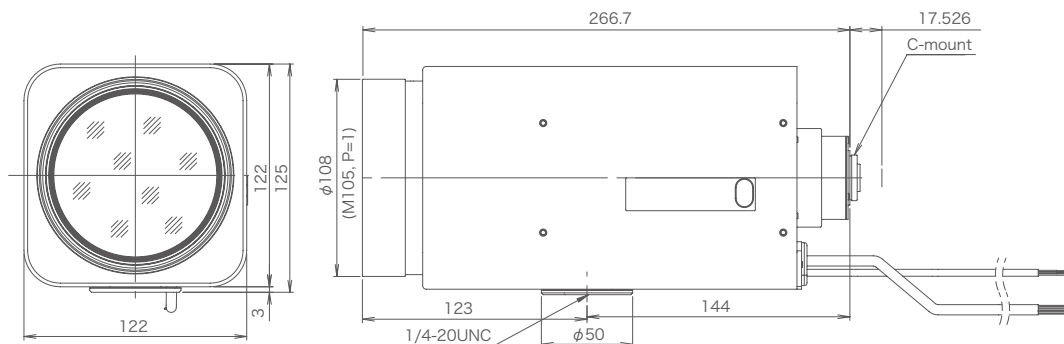
1/2" 33X

RoHS



Model Name		TM33Z1540NPN	TM33Z1540AI	TM33Z1540AIPN	TM33Z1540GAIDCPN
Image Format					1/2"
Mount		C			
Focal Length		15-500mm			
Aperture Range		F4.0 - C		F4.0 - 560	
Zoom		x33			
M.O.D.		2.9m			
Angle of View H x V	1/2"	Wide	23.19° x 17.49°		
		Tele	0.75° x 0.56°		
	1/3"	Wide	17.49° x 13.16°		
		Tele	0.56° x 0.42°		
Operating	Iris	Motorized	Video Auto Iris	Video Auto Iris	DC Auto Iris
	Focus	Motorized W/preset	Motorized	Motorized W/preset	Motorized W/preset
	Zoom	Motorized W/preset	Motorized	Motorized W/preset	Motorized W/preset
Iris	Input voltage	DC8V		DC8V-16V	
	Current consumption	20mA or Less		30mA or Less	
	Input signal	-		VS or V Signal	
	Accuracy	-		± 15% at Video Signal Level	
	Sensitivity	-		0.5 ~ 1.0Vp-p	
	Response speed	Approx. 7 sec.		-	
Iris (DC Auto)	Drive coil	-			190 Ω ± 10% (20°C) Close to Open: 4.0V (20°C) Open to Close: 0.5V (20°C)
	Damp coil	-			500 Ω ± 10% (20°C)
Focus	Input voltage	DC8V			
	Current consumption	60mA or Less			
	Controlled speed	Approx. 9.5 sec.			
Zoom	Input voltage	DC8V			
	Current consumption	80mA or Less			
	Controlled speed	Approx. 5 sec.			
Filter size		M105mm P=1.0			
Back Focal Length		11.0mm			
Operating Temperature Range		-10°C ~ +50°C			
Dimensions(W x H x L)		122.0 x 125.0 x 267.0mm			
Weight		2900g			
Note		Type NPN-3 available			

UNIT : mm



Long Focal Length Motorized Zoom Lens

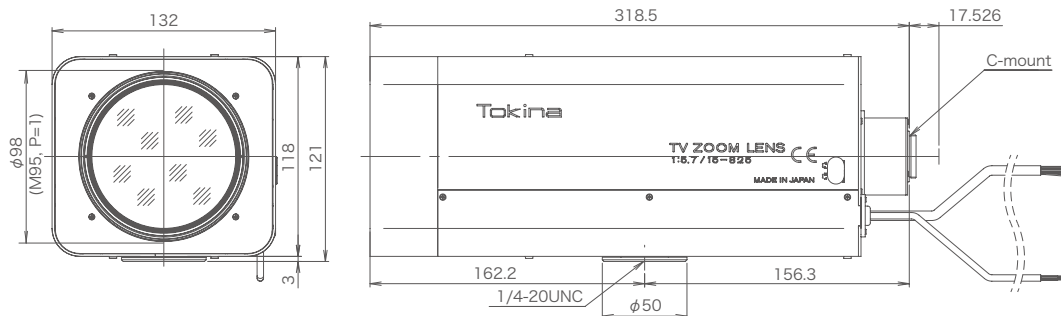
TM55Z1557 Series

1/2" 55X

SD RoHS



Model Name		TM55Z1557N	TM55Z1557AIPN
Image Format			1/2"
Mount			C
Focal Length		15-825mm	
Aperture Range		F5.7 - 560	
Zoom		x55	
M.O.D.		5.0m	
Angle of View H x V	1/2"	Wide	23.48° x 17.67°
		Tele	0.45° x 0.34°
	1/3"	Wide	17.67° x 13.30°
		Tele	0.34° x 0.26°
Operating	Iris	Motorized	Video Auto Iris
	Focus	Motorized	Motorized W/preset
	Zoom	Motorized	Motorized W/preset
Iris	Input voltage	DC6V-12V	DC8V-16V
	Current consumption	30mA or Less	30mA or Less
	Input signal	-	VS or V Signal
	Accuracy	-	± 15% at Video Signal Level
	Sensitivity	-	0.5 ~ 1.0Vp-p
	Response speed	Approx. 3.0 sec. (12V)	-
Focus	Input voltage	DC6V-12V	
	Current consumption	40mA or Less	
	Controlled speed	Approx. 6 sec. (12V)	
Zoom	Input voltage	DC6V-12V	
	Current consumption	50mA or Less	
	Controlled speed	Approx. 4 sec. (12V)	
Filter size		M95mm P=1.0	
Back Focal Length		59.814mm	
Operating Temperature Range		-10°C ~ +50°C	
Dimensions(W x H x L)		132.0 x 120.5 x 318.5mm	
Weight		4070g	
Note		Type NPN-3 available	



UNIT: mm

Long Focal Length Motorized Zoom Lens

TM55Z1038x2 Series

1/2" 55X

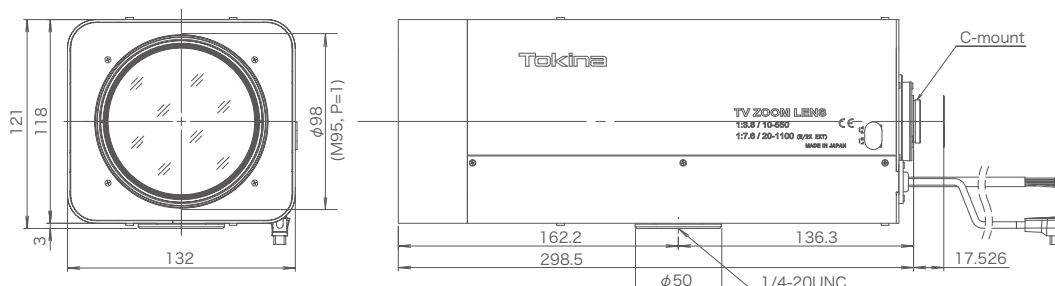
with 2x Extender

SP... RoHS



Model Name	TM55Z1038NPN3x2	TM55Z1038A1x2	TM55Z1038A1PNx2	TM55Z1038GAIDCPNx2
Image Format				1/2"
Mount	C			
Focal Length [()=2X EXT]	10 - 550mm (20 - 1100mm)			
Aperture Range [()=2X EXT]	F3.8 - 360 (F7.6 - 720)			
Zoom	x110			
M.O.D.	2.9m			
Angle of View H x V [()=2X EXT]	1/2"	Wide	34.57° x 26.33° (17.67° x 13.30°)	
		Tele	0.69° x 0.52° (0.34° x 0.26°)	
	1/3"	Wide	26.33° x 19.83° (13.30° x 9.99°)	
		Tele	0.52° x 0.39° (0.26° x 0.19°)	
Operating	Iris	Motorized W/preset	Video Auto Iris	Video Auto Iris
	Focus	Motorized W/preset	Motorized	Motorized W/preset
	Zoom	Motorized W/preset	Motorized	Motorized W/preset
Iris	Input voltage	DC6V-12V	DC8V-16V	
	Current consumption	30mA or Less	30mA or Less	
	Input signal	-	VS or V Signal	
	Accuracy	-	± 15% at Video Signal Level	
	Sensitivity	-	0.5 ~ 1.0Vp-p	
	Response speed	Approx. 3.0 sec. (12V)	-	
Iris (DC Auto)	Drive coil	-	190 Ω ± 10% (20°C) Close to Open: 4.0V (20°C) Open to Close: 0.5V (20°C)	
	Damp coil	-	700 Ω ± 10% (20°C)	
Focus	Input voltage	DC6V-12V		
	Current consumption	40mA or Less		
	Controlled speed	Approx. 6~13 sec.		
Zoom	Input voltage	DC6V-12V		
	Current consumption	50mA or Less		
	Controlled speed	Approx. 4~8 sec.		
2x Extender	Input voltage	DC6V-12V		
	Current consumption	40mA or Less		
	Controlled speed	Approx. 2~3 sec.		
Filter size	M95mm P=1.0			
Back Focal Length	47.37mm			
Operating Temperature Range	-10°C ~ +50°C			
Dimensions(W x H x L)	132.0 x 120.5 x 298.5mm			
Weight	4070g			
Note	x2 Extender			

UNIT : mm



Megapixel Long Focal Length Motorized Zoom Lens

TM33Z1015HDGAIDCPN-MP

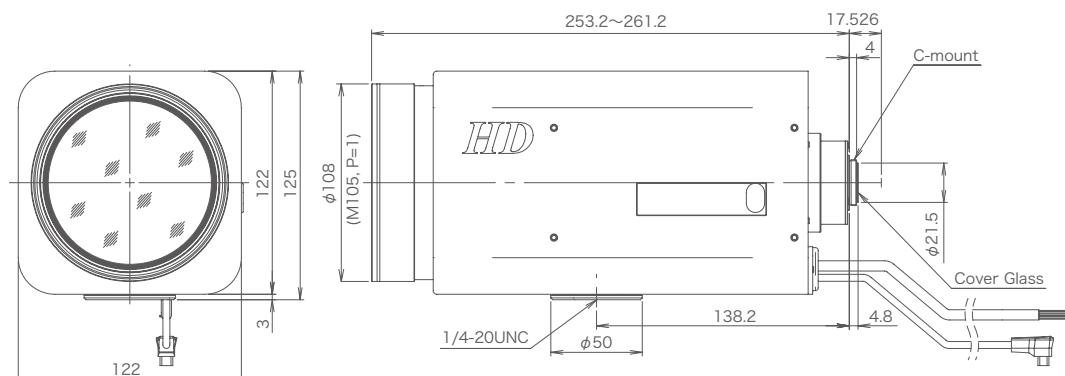
1/2" 33X MP

SD RoHS



Model Name		TM33Z1015HDGAIDCPN-MP	
Image Format		1/2"	
Mount		C	
Focal Length		10 - 330mm	
Aperture Range		F1.5 - 560	
Zoom		x33	
M.O.D.		2.9m	
Angle of View H x V	1/2"	Wide	34.99° x 26.44°
		Tele	1.13° x 0.85°
	1/3"	Wide	26.44° x 19.91°
		Tele	0.85° x 0.64°
Operating	Iris	DC Auto Iris	
	Focus	Motorized W/preset	
	Zoom	Motorized W/preset	
Iris (DC Auto)	Drive coil	190 Ω ± 10% (20°C)	
		Close to Open: 4.0V (20°C) Open to Close: 0.5V (20°C)	
	Damp coil	500 Ω ± 10% (20°C)	
Focus	Input voltage	DC8V	
	Current consumption	60mA or Less	
	Controlled speed	Approx. 9.5 sec.	
Zoom	Input voltage	DC8V	
	Current consumption	80mA or Less	
	Controlled speed	Approx. 5 sec.	
Filter size		M105mm P=1.0	
Back Focal Length		11.0mm	
Operating Temperature Range		-10°C ~ +50°C	
Dimensions(W x H x L)		122.0 x 125.0 x 260.5mm	
Weight		2900g	
Note		Megapixel	

UNIT : mm



IR Corrected Megapixel Motorized Zoom Lens

TM20Z1225HD Series

1/2" 20X 2MP IR

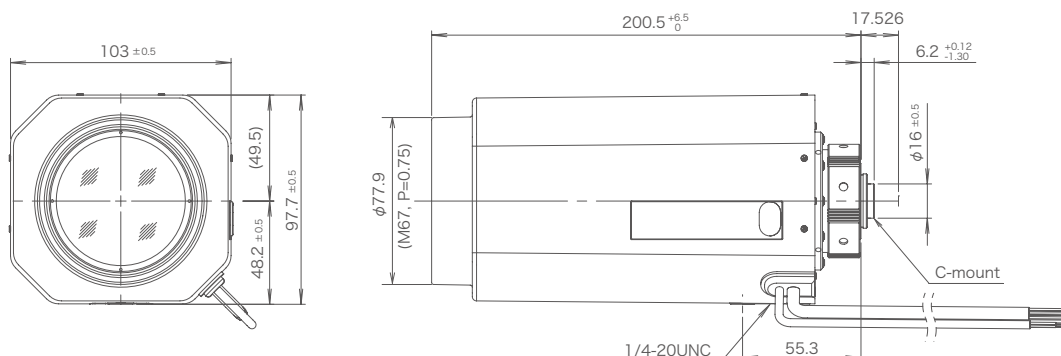
SD RoHS

NEW

2MP/IR



Model Name		TM20Z1225HDGAI PN-IR	TM20Z1225HDGAI DCPN-IR
Image Format			1/2"
Mount			C
Focal Length		12-240mm	
Aperture Range		F2.5 - 540 - C	
Zoom		x20	
M.O.D.		2.0m	
Angle of View H x V	1/2"	Wide	29.16° x 22.07°
		Tele	1.56° x 1.17°
	1/3"	Wide	22.62° x 17.06°
		Tele	1.15° x 0.86°
Operating	Iris	Video Auto Iris	DC Auto Iris
	Focus	Motorized W/preset	Motorized W/preset
	Zoom	Motorized W/preset	Motorized W/preset
Iris	Input voltage	DC6V-12V	
	Current consumption	50mA or Less	
	Input signal	VS or V Signal	
	Accuracy	± 5% at Video Signal Level	
	Sensitivity	0.5 ~ 1.0Vp-p	
	Response speed	Approx. 5 sec.	
Iris (DC Auto)	Drive coil	-	190 Ω ± 10% (20°C) Close to Open: 4.0V (20°C) Open to Close: 0.5V (20°C)
	Damp coil	-	1150 Ω ± 10% (20°C)
Focus	Input voltage	DC6V-12V	
	Current consumption	50mA or Less	
	Controlled speed	Approx. 6 sec. (6V)	
Zoom	Input voltage	DC6V-12V	
	Current consumption	50mA or Less	
	Controlled speed	Approx. 7 sec. (6V)	
Filter size		M67mm P=0.75	
Back Focal Length		13.029mm	
Operating Temperature Range		-10°C ~ +50°C	
Dimensions(W x H x L)		103.0 x 97.5 x 200.5mm	
Weight		1600g	
Note		IR (Day/Night), 2Megapixel	




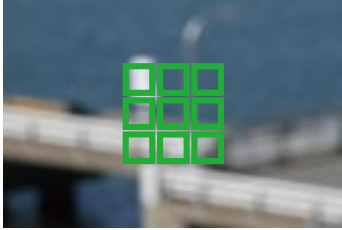




UNIT : mm

Intelligent Auto Focus Motorized Zoom Lens


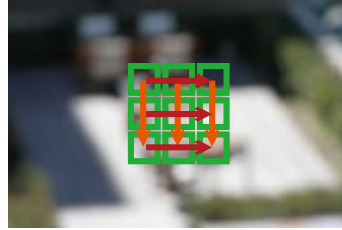




Available 22x, 33x and 55x with 2x Extender

● Intelligent Auto Focus (iAF)'s special feature




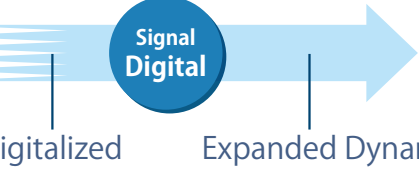
1 Range Finding in 9 Divided Area

Typical	iAF
	
AF detection on only a center range-finding area	Accurate AF detection by dividing the center range-finding area in 9 areas
	
	
It takes time to autofocus and typical autofocusing has a limitation in accuracy.	iAF realizes high speed and highly accurate auto focusing.

2 AF Detection by Matrix

Typical	iAF
	
AF detection on only vertical direction	Accurate AF detection on horizontal and vertical matrix direction
	
	
It takes time to autofocus and typical autofocusing has a limitation in accuracy.	iAF realizes high speed and highly accurate auto focusing.

3 Digital Processing

Typical	Normal speed AF detection with analog signal = Analog Processing	
		AF detection
iAF	High speed AF detection with digitalized signal = Digital Processing	
		AF detection
	This provides you high speed and highly accurate auto focusing.	

< Precaution >

- iAF lenses can be used with IP cameras which have video output.
- Auto focus accuracy might be different according to using cameras.
- AF may not focus properly under conditions in below:
 - Low contrast object
 - Several same levels of contrast rate points in an object
 - When camera operates in accumulate mode

Intelligent Auto Focus Motorized Zoom Lens

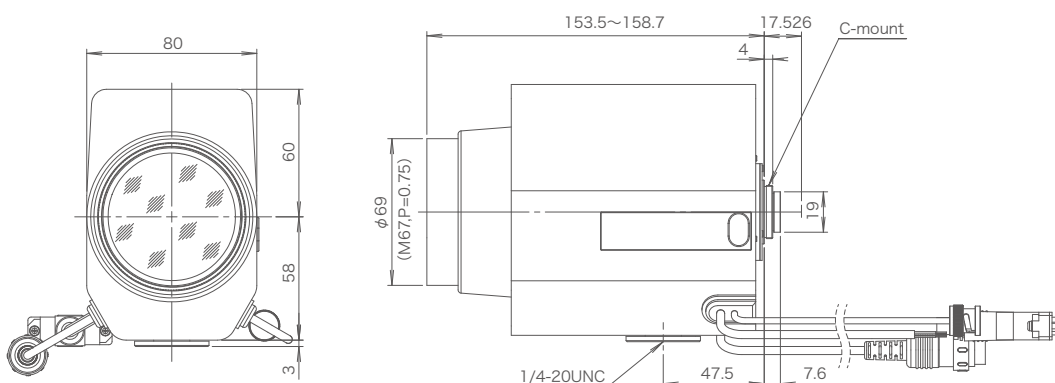
TM22Z1022-iAF Series

1/2" 22X

RoHS



Model Name		TM22Z1022GAIPN-iAF(CONT)	TM22Z1022GAIPN-iAF(232C)	TM22Z1022GAIDCPN-iAF(CONT)	TM22Z1022GAIDCPN-iAF(232C)
Image Format					1/2"
Mount					C
Focal Length					10 - 220mm
Aperture Range					F2.2 - 360
Zoom					x22
M.O.D.					1.8m
Angle of View H x V	1/2"	Wide	34.14° x 25.90°		
		Tele	1.74° x 1.31°		
	1/3"	Wide	25.90° x 19.53°		
		Tele	1.31° x 0.99°		
Operating	Iris	Video Auto Iris		DC Auto Iris	
	Focus	Motorized W/preset		Motorized W/preset	
	Zoom	Motorized W/preset		Motorized W/preset	
Iris	Input voltage	DC8V-16V			
	Current consumption	35mA or Less			
	Input signal	VS or V Signal			
	Accuracy	± 15% at Video Signal Level			
	Sensitivity	0.5 ~ 1.0Vp-p			
Iris (DC Auto)	Drive coil	-		190 Ω ± 10% (20°C) Close to Open: 4.0V (20°C) Open to Close: 0.5V (20°C)	
	Damp coil	-		1150 Ω ± 10% (20°C)	
Focus	Input voltage	DC6V-12V			
	Current consumption	60mA or Less			
	Controlled speed	Approx. 6 sec.			
	Potentiometer	5K Ω 1W (5V is supplied from the lens)			
Zoom	Input voltage	DC6V-12V			
	Current consumption	60mA or Less			
	Controlled speed	Approx. 6 sec.			
	Potentiometer	5K Ω 1W (5V is supplied from the lens)			
Auto Focus	Input voltage	DC 12 ± 0.5V			
	Input signal	VBS OR CVBS SIGNAL (NTSC or PAL)			
	Current consumption	300mA or Less (Standby), 140mA or Less (Zoom or Focus on)			
Control	Controller	RS-232C	Controller	RS-232C	
Filter size			M67mm P=0.75		
Back Focal Length			11.0mm		
Operating Temperature Range			-5°C ~ +45°C		
Dimensions(W x H x L)			80.0 x 121.0 x 158.7mm		
Weight			1250g		



UNIT : mm

Intelligent Auto Focus Motorized Zoom Lens

TM33Z1015HDGAIDCPN-MP-IAF

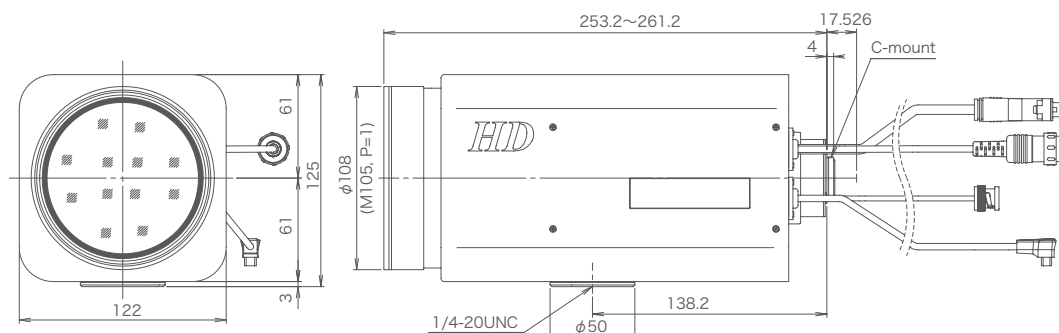
1/2" 33X MP

SD RoHS



Model Name		TM33Z1015HDGAIDCPN-MP-IAF(CONT)	TM33Z1015HDGAIDCPN-MP-IAF(232C)
Image Format			1/2"
Mount			C
Focal Length			10 - 330mm
Aperture Range			F1.5 - 360
Zoom			x33
M.O.D.			2.9m
Angle of View H x V	1/2"	Wide	34.99° x 26.44°
		Tele	1.13° x 0.85°
	1/3"	Wide	26.44° x 19.91°
		Tele	0.85° x 0.64°
Operating	Iris		DC Auto Iris
	Focus		Motorized W/preset
	Zoom		Motorized W/preset
Iris (DC Auto)	Drive coil		190 Ω ± 10% (20°C) Close to Open: 4.0V (20°C) Open to Close: 0.5V (20°C)
	Damp coil		500 Ω ± 10% (20°C)
Focus	Input voltage		DC8V
	Current consumption		60mA or Less
	Controlled speed		Approx. 9.5 sec.
	Potentiometer		5K Ω 1W (5V is supplied from the lens)
Zoom	Input voltage		DC8V
	Current consumption		80mA or Less
	Controlled speed		Approx. 5 sec.
	Potentiometer		5K Ω 1W (5V is supplied from the lens)
Auto Focus	Input voltage		DC 12 ± 0.5V
	Input signal		VBS OR CVBS SIGNAL (NTSC or PAL)
	Current consumption		300mA or Less (Standby), 140mA or Less (Zoom or Focus on)
Control		Controller	RS-232C
Filter size			M105mm P=1.0
Back Focal Length			11.0mm
Operating Temperature Range			-5°C ~ +45°C
Dimensions(W x H x L)			122.0 x 125.0 x 260.5mm
Weight			3000g
Note			Megapixel

UNIT : mm



Intelligent Auto Focus Motorized Zoom Lens

TM55Z1038x2-iAF Series

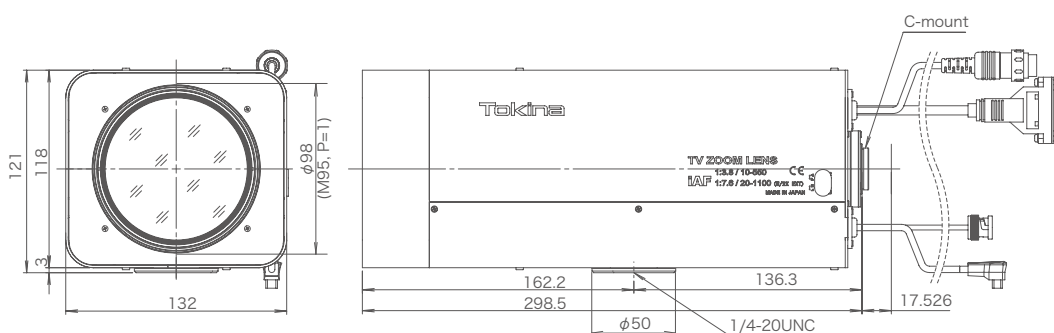
1/2" 55X

with 2x Extender

SP... RoHS



Model Name	TM55Z1038GAIPNx2-IAF(CONT)	TM55Z1038GAIPNx2-IAF(232C)	TM55Z1038GAIDCPNx2-IAF(CONT)	TM55Z1038GAIDCPNx2-IAF(232C)
Image Format				1/2"
Mount				C
Focal Length [()=2X EXT]				10 - 550mm (20-1100mm)
Aperture Range [()=2X EXT]				F3.8 - 360 (F7.6-720)
Zoom				x55
M.O.D.				5.0m
Angle of View H x V [()=2X EXT]	1/2"	Wide	34.57° x 26.33° (17.67° x 13.30°)	
		Tele	0.69° x 0.52° (0.34° x 0.26°)	
	1/3"	Wide	26.33° x 19.83° (13.30° x 9.99°)	
		Tele	0.52° x 0.39° (0.26° x 0.19°)	
Operating	Iris	Video Auto Iris		DC Auto Iris
	Focus	Motorized W/preset		Motorized W/preset
	Zoom	Motorized W/preset		Motorized W/preset
Iris	Input voltage	DC8V-16V		
	Current consumption	35mA or Less		
	Input signal	VS or V Signal		
	Accuracy	± 15% at Video Signal Level		
	Sensitivity	0.5 ~ 1.0Vp-p		
Iris (DC Auto)	Drive coil	-		190 Ω ± 10% (20°C) Close to Open: 4.0V (20°C) Open to Close: 0.5V (20°C)
	Damp coil	-		700 Ω ± 10% (20°C)
Focus	Input voltage	DC6V-12V		
	Current consumption	40mA or Less		
	Controlled speed	Approx. 6~13 sec.		
	Potentiometer	5K Ω 1W (5V is supplied from the lens)		
Zoom	Input voltage	DC6V-12V		
	Current consumption	50mA or Less		
	Controlled speed	Approx. 4~8 sec.		
	Potentiometer	5K Ω 1W (5V is supplied from the lens)		
Auto Focus	Input voltage	DC 12 ± 0.5V		
	Input signal	VBS OR CVBS SIGNAL (NTSC or PAL)		
	Current consumption	300mA or Less (Standby), 140mA or Less (Zoom or Focus on)		
Control	Controller	RS-232C	Controller	RS-232C
Filter size				M95mm P=1.0
Back Focal Length				47.37mm
Operating Temperature Range				-5°C ~ +45°C
Dimensions(W x H x L)				132.0 x 120.5 x 298.5mm
Weight				4070g



UNIT : mm

IR Corrected Megapixel Motorized Zoom Lens

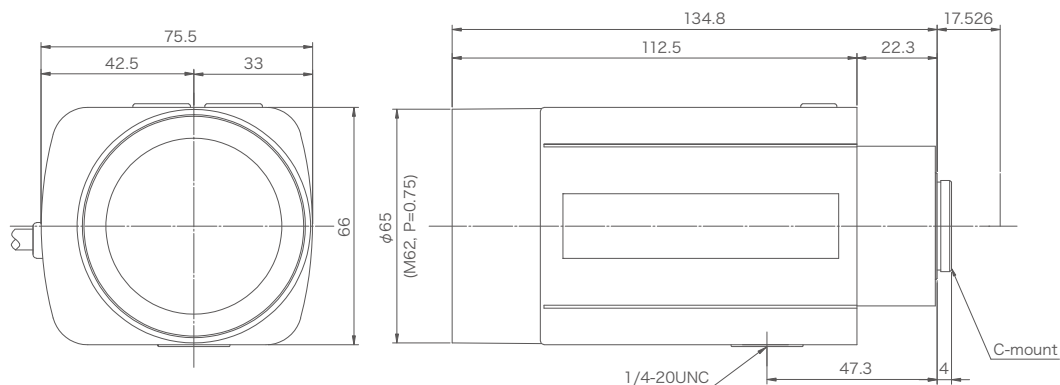
TM10Z8515HD-IR Series

1/2" 10X 2MP

SD RoHS



Model Name	TM10Z8515HDN-IR	TM10Z8515HDNPN-IR	TM10Z8515HDGAI-IR	TM10Z8515HDGAI-IR	TM10Z8515HDGAI-IR	TM10Z8515HDGAI-IR
Image Format	1/2"					
Mount	C					
Focal Length	8.5 - 85mm					
Aperture Range	F1.5 - 47		F1.5 - 6.2			
Zoom	x10					
M.O.D.	1.8m					
Angle of View H x V	1/2"	Wide	41.49° x 31.36°			
		Tele	4.33° x 3.27°			
	1/3"	Wide	31.36° x 23.49°			
		Tele	3.27° x 2.46°			
Operating	Iris	Motorized	Motorized	DC Auto Iris	DC Auto Iris	DC Auto Iris
	Focus	Motorized	Motorized W/preset	Motorized	Motorized W/preset	Auto/Motorized
	Zoom	Motorized	Motorized W/preset	Motorized	Motorized W/preset	Motorized
Iris	Input voltage	DC8V-12V				-
	Current consumption	40mA or Less				-
	Response speed	Approx. 3 sec.				-
Iris (DC Auto)	Drive coil	-				190 Ω ± 10% (20°C) Close to Open: 4.0V (20°C) Open to Close: 0.5V (20°C)
	Damp coil	-				1150 Ω ± 10% (20°C)
	Input voltage	DC8V-12V				DC8V-16V / DC ± 8V - ± 9V
Focus	Current consumption	80mA or Less				10mA or Less
	Controlled speed	Approx. 4-7 sec.				Approx. 2-7 sec.
	Input voltage	DC8V-12V				DC8V-16V / DC ± 8V - ± 9V
Zoom	Current consumption	80mA or Less				10mA or Less
	Controlled speed	Approx. 2.5-7 sec.				Approx. 2-7 sec.
	Input voltage	-				DC8V-16V
Auto Focus	Current consumption	-				50mA or Less (Standby), 200mA or Less (Zoom or Focus on)
	Filter size	M62mm P=0.75				
Back Focal Length	14.65mm					
Operating Temperature Range	-10°C ~ +40°C					
Dimensions(W x H x L)	66 x 75.5 x 134.8mm					
Weight	690g	700g	695g	705g	700g	710g
Note	Type NPN-3 available					



UNIT : mm

IR Corrected Megapixel Motorized Zoom Lens

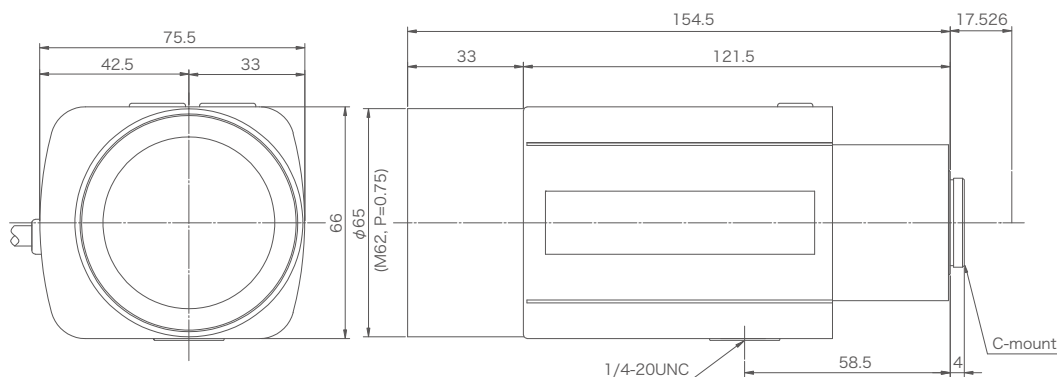
TM18Z8625HD-IR Series

1/2" 18X 2MP

SP RoHS



Model Name	TM18Z8625HDN-IR	TM18Z8625HDNPN-IR	TM18Z8625HDGADC-IR	TM18Z8625HDGADCNP-IR	TM18Z8625HDGADCAF-IR	TM18Z8625HDGADCNPAF-IR	
Image Format	1/2"						
Mount	C						
Focal Length	8.6 - 154.0mm						
Aperture Range	F2.5 - 62		F2.5 - 8.2				
Zoom	x18						
M.O.D.	2.0m						
Angle of View H x V	1/2"	Wide	40.57° x 30.76°				
		Tele	2.39° x 1.80°				
	1/3"	Wide	30.76° x 23.30°				
		Tele	1.80° x 1.35°				
Operating	Iris	Motorized	Motorized	DC Auto Iris	DC Auto Iris	DC Auto Iris	
	Focus	Motorized	Motorized W/preset	Motorized	Motorized W/preset	Auto/Motorized	
	Zoom	Motorized	Motorized W/preset	Motorized	Motorized W/preset	Motorized	
Iris	Input voltage	DC8V-12V					
	Current consumption	40mA or Less				-	
	Response speed	Approx. 3 sec.					
Iris (DC Auto)	Drive coil	-		190 Ω ± 10% (20°C) Close to Open: 4.0V (20°C) Open to Close: 0.5V (20°C)			
	Damp coil	-		1150 Ω ± 10% (20°C)			
	Input voltage	DC8V-12V			DC8V-16V / DC ± 8V - ± 9V		
Focus	Current consumption	80mA or Less			10mA or Less		
	Controlled speed	Approx. 4-7 sec.			Approx. 2-7 sec.		
	Input voltage	DC8V-12V			DC8V-16V / DC ± 8V - ± 9V		
Zoom	Current consumption	80mA or Less			10mA or Less		
	Controlled speed	Approx. 2.5-7 sec.			Approx. 2-7 sec.		
	Input voltage	-			DC8V-16V		
Auto Focus	Current consumption	-			50mA or Less (Standby), 200mA or Less (Zoom or Focus on)		
	Filter size	M62mm P=0.75					
Back Focal Length	14.2mm						
Operating Temperature Range	-10°C ~ +40°C						
Dimensions(W x H x L)	66 x 75.5 x 154.5mm						
Weight	760g	770g	785g	800g	790g	800g	
Note	Type NPN-3 available						



UNIT : mm

IR Corrected Megapixel Motorized Zoom Lens

TM33Z1530HD-IR Series

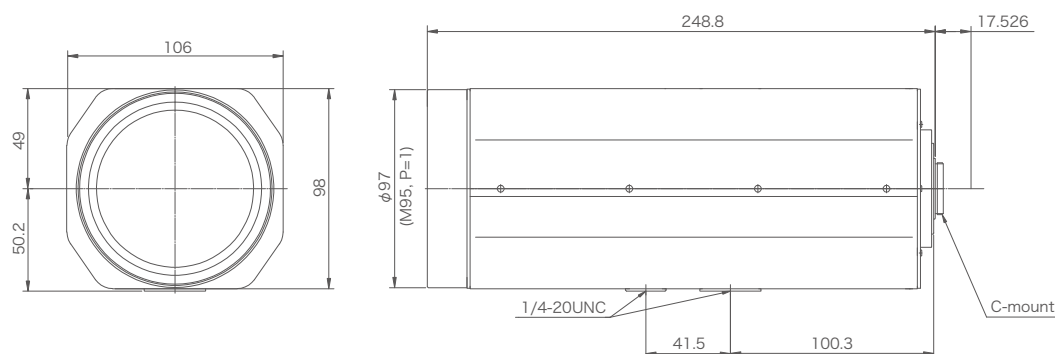
1/2" 33X 2MP

SD RoHS



Model Name	TM33Z1530HDN-IR	TM33Z1530HDNPN-IR	TM33Z1530HDGADC-IR	TM33Z1530HDGADCPCN-IR	TM33Z1530HDGADCAF-IR	TM33Z1530HDGADCPCNAF-IR
Image Format	1/2"					
Mount	C					
Focal Length	15.2 - 500.0mm					
Aperture Range	F3.0 - 32				F3.0 - 13	
Zoom	x33					
M.O.D.	4.0m			10.0m		
Angle of View H x V	1/2"	Wide	23.61° x 17.90°			
		Tele	0.74° x 0.56°			
	1/3"	Wide	17.90° x 13.51°			
		Tele	0.56° x 0.43°			
Operating	Iris	Motorized	Motorized	DC Auto Iris	DC Auto Iris	DC Auto Iris
	Focus	Motorized	Motorized W/preset	Motorized	Motorized W/preset	Auto/Motorized
	Zoom	Motorized	Motorized W/preset	Motorized	Motorized W/preset	Motorized
Iris	Input voltage	DC8V-12V				
	Current consumption	40mA or Less				
	Response speed	Approx. 3-5 sec.				
Iris (DC Auto)	Drive coil	-				190 Ω ± 10% (20°C) Close to Open: 4.0V (20°C) Open to Close: 0.5V (20°C)
	Damp coil	-				1150 Ω ± 10% (20°C)
	Input voltage	DC8V-12V				DC 8V-16V / DC ± 8V - ± 9V
Focus	Current consumption	100mA or Less				10mA or Less
	Controlled speed	Approx. 12-80 sec.				Approx. 12-80 sec.
	Input voltage	DC8V-12V				DC 8V-16V / DC ± 8V - ± 9V
Zoom	Current consumption	100mA or Less				10mA or Less
	Controlled speed	Approx. 6-45 sec.				Approx. 6-45 sec.
	Input voltage	-				DC8V-16V
Auto Focus	Current consumption	-				50mA or Less (Standby), 250mA or Less (Zoom or Focus on)
	Filter size	M95mm P=1.0				
Back Focal Length	41.48mm					
Dimensions(W x H x L)	100.2 x 107.2 x 248.8mm					
Weight	2100g	2200g	2200g	2300g	2400g	2500g
Note	Type NPN-3 available					

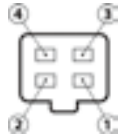
UNIT : mm



Technical Information

Motorized Zoom Lens: Cable Connection

For motorized zoom lens on page 18 to 25

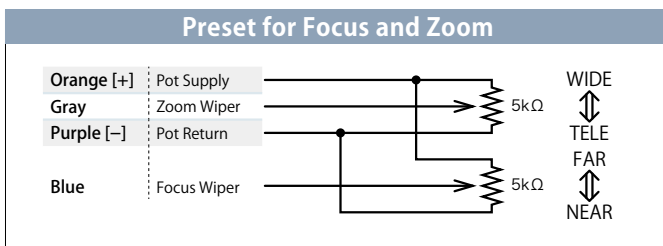
Iris				
<ul style="list-style-type: none"> ● Motorized iris 	<ul style="list-style-type: none"> ● Video auto iris 	<ul style="list-style-type: none"> ● Video auto iris (galvano) 	<ul style="list-style-type: none"> ● DC auto iris 	4-pin connector for DC auto iris 
<ul style="list-style-type: none"> ● N/NPN 	<ul style="list-style-type: none"> ● AI / AIPN 	<ul style="list-style-type: none"> ● GAI / GAIPN 	<ul style="list-style-type: none"> ● GAIDC / GAIDCPN 	
Brown [+] Close Yellow [-] Brown [-] Open Yellow [+]	Red DC8V ~ 16V Black GND White Video signal Green NC	Red DC8V ~ 16V Black GND White Video signal Green NC	Red Damping coil [-] ① Black Damping coil [+] ② Open White Drive coil [+] ③ Open Green Drive coil [-] ④	

Focus		
	FAR	NEAR
Black	[+]	[-]
Red	[-]	[+]

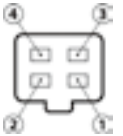
Focus (TM20Z1225HD)		
	NEAR	FAR
Black	[+]	[-]
Red	[-]	[+]

Zoom		
	WIDE	TELE
Green	[+]	[-]
White	[-]	[+]

x2 extender		
	IN	OUT
White/Red	[+]	[-]
Light Green	[-]	[+]

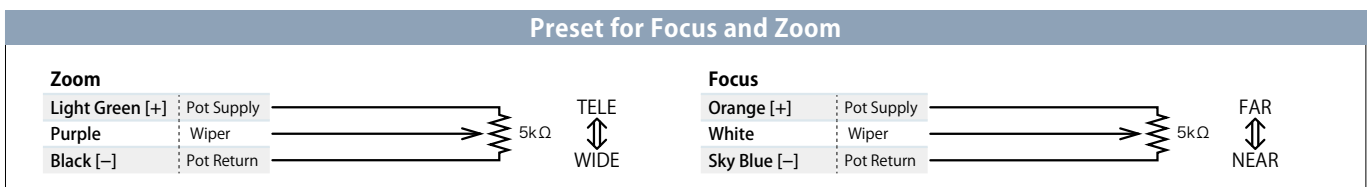


For motorized zoom lens on page 30 to 32

Iris		
<ul style="list-style-type: none"> ● Motorized iris 	<ul style="list-style-type: none"> ● DC auto iris 	4-pin connector for DC auto iris 
<ul style="list-style-type: none"> ● N/NPN 	<ul style="list-style-type: none"> ● GAIDC / GAIDCPN 	
Green [+] Open Brown [-] Green [-] Close Brown [+]	Black Damping coil [-] ① Red Damping coil [+] ② Open White Drive coil [+] ③ Open Green Drive coil [-] ④	

Focus		
	NEAR	FAR
Yellow	[+]	[-]
Blue	[-]	[+]

Zoom		
	WIDE	TELE
Red	[+]	[-]
Gray	[-]	[+]



Intelligent Auto Focus Motorized Zoom Lens: Cable Connection

Iris

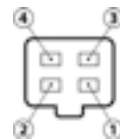
● Video auto iris (galvano)

GAIPN	
Red	DC8V ~ 16V ①
Black	GND ④
White	Video signal ③
Green	NC ②

● DC auto iris

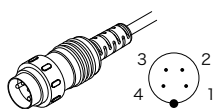
GAIDCPN	
Red	Damping coil [-] ①
Black	Damping coil [+] ② Open
White	Drive coil [+] ③ Open
Green	Drive coil [-] ④

4-pin connector for DC auto iris



AF Power Cable

Din 4pin (E4-760P-150)



Pin	COLOR	FUNCTION
1	Red	POWER DC12V 300mA (AF ON)
2	NC	-
3	Black	GND
4	NC	-

Video Cable

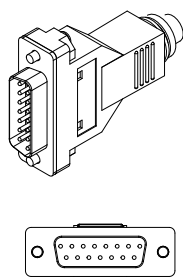


BNC Terminal

- Input Video signal from the camera.
- It is utilized for auto-focus calculation.

Controller Type

Control Cable



D-sub 15pin

TM22Z-iAF & TM33Z-iAF series

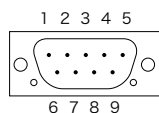
Pin	COLOR	SIGNAL
1	Black	FOCUS: +FAR
2	Red	FOCUS: +NEAR
3	White	ZOOM: +TELE
4	Green	ZOOM: +WIDE
5	Orange	NC
6	Blue	FOCUS: POT WIPER
7	Gray	ZOOM: POT WIPER
8	Sky Blue	NC
9	Brown	AF ON/OFF
10	White/Black	AF STATUS
11	White/Green	MANUAL IRIS CONTROL
12	White/Yellow	AI LEVEL REMOTE
13	White/Red	NC
14	Light Green	NC
15	Purple	GND

TM55Z-iAF series

Pin	COLOR	SIGNAL
1	Black	FOCUS: +FAR
2	Red	FOCUS: +NEAR
3	White	ZOOM: +TELE
4	Green	ZOOM: +WIDE
5	Orange	NC
6	Blue	FOCUS: POT WIPER
7	Gray	ZOOM: POT WIPER
8	Sky Blue	NC
9	Brown	AF ON/OFF
10	White/Black	AF STATUS
11	White/Green	MANUAL IRIS CONTROL
12	White/Yellow	AI LEVEL REMOTE
13	White/Red	EXTENDER: +ON(X2)
14	Light Green	EXTENDER: +OFF(X1)
15	Purple	GND

RS-232C Type

RS-232C Connector



D-sub 9pin #4-40

Pin	SIGNAL
2	RxD (Receiver) Lens ← External equipment
3	TxD (Sender) Lens → External equipment
5	GND
OTHERS	NC

Baud Rate: 9600bps
 Data Length: 8bit
 Stop Bit: 1bit
 Parity: Non
 Flow Control: Non

How to Adjust Flange Focal Length

- ① Please mount an ND filter on the front lens in order to opening iris maximally. (It makes the depth of field shallow.)
- ② Zoom to wide angle position and focus on infinitely for further object.
- ③ Focus on the object using flange focal distance adjustment of camera.
- ④ In case of defocusing at telephoto, focus on the object again.
- ⑤ Then, zoom to wide angle position and focus on the object again.
- ⑥ Repeat 4 and 5 until focusing correctly through the entire range.

If it does not work, please check the following points.

- A. Is the lens mount correct?
- B. Is any extension tube attached?
- C. Is the flange focal distance adjustment slipped?

Please contact us if you require support.

How to Adjust Iris

- ① Sensitivity (level adjustment)

A. In case of bright image → rotate anticlockwise

B. In case of dark image → rotate clockwise

* Don't keep turning the volume. Otherwise the volume might come off.

- ② Contrast (ALC adjustment)

A. In case of high contrast → rotate anticlockwise

B. In case of low contrast → rotate clockwise

* Don't keep turning the volume. Otherwise the volume might come off.

Technical Information

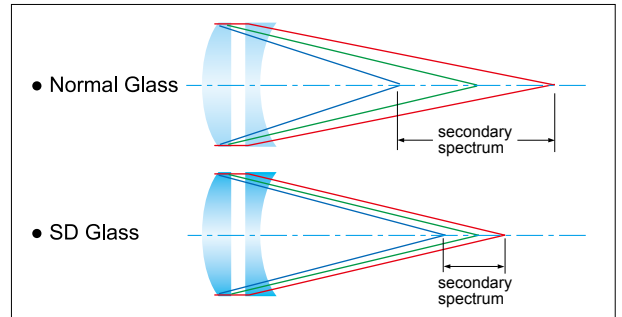
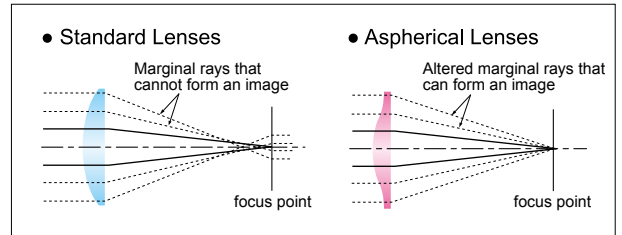
Feature

Aspherical Lens

Standard lenses are made from a combination of spherical lens elements. However, there can be problems with such lenses when light entering at the edges of the lens may not be perfectly focused at the same point as light entering at the center. That presents limits to performance in wide aperture and super wide-angle lenses. Tokina uses aspherical glass elements in many lenses. In addition to correcting spherical aberration, these lenses fully correct light quantity and image distortion and provide excellent results when used in combination with floating elements. Through technical cooperation with Hoya, Tokina has succeeded in producing high quality molded glass elements with a greater aspherical shape than any other lens so far. This technique is unparalleled in its technological sophistication and excellence.

SD (Super Low Dispersion)

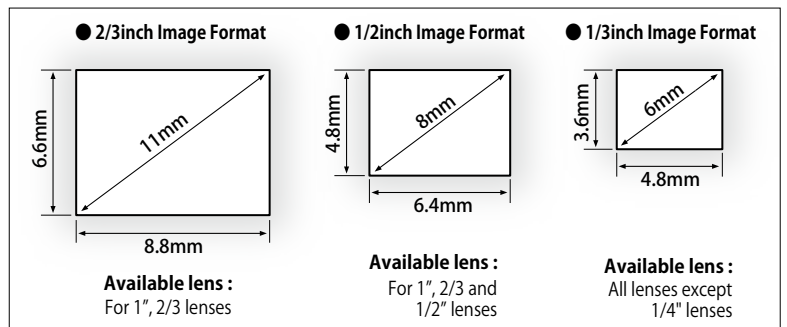
Lenses with the SD mark use Super-low Dispersion glass which minimizes the secondary spectrum caused by chromatic aberration. Basically, these lenses use FK01 and FK02 optical materials which give them SD (APO) quality. This provides excellent image quality in telephoto lenses of 200mm or more.



Glossary

Image Format

There are three common image format sizes including 2/3", 1/2" and 1/3" corresponding to approximate diagonal length of image sensor as shown in the figures. A large image format lens may be used for smaller format devices, and will overfill the image sensor. In case of using a small format lens on a larger size device it will result in vignetting. The field of view of a lens is determined by the focal length and the image format size. The angle of view becomes wider when the image format is larger.



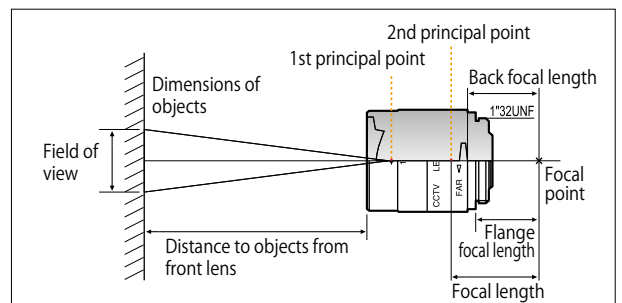
F number

The F-number is an index of the amount of light that passes through a lens. The smaller the number is, the greater the amount of light is. The relationship during F-number, focal length and effective diameter can be calculated by the following formula.

$$F\text{-number} = f/A \quad f = \text{focal length} \quad A = \text{effective diameter}$$

C-Mount & CS-Mount

CCTV lenses are usually used on C-mount or CS-mount. Both have same shape but with different flange focal length. C-mount has 17.526mm and CS-mount has 12.5mm as flange focal length.



Back focal length & Flange focal length

Back focal length ... The distance between the last lens element of the lens group and focal point.

Flange focal length ... The distance between flange surface (the contact surface of camera and lens) and focal point.

Vari-focal lenses

Vari-Focal lenses provide different focal lengths for covering the most commonly used angles of view. Since the scope of images to be captured can be adjusted by changing focal lengths, there is no need for moving the camera or changing lenses even when different angles of view are desired.

How to calculate the field of view $Y = \frac{\text{object distance} \times \text{image size}}{\text{focal length}}$

How to calculate the focal length $Y = \frac{\text{object distance} \times \text{image size}}{\text{object size}}$

Minimum object distance (M.O.D.)

The closest distance which a lens can focus on an object. Generally the smaller the focal length is, the shorter the M.O.D. is. This distance can be altered with use of extension tubes.

Focal Length

Focal length is the distance from the 2nd principal point to focal point. With short focal length the field of view will be larger. With long focal length, the field of view will be narrow.

Preset

This function allows a lens to feedback information regarding zoom and focus position to the controller when used with an appropriate controller. The controller will quickly scan a preselected scene and adjust focusing on the proper point without operator intervention.



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