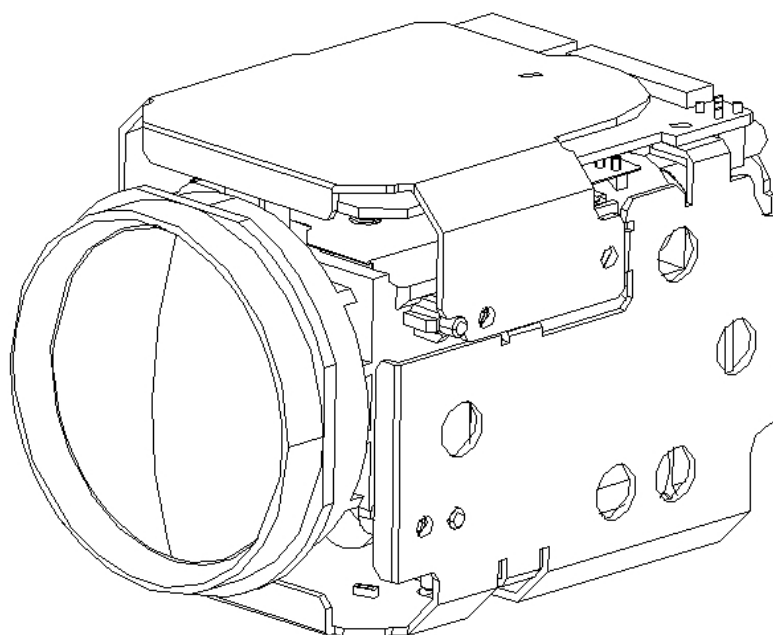


10x Zoom Block Camera Technical Manual Full-HD

MODEL : IVZ-FM10



REV. IVF10F1909 -01

1. SPECIFICATION

| IVZ-FM10 | | SPECIFICATIONS |
|-------------------|-------------------------|--|
| Sensor | Image Sensor | 1/2.8" Progressive CMOS (Approx. 2.1 mega) |
| | Scanning System | 16:9 Progressive |
| | Sync. System | Internal |
| | Effective Pixel | 1920(H) x 1080(V) |
| | Min. Illumination | 0.1Lux (Day), 0.01Lux (Night), 0.001Lux(DSS on) |
| | Horizontal Resolution | 1000TVL |
| Optics | Lens | 10x Optical Zoom, f=4.7~47 mm, F1.6 ~ F3.0 |
| | Zoom | 10x optical zoom + 12x digital zoom = 120x |
| | Focus | Near/Far, Auto/Manual/One Push |
| | Angle of View(H) | 57.7 degrees (wide end), 6.4 degrees (tele end) |
| | Min. working distance | 100 mm (wide end), 900 mm (tele end) |
| Functions | Back Light Compensation | WDR/BLC, HLC(High Light compensation) |
| | Exposure | Auto / Manual |
| | White Balance | Auto(3,000°K~8,000°K) / ATW(1,900°K~11,000°K) / Manual |
| | Day & Night System | AGC / TDN(ICR) |
| | Electronic Shutter | NTSC: 1/30~1/30000, PAL: 1/25~1/30000, DSS(~ 1/1sec) |
| | Functions | Privacy Mask, Image Mirror, 3DNR, Flicker-less, Sharpness, Defog, DIS(Digital Image stabilizer), NegArt, Freeze, B&W |
| Video Outputs | Digital Output (LVDS) | 1920x1080p@25/30/50/60 1920x1080p@29.97/59.94 (optional) |
| | ITU-R BT.1120 | 1920x1080i@50/60 1920x1080i@59.94 (optional) |
| | YcbCr4:2:2 16bits | 1280x720p@25/30/50/60 1280x720p@29.97/59.94 (optional) |
| | SDI(optional) | SMPTE 292M(1.485Gbps): 1080p@25/30/29.97 1080i@50/60/59.94 720p@25/30/29.97/50/60/59.94 SMPTE 424M(2.97Gbps): 1080p@50/60/59.94 |
| | CVBS | Analog Composite(1V ± 0.2 Vp-p) NTSC/PAL |
| Control Interface | UART(5V level) | PELCO-P/D, SONY-VISCA protocol |
| | | 8bits data, 1 stop bit, no parity, 2400~115200bps |
| General | Operation Temperature | -20℃ ~ 60℃ |
| | Power Input | 12VDC (7V to 15VDC) |
| | Power consumption | Max 5W (3.2W Lens inactive, 3.9W Lens active) |
| | Mass | Approx. 140g (5.0 oz.) |
| | Dimensions | 67(D) x 43.6(W) X 45.3(H) mm |

2. OPERATING CAMERA

2.1. Camera OSD menu

| | | | | |
|---------------|-------------|---|----------|---------|
| WB CONTROL | MODE | AWB / ATW / PUSH / INDOOR / OUTDOOR / MANUAL | | |
| | PUSH | | | |
| | RED | 0 ~ 100 | | |
| | BLUE | 0 ~ 100 | | |
| AE CONTROL | MODE | AUTO/SHUT PRI/IRIS PRI/AGC PRI/BRIGHT/MANUAL | | |
| | SHUT | /30/60/90/100/125/180/250/350/500/725/1000/1500/2K/3K/4K/6K/10K | | |
| | IRIS | F1.6 ~ F16 | | |
| | AGC | 0 dB ~ | | |
| | AGC LIMIT | 0 ~ 15 | | |
| | SENS UP | OFF ~ X15 | | |
| | EXP COMP | 0 ~ 14 | | |
| | FLICKERLESS | OFF/ AUTO/ ON | | |
| FOCUS CONTROL | FOCUS MODE | AUTO/ MANUAL | | |
| | PUSH | PRESS OK | | |
| | AF MODE | NORMAL/ INTERVAL/ ZOOM TRIG | | |
| | WIDE LIMIT | X1 ~X9 | | |
| | TELE LIMIT | X2 ~X10 | | |
| | DZOOM | OFF/ ON | | |
| | ZOOM SPEED | 0 ~ 7 | | |
| | NEAR LIMIT | 30CM/ 1M/ 1.5M/ 2M/ 3M/ 5M/ 10M | | |
| | AF INTERVAL | 0 ~ 255 | | |
| BACK LIGHT | BACKLIGHT | BLC | LEVEL | 0~255 |
| | | | DISPLAY | OFF/ ON |
| | | | WIDTH | 0~48 |
| | | | HEIGHT | 0~33 |
| | | | MOVE HOR | 0~48 |
| | | | MOVE VER | 0~33 |
| | HLM | AREA DISPLAY | OFF/ ON | |
| | | LEVEL | 0~20 | |
| | | BLACK MASK | OFF/ ON | |
| | | WIDTH | 0~48 | |
| | | HEIGHT | 0~33 | |
| | | MOVE HOR | 0~48 | |
| | SPOT AE | DISPLAY | OFF/ ON | |
| | | WIDTH | 0~48 | |
| | | HEIGHT | 0~33 | |
| | | MOVE VER | 0~33 | |
| | WDR | OFF/ ON | | |
| | DWDR | STRENGTH | 0 ~ 16 | |

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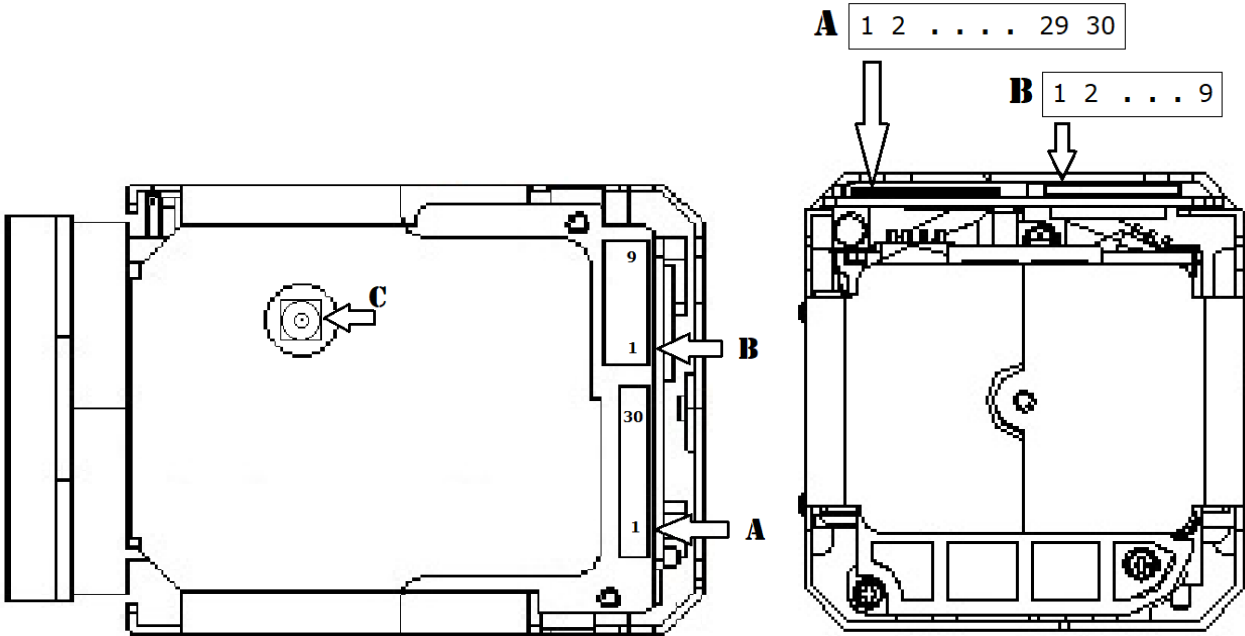
| | | | | |
|----------------|---------------------|----------------------------|---|--|
| | | SATURATION | 0 ~ 16 | |
| | | LOCAL RATIO | 0 ~ 16 | |
| | | SAT. SYNC | OFF/ ON | |
| | | AUTO LEVEL | LOW/ MID/ HIGH | |
| | DEFOG | STRENGTH | 0 ~ 16 | |
| | | THRESHOLD | 0 ~ 3 | |
| | | AUTO LEVEL | LOW/ MID/ HIGH | |
| IMAGE CONTROL | COLOR LEVEL | 0 ~ 20 | | |
| | SHARPNESS | 0 ~ 20 | | |
| | CONTRAST | 0 ~ 20 | | |
| | HUE | -10 ~ 0 ~ 10 | | |
| | IMAGE EFFECT | OFF/ NEGA/ GRAY | | |
| | IMAGE FLIP | OFF/MIRROR/V-FLIP/ROTATION | | |
| | DNR | MODE | OFF/ 2D/ 3D/ 2D+3D | |
| | | 3DNR LEVEL | LOW/MID/HIGH/AUTO | |
| | | 2DNR LEVEL | LOW/MID/HIGH/AUTO | |
| | | APERTURE | 0~4 | |
| | GAMMA | DEFAULT/1.0 ~ 0.4 | | |
| | GAMMA OFFSET | -64 ~ 64 | | |
| COLOR SUPPRESS | OFF/ LOW/ MID/ HIGH | | | |
| LENS SHADING | OFF/ ON | | | |
| DISPLAY | DAY/NIGHT | MODE | AUTO/ DAY/ NIGHT | |
| | | DELAY [SEC] | 0 ~ 60 | |
| | | D->N LEVEL | 0 ~ 28 | |
| | | N->D LEVEL | 0 ~ 27 | |
| | | NIGHT COLOR | OFF/ ON | |
| | | COLOR BURST | OFF/ ON | |
| | CAM TITLE | OFF/ ON | | |
| | ZOOM MAG | OFF/ ON | | |
| | PRIVACY | MODE | OFF/ ON | |
| | | TYPE | SQUARE/ POLYGON | |
| | | MASK NO. | MASK1 ~ MASK8 | |
| | | DISPLAY | OFF/ ON | |
| | | COLOR | BLK/WHT/GRN/BLU/RED/CYAN/MAG/YEL/GRAY 1~6,MOSAIC | |
| | | POLY SELECT | L-TOP/ R-TOP/ L-BOT/ R-BOT | |
| | | POSITION HOR | 0~255 | |
| | | POSITION VER | 0~216 | |
| | | WIDTH | 0~120 | |
| | | HEIGHT | 0~68 | |
| | MOTION | AREA | 1 ~ 4 | |
| | | AREA ACTIVE | OFF/ ON | |
| | | AREA DISPLAY | OFF/ ON | |
| SIZE POSITION | | | | |
| SENSITIVITY | | 0 ~ 40 | | |

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| | | | |
|--------------|------------------|--|-----------------------------------|
| | | MOTION VIEW | OFF/ ON |
| | DEFECT PIXEL | OFF/ON/STATI C/FIXED | |
| | IMAGE STABILIZER | OFF/ ON | |
| SYSTEM SETUP | RS232C | CAM ID | 1 ~ 255 |
| | | ID DISPLAY | OFF/ON |
| | | BAUDRATE | 2400/4800/9600/19200/38400/115200 |
| | | SAVE | |
| | OUTPUT FORMAT | 1080P60/59/50/30/29/25 1080I60/59/50 720P/60/59/50/30/29/25 | |
| | VER. | | |
| RESET | MODE | FACTORY / USER | |
| EXIT | | | |

3. Camera Interface

3.1. Camera Interface

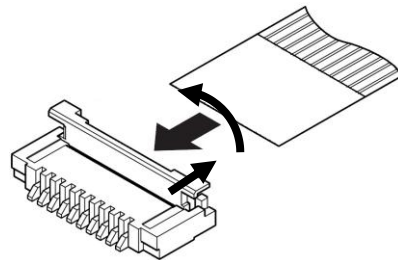


B connector:

Connector – KYOCERA 00-6200-509-130-000+ (1.0mm pitch 9pin, Bottom Contact)

| Pin | Name | Level |
|-----|-------------------|--------------------------|
| 1 | RXD (UART input) | CMOS 5V (High Min. 2.5V) |
| 2 | TXD (UART output) | CMOS 5V (High Min. 4.5V) |
| 3 | GND | |
| 4 | DC power input | 9 ~ 15VDC |
| 5 | GND | |
| 6 | CVBS Output | |
| 7 | GND | |
| 8 | N.C | KEY input |
| 9 | N.C | |

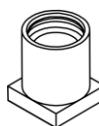
1.0mm pitch FFC/FPC Cable (9pin)



Slide actuator out
and rotate it up to insert FPC.

C connector: HD-SDI video output (optional)

Connector –MMCX(micro-miniature coaxial)Female Jack

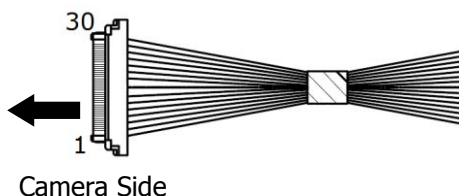


A connector : USL00-30L-C (KEL)

Recommended cable ASSY :

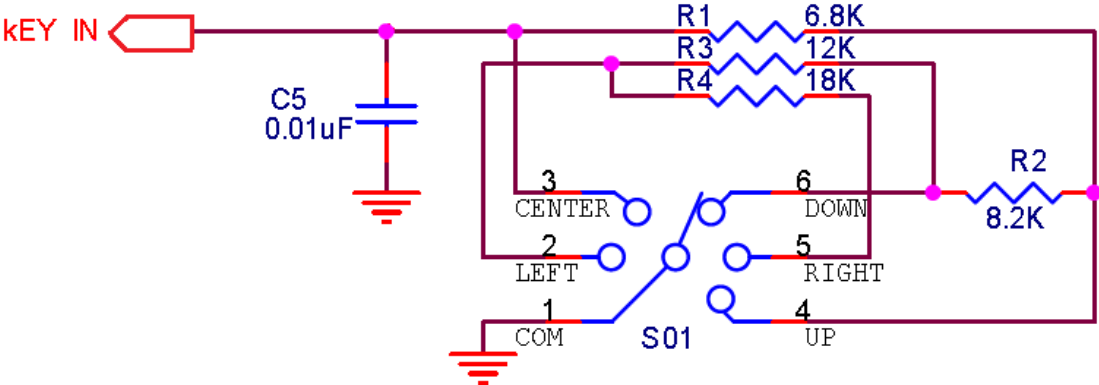
Cables - micro coaxial cable #42AWG

Connectors - USL20-30S (KEL)



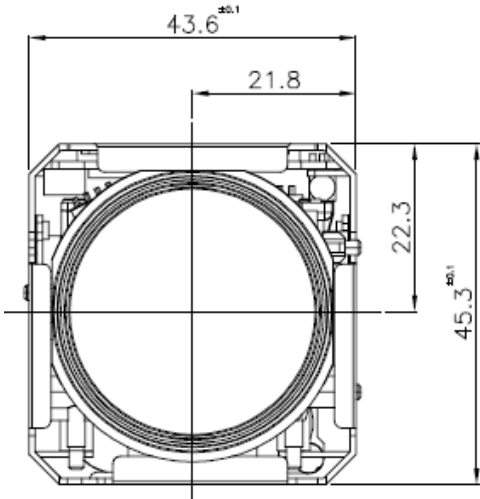
| A connector pin assignment (KEL USL00-30L) | | | |
|--|----------------------------------|----|---|
| 1 | TXOUT3+ (LVDS) | 16 | DC (9~15V) |
| 2 | TXOUT3- (LVDS) | 17 | DC (9~15V) |
| 3 | TXCLKOUT+ (LVDS) | 18 | DC (9~15V) |
| 4 | TXCLKOUT- (LVDS) | 19 | KEY input |
| 5 | TXOUT2+ (LVDS) | 20 | GND |
| 6 | TXOUT2- (LVDS) | 21 | TXOUT7+ (LVDS) for Dual out mode |
| 7 | TXOUT1+ (LVDS) | 22 | TXOUT7- (LVDS) for Dual out mode |
| 8 | TXOUT1- (LVDS) | 23 | TXOUT6+ (LVDS) for Dual out mode |
| 9 | TXOUT0+ (LVDS) | 24 | TXOUT6- (LVDS) for Dual out mode |
| 10 | TXOUT0- (LVDS) | 25 | CVBS output |
| 11 | GND | 26 | EXT. Reset :Reset Low(GND), Normal Open(3.3V) |
| 12 | TXD (UART output) High Min. 4.5V | 27 | TXOUT5+ (LVDS) for Dual out mode |
| 13 | RXD (UART input) High Min. 2.5V | 28 | TXOUT5- (LVDS) for Dual out mode |
| 14 | DC (9~15V) | 29 | TXOUT4+ (LVDS) for Dual out mode |
| 15 | DC (9~15V) | 30 | TXOUT4- (LVDS) for Dual out mode |

3.2. Key Application recommended circuit

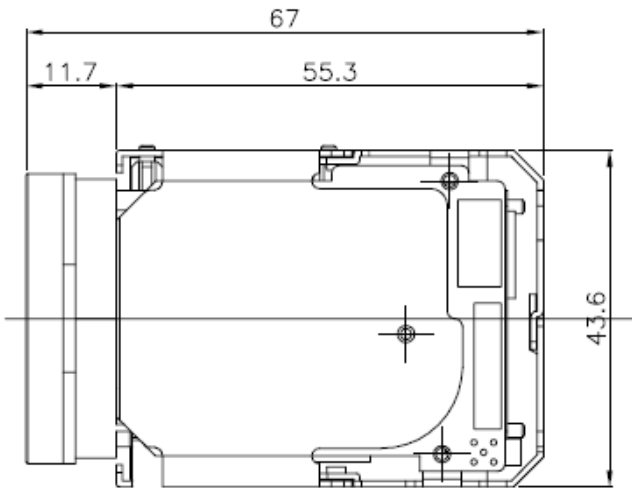


4. Dimensions

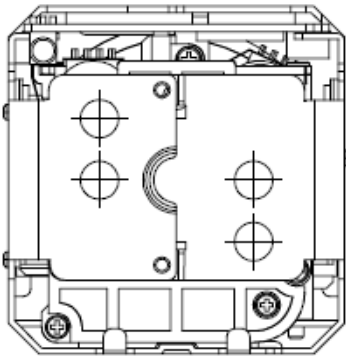
Front



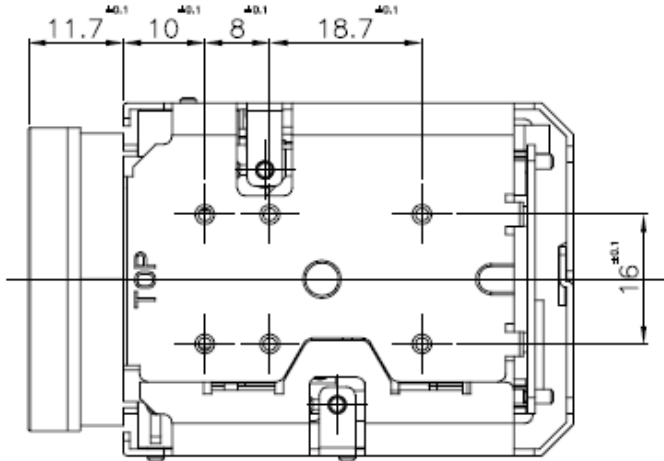
Top



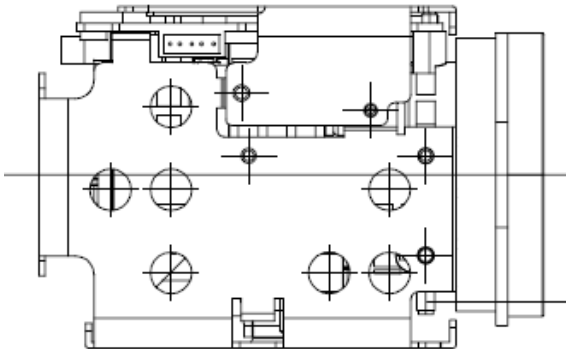
Back



Bottom



Left



Right

