FAYTECH® AI CAMERA RAIL 4.0 SHELF MODULE

FTAICR - Shelf Module
3030524511

Preliminary Datasheet
2026.11.06

Pictures show sample configurations, real product may vary.

SCAN ME

CAMERAS

Main Cameras	2 × 48 MP MIPI-CSI, motorized tilt
Image Sensor	OmniVision OV48B2Q, 1/2.0", BSI
Max. Resolution	8000 × 6000 (48 MP)
Lens / Focal Length (EFL)	B9606A / 3.574 mm
Field of View D / H / V [°]	120 / 96 / 73.8 (±3)
Focus	Fixed focus, set to 2 m
Distortion	< -14.12 %
Tilt Drive	2 × stepper motor (via REST API)
Overview Camera	1 × 8 MP USB, SDA-8MP-4K004
Overview Max. Resolution	3840 × 2160
Overview FOV D / H / V [°]	123 / 113 / 78
Overview Output	MJPEG 30 fps / YUY2

PC SYSTEM & SOFTWARE

Platform	SMARC compute module (swappable)
Processor	Amlogic A311D, 4 × A73 + 2 × A53
AI Performance	NPU 5 TOPS on board
AI Expansion Slot	M.2 (PCIe) for DeepX module, optional
RAM Size	4 GB LPDDR
Storage	64 GB eMMC
Operating System	Linux (Buildroot / Debian)
Camera Interface	2 × MIPI-CSI (2-lane)
Video Streaming	2 × Full HD, 30 fps, H.265, RTSP
Photo Modes	12 MP quick / 48 MP / 48max HDR
Image Formats	DNG RAW (10-bit), 16-bit TIFF
Picture Privacy	On-device pixelation, fail-closed
Software Interface	Web UI (EN/DE/ZH), REST API
Updates	In the browser, with rollback
Watchdog / Status	Watchdog, self-test, RGB status LED

INTERFACES

Ethernet	2 × RJ45, 2.5 Gbit/s
Network Topology	Daisy chain (integrated switch)
Rail Connector	8-pole trunking rail plug
Pin-out	CHR / L1 / N / L2 / PE / L3 / D1 / D2
Camera Power Phase	L3
Lamp Control	Phase switching L1 / L2
DALI (optional)	D1 / D2, controller by customer

ENVIRONMENTAL CONDITIONS

Operation Temperature	-10°C to 50°C
Ingress Protection	No
Usage	Indoor only

CERTIFICATIONS

CE Conform	Yes, certificate upon request for a fee
FCC Conform	Yes, certificate upon request for a fee

CHASSIS

Case Design	Rail module with camera housing
Front Cover	Plastic cover with lens windows
Module L × W × H [mm]	510 × 70.2 × 82.7
Length Split [mm]	360 camera body + 150 rail connector
Mounting	Plug-in into 8-wire trunking rail

faytech Tech Co., Ltd. | Fl. 2, Bldg. 8, Winlead Intelligent Park | Shenzhen, China
www.faytech.com +86 755 89580612 sales@faytech.com
061126 | ds_2026_FTAICR_shelf_EN | specification is subject to change

ACCESSORIES & OPTIONS

AI Module (option)	3030528212 DeepX DX-M1M, 25 TOPS
Version without Overview Camera	Available (8 MP USB camera removed)
Sensor Upgrade	OV48C40 1/1.32" AF, on request
Accessory Kit	3030524513 (1 kit per 15 m or per 6 camera modules + 6 light rails)
Ceiling Clamp	3030524517 (2 per 1.5 m rail)
Matching Light Rails	3030524469 (2.1 m), 3030526874 (1.5 m), 3030526873 (0.6 m)

INTENDED USE/APPLICATION

The AI Camera Rail 4.0 Shelf Module is intended for indoor retail environments. It plugs into the 8-wire trunking light rail above the shelves and captures high-resolution images of the shelf fronts, e.g. for out-of-stock detection, price-label checks and planogram compliance. Two motorized 48 MP cameras and a 4K overview camera are controlled via web UI and REST API over the 2.5 GbE daisy-chain network. People are pixelated in the module before an image is stored or sent. More AI performance can be added later with the DeepX module in the M.2 AI slot, without replacing the rail.
Installation must be carried out by a qualified electrician. Light rails (LR) and camera modules (CR) can be combined freely, standard sequence LR - CR - LR - CR - LR.
The device is designed for indoor use only. Devices operated or stored outside the specified temperature ranges are not covered by warranty.

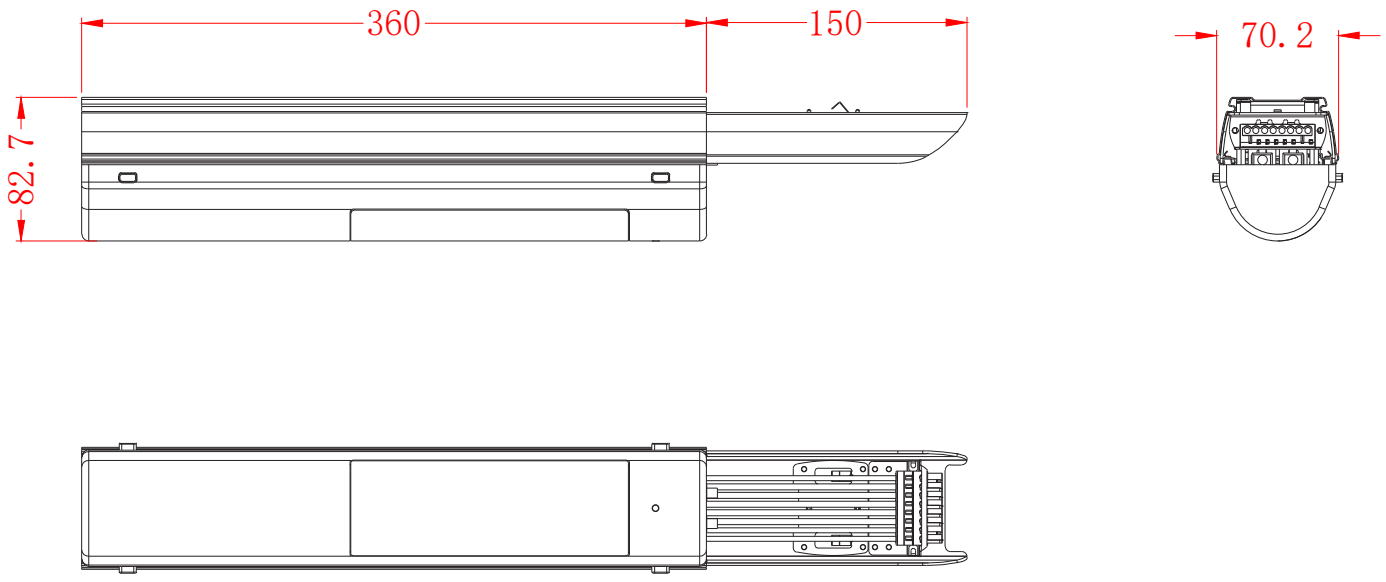
POWER

Rated Input	100-240 V AC, 50/60 Hz, 0.6 A
Power Feed	230 V AC via trunking rail (L3)
Internal Power Supply	AC/DC, 12 V DC
Power Consumption	On request

WEIGHT & PACKAGING

Net Weight	approx. 1.5 kg
Gross Weight (incl. Cartonage)	17.75 kg per carton of 9 modules
Packaging Material	Carton, EPE foam inserts, EPE bag per module
Packaging Size L × W × H [mm]	710 × 464 × 434 (9 modules)

DIMENSIONS



General Tolerance: ISO 2768-1c

UPDATE NOTES:

Version:	Changes:
v1	First version (preliminary)
v2	Software, AI slot, weight & packaging

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