



HIKMICRO SP40

Professional Handheld Thermal Camera — SP Series

480×360 px resolution · SuperIR 960×720 px · IP54 · 90° rotating screen

480×360 px	960×720 px	< 30 mK
IR Resolution	SuperIR	NETD

DESCRIPTION

The **HIKMICRO SP40** is a top-of-range professional handheld thermal camera for inspection technicians and maintenance engineers in industrial, energy, and civil environments. The **480 × 360 pixel** detector (17 µm pitch, NETD < 30 mK) detects the smallest thermal differences, while **SuperIR** technology brings acquired images to **960 × 720 pixels** for superior diagnostic reports.

The **interchangeable lens system** (L6 tele to L37 wide-angle), **90°-rotating LCD screen**, and **180°-rotating lens** enable angled inspections from difficult positions while maintaining safe working distances. The **SP40H** adds Range 3 (**300°C to 2200°C**) for furnaces, refractories, and metal smelting. **IP54** protection, 1 m drop resistance, up to **8 hours** battery life (2 batteries included).

KEY TECHNOLOGIES & FEATURES

SuperIR	Quadruples IR resolution in capture and streaming. Radiometric images are fully reprocessable in HIKMICRO Analyzer for post-processing analysis.
Interchangeable Optics	Quick-release mount compatible with the entire SP family. Laser autofocus (~1 s) works even under low thermal contrast conditions.
Rotating Screen + Lens	Screen 90° + lens 180°: angled inspections without postural strain on panels, overhead equipment, confined spaces, and elevated structures.
Radiometric Video	Records full radiometric data on every pixel, reprocessable in HIKMICRO Analyzer for time-based thermal variation analysis.
GPS + Compass + Laser	Every outdoor image can embed GPS coordinates, compass direction, and laser distance for georeferencing in inspection reports.
HIKMICRO Analyzer	Free PC software for advanced analysis, archive management, and customisable professional reports with company logo and data.

TECHNICAL SPECIFICATIONS

IR Resolution	480 × 360 px (172,800 pixels)
SuperIR (pixel enhancement)	960 × 720 px — 4× native resolution
NETD (thermal sensitivity)	< 30 mK @ 30°C, F# = 1.0
Frame Rate	30 Hz
Detector Pitch	17 µm
Spectral Range	7.5 – 14 µm
Temperature Range 1	-20°C ... +150°C
Temperature Range 2	0°C ... +650°C
Temperature Range 3 (H version only)	300°C ... +2200°C
Accuracy Range 1	±2°C for -20...0°C · ±1°C for 0...100°C · ±1% for 100...150°C
Accuracy Range 2	±2°C for 0...100°C · ±2% for 100...650°C

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Integrated Visual Camera	8 MP — 3264 × 2448 px
Main Display	5" LCD touchscreen 1280 × 720 — manual/auto brightness
OLED Viewfinder (EVF)	Not present (available on SP60)
Digital Zoom	1× ... 12× continuous
Image Modes	Thermal · Visual · Fusion · PIP · Blending
Color Palettes	White Hot, Black Hot, Rainbow, Ironbow, Red Hot, Fusion, Rain, Blue Red
Color Alarm	Above / Below / Interval / Insulation / Condensation
Focus Mode	Laser Assisted AF · Continuous AF · AF · Manual · Touch AF (~1 s)
Measurement Tools	Center · Hot Spot · Cold Spot · ΔT · 10 spots · 1 line · 5 rectangles · 5 circles
Image Storage	~130,000 images (8 MP) — expandable SD up to 128 GB
Video Storage	MP4 max 420 h · Radiometric video max 72 h
Annotations	Voice (60 s) · Text (200 chars) · QR Code · Picture · Tag · Sketch
Connectivity	Wi-Fi 802.11 b/g/n (2.4+5 GHz) · Bluetooth 4.2 · USB-C · HDMI-D
GPS & Compass	Yes
Laser Distance Meter	50 m indoor · 10 m outdoor
Battery	2 × interchangeable Li-ion — ~4 h each (max ~8 h total)
Charging Time	~2.5 h (dual-bay charger included)
Protection	IP54 (IEC 60529)
Drop Test	1 m (IEC 60068-2-31)
Operating Temperature	-20°C ... +50°C
Storage Temperature	-20°C ... +60°C
Relative Humidity	< 95%, non-condensing
Weight	~1.451 g
Dimensions	210,1 × 141,0 × 87,8 mm
Tripod Mount	UNC ¼"-20
Laser Pointer	Class II · λ = 635 nm · Power < 1 mW
LED Light	Yes
Warranty	3 yr product · 10 yr detector · 2 yr battery

* Range 3 available on SP40H/SP60H only. Accuracy ±2% across the full 300–2200°C range.

INTERCHANGEABLE LENSES

Lens	Focal Length	FOV	IFOV	Min. Focus Dist.
L6 (tele)	77.4 mm	6° × 4.5°	0.22 mrad	2.0 m
L9	51.4 mm	9° × 6.8°	0.33 mrad	1.0 m
L19 (standard)	25.6 mm	18.7° × 14°	0.66 mrad	0.15 m
L37 (wide)	12.6 mm	37.3° × 27.8°	1.35 mrad	0.15 m

Lens selection guide: L6/L8 (tele) → long distance, IFOV 0.22 mrad, LV/MV/HV. L9/L12 → general purpose. L19/L25 (standard) → bundled lens, versatile. L37/L50 (wide-angle) → wide surfaces, buildings, roofs, PV systems.

TYPICAL APPLICATIONS

Sector	Application	Key Feature
Building / Civil	Energy diagnostics, thermal bridges, heat loss	Insulation & condensation alarm · Image fusion
Building / Civil	Water infiltration in walls, flat roofs	Ironbow/Rainbow palette for max contrast
Building / Civil	Underfloor heating/cooling inspection	PIP mode: thermal+visual overlay
Electrical LV/MV	Panel, busbar, transformer, connection check	10 spots + ΔT · above/below threshold alarm
Mechanical / PDM	Motors, bearings, gearboxes, pumps	SuperIR for high detail · Laser AF
Photovoltaic	Defective cells, hot spots, bypass diodes	GPS+compass · 12× zoom · georef.
High temp. (H)*	Furnaces, refractories, metal smelting	Range 3: 300–2200°C (SP40H/SP60H only)
PCB / Electronics	Board inspection with microscope stand	PCB Inspection mode · macro lens
Fire Safety	Thermal surveillance, hot spot detection	Radiometric video · Wi-Fi streaming · HDMI

* SP40H / SP60H models only, Range 3: 300–2200°C.

RECOMMENDED INSPECTION WORKFLOW

1. Preparation	Charged battery, appropriate lens. Start camera and allow detector stabilisation (~3 min).
2. Calibration	Set emissivity (shiny metal $\epsilon \approx 0.1$; oxidised $\epsilon \approx 0.7$ – 0.9 ; concrete/plaster $\epsilon \approx 0.92$ – 0.95), reflected temperature, and laser distance. 10% ϵ error → approx. 1–3°C measurement error.
3. Acquisition	Fusion/PIP mode for visual context, Thermal for maximum detail. Enable above/below threshold colour alarm. Annotate with voice or text.
4. Reporting	Wi-Fi → HIKMICRO Viewer (mobile) or USB/SD → HIKMICRO Analyzer (PC). Report with isotherms, temperature profiles, side-by-side images. Export as PDF.
5. Maintenance	Clean lens with supplied cloth. Recharge both batteries. Periodic calibration every 2 years (HIKMICRO certified service).

BOX CONTENTS



• HIKMICRO SP40 thermal camera	• Mini HDMI to HDMI cable
• 2× interchangeable Li-ion battery	• Lens caps
• Dual-bay charger + international plugs	• Dust-free cloth
• 128 GB SD card	• Multilanguage quick start guide
• Hand strap	• Calibration certificate
• Neck strap	• Padded hard carrying case
• 2-in-1 USB-C cable	

ACCESSORIES

SP Series Lenses (L6/L9/L19/L37)	Quick-release interchangeable optics for all FOV and scenarios
0.5× Wide-Angle Lens	Extended FOV for buildings, roofs, and PV systems
Battery — HM-7250DC	Additional Li-ion for extended operation
Dual-Bay Charger — HM-20322ZC	Simultaneous charging of 2 batteries
Microscope Stand (SP40/SP60 only)	Magnified thermal inspection system for PCB components

Desktop Bracket	Fixed support for stationary and laboratory applications
Soft Carrying Pouch — HM-SP01-POUCH	Daily field transport

COMPLIANCE & STANDARDS

IP / Protection	IP54 (IEC 60529)
Electrical Safety	IEC 61010-1
EMC	EN 301 489-1 · EN 301 489-17 · EN IEC 61000-6-2 · EN IEC 61000-6-4 · EN 61326-1
Vibration	2 g (IEC 60068-2-6)
Shock	25 g (IEC 60068-2-27)
Drop test	1 m (IEC 60068-2-31)
Laser	Classe II / Class II · $\lambda = 635 \text{ nm}$ · $< 1 \text{ mW}$

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