

# ExCam® XI80

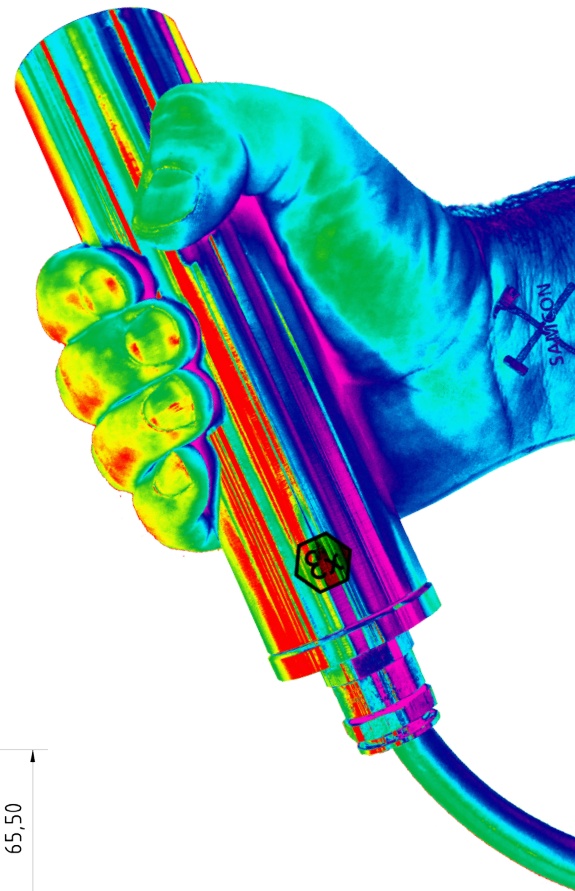


## Datasheet.

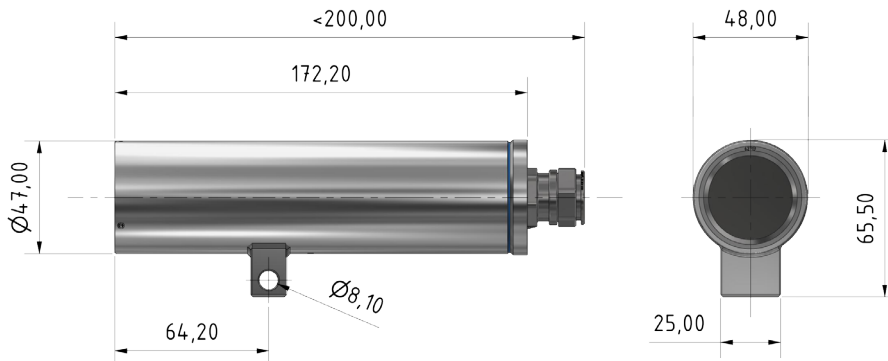
### World's Smallest Explosion Proof Spot-Finder Thermographic Camera

#### Features.

- ✓ Certification for Hazardous Areas
- ✓ Ultra-Compact and Lightweight Thermal Imaging Camera with Integrated IR-Thermometer
- ✓ Exact Temperature Measurement from -20°C to 900°C
- ✓ Thermal Sensitivity NETD 0.1°C
- ✓ Imager with Motor-Focus
- ✓ Four Different Optics Available
- ✓ Autonomous Operation with Automatic Spot Finder
- ✓ Automatic Calibration
- ✓ Single-Cable-Solution (Ethernet, Voltage, I/O)
- ✓ Protection Level of IP66/68 (IEC 60529)



#### Dimensions.

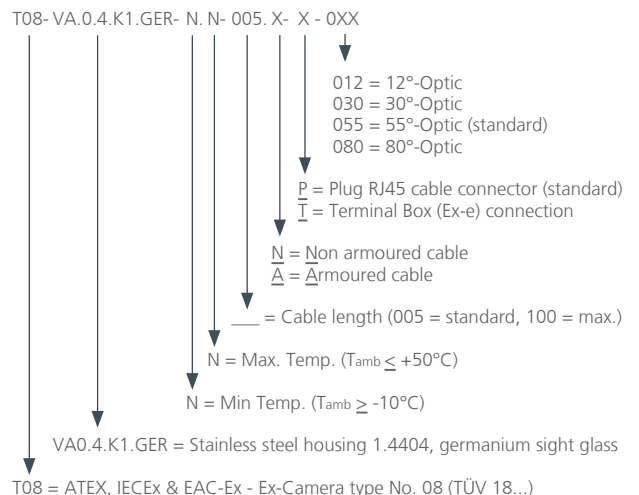


#### Zones.

Group II (Gas & Dust)	ATEX / IECEx				
Zone	0	1	2	21	22
For use in	✗	✓	✓	✓	✓

More certificates upon request

#### Models.



## Data.

# ExCam® XI80



### Explosion protection

Declaration of conformity:

DIN EN/IEC/GOST ... 60079-0, DIN EN/IEC/GOST ... 60079-1,  
DIN EN/IEC/GOST ... 60079-7, DIN EN/IEC/GOST ... 60079-14,  
DIN EN/IEC/GOST ... 60079-31  
TUEV-18-ATEX-8218X, IECEX-TUR-18.0023X,  
No. TC RU C-DE.HA65.B.01652/22, TUEV-22-UKEX-7137X



Ex- certificates:

II 2G Ex db IIC T6 Gb  
 II 2D Ex tb IIIC T80°C Db



Ex- Marking Camera:  
Explosion protection (gas):  
Explosion protection (dust):  
Ex- Marking Terminal Box:  
Explosion protection (gas):  
Explosion protection (dust):

II 2G Ex eb IIC T5 Gb  
 II 2D Ex tb IIIC T95°C Db IP66



### Mechanical characteristics



Material (cam / junction box):  
Protection level (cam / junction box):  
Weight:

Stainless Steel (AISI 316L/1.4404) / Polyester resin  
IP66/68 / IP66 (IEC/EN 60529)  
0.93 kg



### Range of temperature

-10°C to +50°C



### Power supply

Power input:  
Power consumption:

10 - 30VDC  
max. 2.5 W@24VDC; typ. < 2.0W  
max. 500 mA



### Connection cable type

Outside diameter:

WWW.SAMCON.EU ... Cat.6 / 4x2xAWG23/1  
8.9mm to 15.5mm (12.4mm SKDP03-T)



### Optic

Type (choosable):  
Field of view:  
Minimum object distance (MOD):  
Smallest recommended object size:

12° (f=12.7), 30° (f=5.1), 55° (f=3.1) Standard, 80° (f=2.3)  
12°x12° / 30°x30° / 55°x55° / 80°x80°  
0.3m@12°; 0.2m@30°/55°/80°  
Measurement Field of View (MFOV): 2x2 Pixel



### Camera

Image sensor:  
Resolution:  
Focus:  
Frame rate:  
Spectral range:  
Temperature range:  
Thermal sensitivity:  
Precision:  
Visual resolution (D:S):  
Warm-up period:  
PC-Interfaces:  
Direct Out-/Inputs:  
Video streaming:

FAP (Focal Plane Array), uncooled microbolometer (34 µm Pitch)  
80x80 p  
Motorized focus with remote control  
50Hz with Real Time Recording  
8 - 14 µm  
-20°C ... 100°C, 0°C ... 250°C, 150°C ... 900°C switchable  
NETD < 100 mK  
±2°C or ±2 %, the higher value is valid  
190:1 (12° optics)  
10 min.  
Ethernet (100 Mbit/s) / RS 485\*  
1x analog output (0/4-20 mA); input (analog or digital); optical isolated  
Triggered data capture, radiometric videos (\*.ravi) and snapshots (\*.tiff, \*.avi),  
Adaption of recording frequency



Image setting:

Real Time-Temperature information as digital display or graphic display (line profile, temperature-time-diagram), range of colours to emphasize thermal contrasts, ...

### Application

Non-metals



### Network

100BaseTX

### System integration

Software package:  
SDK:  
Process Interface features:

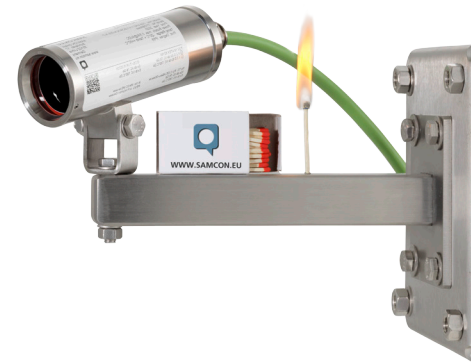
optris PIX Connect (on a supplied USB-stick), compatible with Windows 7, 8 and 10  
Software Development Kit (open source)  
External control of emissivity, background radiation, compensation or reference,  
temperature/ Triggered video or snapshot recording,  
analog output of temperatures of main measuring area or alarm output  
Configuration Automatic or manual scaling of the measuring range  
Selectable and definable software layouts, Language-translation-tool, Adjustable measuring  
parameters: Emissivity 0.10 - 1.00, Background radiation compensation, Reference temperature,  
Measurement Modes; Flexible spots and measurement fields with automatic calculation of  
MAX, MIN or AVG values; Automatic HOT-spot- and COLD-spotfinder, Temperature profiles,  
Isotherm exposition Reference function (with external sensor), Linescanning modes,  
Image presentation, 11 color palettes, Color reference bar, Histogram, Digital display of measuring  
field temperatures (with alarm signal), Video control (play, pause, stop, detail screen forward & backward),  
Full screen mode,  
Video recording: Realtime video recording (radiometric) with 50 Hz (adjustable), Video editing tools,  
Snapshot saving (radiometric JPG);  
External software communication via COM-Ports and DLL

Software features:

### Optional accessories

Industrial-Process-Interface (PIF):

Wall mount bracket (WMB), Pole mount bracket (PMB)  
3x analog output (0/4-20 mA or 0-10 V) or 3x alarm output (relais 0-30 V / 400 mA)  
3x input (analog or digital) / 1x failsafe (LED and relais);  
upgretable up to 3 PIFs; optical isolated



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\* = Direct out- and inputs are not available when using the RS485-interface



# ExCam XI80 - Measurement field- and pixel size



Optic			Distance to measurement object [m]											
			0.05	0.1	0.2	0.3	0.5	1	2	4	6	10	30	100
55°	Enlargement of total measuring field at object level [m]	Horizontal HFOV	0.057	0.11	0.218	0.325	0.539	1.07	2.14	4.27	6.41	10.7	32	106.7
		Vertikal VFOV	0.057	0.11	0.218	0.325	0.539	1.07	2.14	4.27	6.41	10.7	32	106.7
		Diagonal DFOV	0.08	0.156	0.308	0.459	0.762	1.52	3.02	6.04	9.06	15.1	45.3	150.9
	Size of the single pixel [mm]	IFOV	0.6	1.2	2.3	3.4	5.6	11.2	22.4	44.6	66.9	111.5	334.5	1114.8
12°	Enlargement of total measuring field at object level [m]	Horizontal HFOV		0.022	0.043	0.065	0.11	0.21	0.43	0.85	1.28	2.1	6.4	21.3
		Vertikal VFOV		0.022	0.043	0.065	0.11	0.21	0.43	0.85	1.28	2.1	6.4	21.3
		Diagonal DFOV		0.031	0.061	0.092	0.15	0.3	0.6	1.2	1.81	3	9	30.1
	Size of the single pixel [mm]	IFOV		0.3	0.5	0.8	1.3	2.7	5.3	10.6	15.9	26.6	79.7	265.6
30°	Enlargement of total measuring field at object level [m]	Horizontal HFOV	0.028	0.056	0.111	0.167	0.279	0.557	1.115	2.23	3.346	5.6	16.7	55.8
		Vertikal VFOV	0.028	0.056	0.111	0.167	0.279	0.557	1.115	2.23	3.346	5.6	16.7	55.8
		Diagonal DFOV	0.039	0.079	0.158	0.24	0.39	0.79	1.58	3.15	4.7	7.9	23.7	78.9
	Size of the single pixel [mm]	IFOV	0.33	0.67	1.33	2	3.33	6.67	13.33	26.67	40	66.67	200	666.67
80°	Enlargement of total measuring field at object level [m]	Horizontal HFOV	0.09	0.174	0.343	0.509	0.884	1.682	3.357	6.708	10.058	16.8	50.3	167.5
		Vertikal VFOV	0.09	0.174	0.343	0.509	0.884	1.682	3.357	6.708	10.058	16.8	50.3	167.5
		Diagonal DFOV	0.127	0.246	0.483	0.72	1.19	2.38	4.75	9.49	14.2	23.7	71.1	236.9
	Size of the single pixel [mm]	IFOV	0.08	1.6	3.2	4.7	7.8	15.5	31	61.9	92.8	154.6	463.7	154.5

For distances smaller than the minimum measuring distance, the measuring accuracy can be outside the specification.



As an alternative to the table, you can use the optris [Optikkalkulator](https://www.optris.de/optikkalkulator-fuer-waermebildkameras):  
<https://www.optris.de/optikkalkulator-fuer-waermebildkameras>



Or the free optris [Optikkalkulator App](https://play.google.com/store/apps/details?id=com.optris.calculator&hl=de&gl=US):  
<https://play.google.com/store/apps/details?id=com.optris.calculator&hl=de&gl=US>

