Main Specifications of CA-410 Probes

KONICA MINOLTA

			High Sensitivity Probe		Normal Probe	High Luminance Probe	Normal Probe	High Luminance Probe	Mini Probe	High Luminance Probe	CIE 170-2: 2015 Supported Probe*7	
			CA-VP410 	CA-VP427 	CA-P410 	CA-P410H	CA-P427 	CA-P427H	CA-MP410 	CA-MP410H	CA-P410C 	CA-P427C 
Measurement area			Ø 10 mm	Ø 27 mm	Ø 10 mm	Ø 10 mm	Ø 27 mm	Ø 27 mm	Ø 10 mm	Ø 10 mm	Ø 10 mm	Ø 27 mm
Acceptance angle			± 8.5°	± 2.5°	± 5°	± 5°	± 2.5°	± 2.5°	± 5°	± 5°	± 5°	± 2.5°
Accuracy guaranteed measurement distance			30 ± 5 mm	30 ± 10 mm	30 ± 5 mm	30 ± 5 mm	30 ± 10 mm	30 ± 10 mm	10 ± 5 mm	10 ± 5 mm	30 ± 5 mm	30 ± 10 mm
Display range	Luminance		0.0001 to 3,000 cd/m^2	0.0001 to 3,000 cd/m^2	0.0001 to 5,000 cd/m^2	0.0001 to 30,000 cd/m^2	0.0001 to 5,000 cd/m^2	0.0001 to 30,000 cd/m^2	0.0001 to 5,000 cd/m^2	0.0001 to 30,000 cd/m^2	0.0001 to 5,000 cd/m^2	0.0001 to 5,000 cd/m^2
	Chromaticity		Displayed in 4 digits	Displayed in 4 digits	Displayed in 4 digits	Displayed in 4 digits	Displayed in 4 digits	Displayed in 4 digits	Displayed in 4 digits	Displayed in 4 digits	Displayed in 4 digits	Displayed in 4 digits
Luminance	Accuracy guaranteed range		0.001 to 3,000 cd/m^2	0.001 to 3,000 cd/m^2	0.01 to 5,000 cd/m^2	0.1 to 30,000 cd/m^2	0.001 to 5,000 cd/m^2	0.01 to 30,000 cd/m^2	0.01 to 5,000 cd/m^2	0.1 to 30,000 cd/m^2	0.01 to 5,000 cd/m^2	0.001 to 5,000 cd/m^2
	Accuracy (for white)*1, *3	> 0.001 cd/m^2	± 9 %	± 9 %	---	---	± 9 %	---	---	---	---	± 9 %
		> 0.01 cd/m^2	± 2.5 %	± 2 %	± 2.5 %	---	± 2 %	± 9 %	± 2.5 %	---	± 2.5 %	± 2 %
		> 0.1 cd/m^2	± 2 %	± 1.5 %	± 2 %	± 2.5 %	± 1.5 %	± 2 %	± 2 %	± 2.5 %	± 2 %	± 1.5 %
		> 1 cd/m^2	± 2 %	± 1.5 %	± 2 %	± 2 %	± 1.5 %	± 1.5 %	± 2 %	± 2 %	± 2 %	± 1.5 %
		> 10 cd/m^2	± 1.5 %	± 1.5 %	± 1.5 %	± 2 %	± 1.5 %	± 1.5 %	± 1.5 %	± 2 %	± 1.5 %	± 1.5 %
		> 100 cd/m^2	± 1.5 %	± 1.5 %	± 1.5 %	± 1.5 %	± 1.5 %	± 1.5 %	± 1.5 %	± 1.5 %	± 1.5 %	± 1.5 %
	Repeatability (2σ)*1 AUTO	> 0.001 cd/m^2	7%	10 %	---	---	10%	---	---	---	---	10 %
		> 0.01 cd/m^2	1%	1%	2%	---	1%	10 %	2.4 %	---	2%	1 %
		> 0.1 cd/m^2	0.25 %	0.25 %	0.60 %	2 %	0.40 %	1 %	0.70 %	2.4 %	0.60 %	0.40 %
		> 1 cd/m^2	0.10 %	0.10 %	0.20 %	0.60 %	0.10 %	0.40 %	0.25 %	0.70 %	0.20 %	0.10 %
		> 10 cd/m^2	0.10 %	0.10 %	0.10 %	0.20 %	0.10 %	0.10 %	0.12 %	0.25 %	0.10 %	0.10 %
		> 100 cd/m^2	0.10 %	0.10 %	0.10 %	0.10 %	0.10 %	0.10 %	0.10 %	0.12 %	0.10 %	0.10 %
Chromaticity	Accuracy guaranteed luminance range		0.01 to 3,000 cd/m^2	0.01 to 3,000 cd/m^2	0.01 to 5,000 cd/m^2	0.1 to 30,000 cd/m^2	0.01 to 5,000 cd/m^2	0.1 to 30,000 cd/m^2	0.01 to 5,000 cd/m^2	0.1 to 30,000 cd/m^2	0.01 to 5,000 cd/m^2	0.01 to 5,000 cd/m^2
	Accuracy (for white)*1, *3	> 0.01 cd/m^2	± 0.003	± 0.003	± 0.006	---	± 0.003	---	± 0.006	---	± 0.006	± 0.003
		> 0.1 cd/m^2	± 0.002	± 0.002	± 0.002	± 0.006	± 0.002	± 0.003	± 0.002	± 0.006	± 0.002	± 0.002
		> 1 cd/m^2	± 0.002	± 0.002	± 0.002	± 0.002	± 0.002	± 0.002	± 0.002	± 0.002	± 0.002	± 0.002
		> 10 cd/m^2	± 0.002	± 0.002	± 0.002	± 0.002	± 0.002	± 0.002	± 0.002	± 0.002	± 0.002	± 0.002
		> 100 cd/m^2	± 0.002	± 0.002	± 0.002	± 0.002	± 0.002	± 0.002	± 0.002	± 0.002	± 0.002	± 0.002
	At 100 cd/m^2 (for monochrome)*2	100 cd/m^2	± 0.003	± 0.003	± 0.003	± 0.003	± 0.003	± 0.003	± 0.003	± 0.003	± 0.003	± 0.003
	Repeatability (2σ)*1 AUTO	> 0.01 cd/m^2	0.0020	0.0030	0.0070	---	0.0035	---	0.0085	---	0.0070	0.0035
		> 0.1 cd/m^2	0.0008	0.0008	0.0020	0.0070	0.0015	0.0035	0.0025	0.0085	0.0020	0.0015
		> 1 cd/m^2	0.0003	0.0003	0.0008	0.0020	0.0004	0.0015	0.0010	0.0025	0.0008	0.0004
		> 10 cd/m^2	0.0002	0.0002	0.0005	0.0008	0.0003	0.0004	0.0006	0.0010	0.0005	0.0003
		> 100 cd/m^2	0.0002	0.0002	0.0003	0.0005	0.0002	0.0003	0.0004	0.0006	0.0003	0.0002
Flicker (CA-310 Mode)*6 Flicker (Contrast)	Measurement luminance range		---	---	15 to 3,000 cd/m^2	90 to 18,000 cd/m^2	5 to 1,500 cd/m^2	30 to 9,000 cd/m^2	15 to 3,000 cd/m^2	90 to 18,000 cd/m^2	15 to 3,000 cd/m^2	5 to 1,500 cd/m^2
	Measurement target (Flicker frequency)		---	---	0.25 to 65 Hz	0.25 to 65 Hz	0.25 to 65 Hz	0.25 to 65 Hz	0.25 to 65 Hz	0.25 to 65 Hz	0.25 to 65 Hz	0.25 to 65 Hz
	Accuracy	30 Hz, AC/DC 10% sine wave	---	---	± 0.4%	± 0.4%	± 0.4%	± 0.4%	± 0.4%	± 0.4%	± 0.4%	± 0.4%
		60 Hz, AC/DC 10% sine wave	---	---	± 0.7%	± 0.7%	± 0.7%	± 0.7%	± 0.7%	± 0.7%	± 0.7%	± 0.7%
	Repeatability (2σ)	20-65 Hz, AC/DC 10% sine wave	---	---	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%
Flicker (CA-310 Mode)*6 Flicker (JEITA)	Measurement luminance range		---	---	15 to 3,000 cd/m^2	90 to 18,000 cd/m^2	5 to 1,500 cd/m^2	30 to 9,000 cd/m^2	15 to 3,000 cd/m^2	90 to 18,000 cd/m^2	15 to 3,000 cd/m^2	5 to 1,500 cd/m^2
	Measurement target (Flicker frequency)		---	---	0.42 to 65 Hz	0.42 to 65 Hz	0.42 to 65 Hz	0.42 to 65 Hz	0.42 to 65 Hz	0.42 to 65 Hz	0.42 to 65 Hz	0.42 to 65 Hz
	Accuracy	30 Hz, AC/DC 4% sine wave	---	---	± 0.35dB	± 0.35dB	± 0.35dB	± 0.35dB	± 0.35dB	± 0.35dB	± 0.35dB	± 0.35dB
		30 Hz, AC/DC 1.2% sine wave	---	---	± 0.35dB	---	± 0.35dB	---	± 0.35dB	---	± 0.35dB	± 0.35dB
	Repeatability (2σ)	30 Hz, AC/DC 4% sine wave	---	---	0.1dB	0.1dB	0.1dB	0.1dB	0.1dB	0.1dB	0.1dB	0.1dB
		30 Hz, AC/DC 1.2% sine wave	---	---	0.3dB	---	0.3dB	---	0.3dB	---	0.3dB	0.3dB
XYZ (Wide Frequency Mode)*6 Flicker (Contrast)	Measurement luminance range		15 to 3,000 cd/m^2	5 to 3,000 cd/m^2	15 to 5,000 cd/m^2	90 to 30,000 cd/m^2	5 to 5,000 cd/m^2	30 to 30,000 cd/m^2	15 to 5,000 cd/m^2	90 to 30,000 cd/m^2	15 to 5,000 cd/m^2	5 to 5,000 cd/m^2
	Measurement target (Flicker frequency)		0.25 to 200 Hz	0.25 to 200 Hz	0.25 to 200 Hz	0.25 to 200 Hz	0.25 to 200 Hz	0.25 to 200 Hz	0.25 to 200 Hz	0.25 to 200 Hz	0.25 to 200 Hz	0.25 to 200 Hz
	Accuracy	30 Hz, AC/DC 10% sine wave	± 0.4 %	± 1.1 %	± 0.7 %	± 0.7 %	± 1.2 %	± 1.2 %	± 0.9 %	± 0.9 %	± 0.7 %	± 1.2 %
		60 Hz, AC/DC 10% sine wave	± 0.7 %	± 1.7 %	± 1.1 %	± 1.1 %	± 1.7 %	± 1.7 %	± 1.3 %	± 1.3 %	± 1.1 %	± 1.7 %
	Repeatability (2σ)	20-65 Hz, AC/DC 10% sine wave	0.3 %	1.6 %	1.0 %	1.0 %	1.7 %	1.7 %	1.3 %	1.3 %	1.0 %	1.7 %
XYZ (Wide Frequency Mode)*6 Flicker (JEITA)	Measurement luminance range		15 to 2,000 cd/m^2	5 to 3,000 cd/m^2	15 to 5,000 cd/m^2	90 to 30,000 cd/m^2	5 to 4,500 cd/m^2	30 to 27,000 cd/m^2	15 to 5,000 cd/m^2	90 to 30,000 cd/m^2	15 to 5,000 cd/m^2	5 to 4,500 cd/m^2
	Measurement target (Flicker frequency)		0.42 to 200 Hz	0.42 to 200 Hz	0.42 to 200 Hz	0.42 to 200 Hz	0.42 to 200 Hz	0.42 to 200 Hz	0.42 to 200 Hz	0.42 to 200 Hz	0.42 to 200 Hz	0.42 to 200 Hz
	Accuracy	30 Hz, AC/DC 4% sine wave	± 0.35 dB	± 0.35 dB	± 0.35 dB	± 0.35 dB	± 0.35 dB	± 0.35 dB	± 0.35 dB	± 0.35 dB	± 0.35 dB	± 0.35 dB
		30 Hz, AC/DC 1.2% sine wave	± 0.35 dB	± 0.35 dB	± 0.35 dB	---	± 0.35 dB	---	± 0.35 dB	---	± 0.35 dB	± 0.35 dB
	Repeatability (2σ)	30 Hz, AC/DC 4% sine wave	0.1 dB	0.4 dB	0.3 dB	0.3 dB	0.4 dB	0.4 dB	0.3 dB	0.3 dB	0.3 dB	0.4 dB
		30 Hz, AC/DC 1.2% sine wave	0.3 dB	1.4 dB	0.9 dB	---	1.5 dB	---	1.2 dB	---	0.9 dB	1.5 dB
XYZ (Wide Frequency Mode)*6 Waveform	Measurement luminance range		1 to 2,500 cd/m^2	1 to 3,000 cd/m^2	1 to 5,000 cd/m^2	6 to 30,000 cd/m^2	1 to 5,000 cd/m^2	6 to 30,000 cd/m^2	1 to 5,000 cd/m^2	6 to 30,000 cd/m^2	1 to 5,000 cd/m^2	1 to 5,000 cd/m^2
	Sampling frequency		3 kHz	3 kHz	3 kHz	3 kHz	3 kHz	3 kHz	3 kHz	3 kHz	3 kHz	3 kHz
Accuracy guaranteed measurement speed *4	Lvxy	AUTO	1 time/sec (> 0.001 cd/m^2) 5 times/sec (> 0.15 cd/m^2) 20 times/sec (> 2 cd/m^2)	1 time/sec (> 0.001 cd/m^2) 5 times/sec (> 0.15 cd/m^2) 20 times/sec (> 2 cd/m^2)	1 time/sec (> 0.01 cd/m^2) 5 times/sec (> 0.15 cd/m^2) 20 times/sec (> 2 cd/m^2)	1 time/sec (> 0.1 cd/m^2) 5 times/sec (> 0.9 cd/m^2) 20 times/sec (> 12 cd/m^2)	1 time/sec (> 0.001 cd/m^2) 5 times/sec (> 0.15 cd/m^2) 20 times/sec (> 2 cd/m^2)	1 time/sec (> 0.01 cd/m^2) 5 times/sec (> 0.9 cd/m^2) 20 times/sec (> 12 cd/m^2)	1 time/sec (> 0.01 cd/m^2) 5 times/sec (> 0.15 cd/m^2) 20 times/sec (> 2 cd/m^2)	1 time/sec (> 0.1 cd/m^2) 5 times/sec (> 0.9 cd/m^2) 20 times/sec (> 12 cd/m^2)	1 time/sec (> 0.01 cd/m^2) 5 times/sec (> 0.15 cd/m^2) 20 times/sec (> 2 cd/m^2)	1 time/sec (> 0.001 cd/m^2) 5 times/sec (> 0.15 cd/m^2) 20 times/sec (> 2 cd/m^2)
	Flicker (Contrast)		20 times/sec	20 times/sec	20 times/sec	20 times/sec	20 times/sec	20 times/sec	20 times/sec	20 times/sec	20 times/sec	20 times/sec
	Flicker (JEITA)		0.5 times/sec (at 1HzPitch), 2.5 times/sec (at 10 HzPitch)	0.5 times/sec (at 1HzPitch), 2.5 times/sec (at 10 HzPitch)	0.5 times/sec (at 1HzPitch), 2.5 times/sec (at 10 HzPitch)	0.5 times/sec (at 1HzPitch), 2.5 times/sec (at 10 HzPitch)	0.5 times/sec (at 1HzPitch), 2.5 times/sec (at 10 HzPitch)	0.5 times/sec (at 1HzPitch), 2.5 times/sec (at 10 HzPitch)	0.5 times/sec (at 1HzPitch), 2.5 times/sec (at 10 HzPitch)	0.5 times/sec (at 1HzPitch), 2.5 times/sec (at 10 HzPitch)	0.5 times/sec (at 1HzPitch), 2.5 times/sec (at 10 HzPitch)	0.5 times/sec (at 1HzPitch), 2.5 times/sec (at 10 HzPitch)
Measurement synchronization mode			NTSC, PAL, EXT, UNIV, INT, MANU (4 ms to 4 s)	NTSC, PAL, EXT, UNIV, INT, MANU (4 ms to 4 s)	NTSC, PAL, EXT, UNIV, INT, MANU (4 ms to 4 s)	NTSC, PAL, EXT, UNIV, INT, MANU (4 ms to 4 s)	NTSC, PAL, EXT, UNIV, INT, MANU (4 ms to 4 s)	NTSC, PAL, EXT, UNIV, INT, MANU (4 ms to 4 s)	NTSC, PAL, EXT, UNIV, INT, MANU (4 ms to 4 s)	NTSC, PAL, EXT, UNIV, INT, MANU (4 ms to 4 s)	NTSC, PAL, EXT, UNIV, INT, MANU (4 ms to 4 s)	NTSC, PAL, EXT, UNIV, INT, MANU (4 ms to 4 s)
Measurement speed mode			AUTO, LTD. AUTO, SLOW, FAST	AUTO, LTD. AUTO, SLOW, FAST	AUTO, LTD. AUTO, SLOW, FAST	AUTO, LTD. AUTO, SLOW, FAST	AUTO, LTD. AUTO, SLOW, FAST	AUTO, LTD. AUTO, SLOW, FAST	AUTO, LTD. AUTO, SLOW, FAST	AUTO, LTD. AUTO, SLOW, FAST	AUTO, LTD. AUTO, SLOW, FAST	AUTO, LTD. AUTO, SLOW, FAST
Measurement target (Vertical synchronization frequency)			0.5 to 240 Hz (luminance and chromaticity)	0.5 to 240 Hz (luminance and chromaticity)	0.5 to 240 Hz (luminance and chromaticity) 0.5 to 130 Hz (flicker)	0.5 to 240 Hz (luminance and chromaticity) 0.5 to 130 Hz (flicker)	0.5 to 240 Hz (luminance and chromaticity) 0.5 to 130 Hz (flicker)	0.5 to 240 Hz (luminance and chromaticity) 0.5 to 130 Hz (flicker)	0.5 to 240 Hz (luminance and chromaticity) 0.5 to 130 Hz (flicker)	0.5 to 240 Hz (luminance and chromaticity) 0.5 to 130 Hz (flicker)	0.5 to 240 Hz (luminance and chromaticity) 0.5 to 130 Hz (flicker)	0.5 to 240 Hz (luminance and chromaticity) 0.5 to 130 Hz (flicker)
User calibration memory channel			99 channels	99 channels	99 channels	99 channels	99 channels	99 channels	99 channels	99 channels	99 channels	99 channels
Interface	Communication		USB2.0, RS-232C	USB2.0, RS-232C	USB2.0, RS-232C	USB2.0, RS-232C	USB2.0, RS-232C	USB2.0, RS-232C	USB2.0, RS-232C	USB2.0, RS-232C	USB2.0, RS-232C	USB2.0, RS-232C
	Trigger		In & Out [5V]	In & Out [5V]	In & Out [5V]	In & Out [5V]	In & Out [5V]	In & Out [5V]	In & Out [5V]	In & Out [5V]	In & Out [5V]	In & Out [5V]
Size (mm)			47 x 47 x 226.5	47 x 47 x 190.5	42 x 42 x 173.5	42 x 42 x 173.5	42 x 42 x 139.7	42 x 42 x 139.7	42 x 42 x 77	42 x 42 x 77	42 x 42 x 173.5	42 x 42 x 139.7
Weight			570 g (including mount)	510 g (including mount)	280 g (including mount)	280 g (including mount)	270 g (including mount)	270 g (including mount)	200 g (including mount)	200 g (including mount)	280 g (including mount)	270 g (including mount)
Power supply			DC 5 V (input from USB bus power line or RS communication connector)									
Operation temperature/humidity range*5			10 to 35°C, relative humidity 85% or less with no condensation									
Storage temperature/humidity range			0 to 45°C, relative humidity 85% or less (at 35°C) with no condensation									
Accessories	Standard		PC Software for Color Analyzer CA-S40, SDK for Color Analyzer CA-SDK2, USB Cable for Probe-PC (2 m) IF-A28, Hood for Probe, Lens Cap for Probe									
	Optional		Conversion Cable IF-A29, BNC Conversion Cable IF-A35									

*1: Measured under Konica Minolta's standard light source (6,500K).
*2: Luminance for monochrome is measured when reading of luminance for white is 100 cd/m^2.
*3: Temperature 23°C/±2°C, relative humidity 40%±10%

*4: In NTSC synchronization mode using USB with one probe
*5: Reading fluctuation (compared to reference reading at 23°C, 40% RH): Luminance: ±2% for white; Chromaticity (at 100 cd/m^2): ±0.002 for white, ±0.003 for monochrome
*6: "Flicker (CA-310 Mode)" and "XYZ (Wide Frequency Mode)" are mode names for PC Software CA-S40. "XYZ (Wide Frequency Mode)" can only be used when no CA-DP40 data processor is connected.

*7: The spectral sensitivities of probes conforming to CIE 170-2:2015 are different from those defined for the CIE 1931 color-matching functions; therefore, displayed values for luminance and chromaticity will be different from those calculated based on the CIE 1931 color-matching fuctions.
* Unless otherwise specified, specifications are given for conditions established by Konica Minolta.

Main Specifications of CA-410 Probes

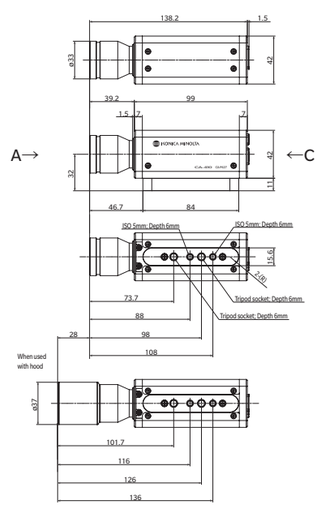
			Small Spot Probe		LWD Probe
			CA-VP402 	CA-VP404 	CA-VP410T 
Measurement area			Ø 2.1 mm	Ø 4 mm	Approx. Ø 10 mm
Acceptance angle			±10°	±8.5°	± 4°
Accuracy guaranteed measurement distance			28 ± 2 mm	30 ± 2 mm	200 ± 2 mm
Display range	Luminance		0.0001 to 6,000 cd/m²	0.0001 to 12,000 cd/m²	0.0001 to 12,000 cd/m²
	Chromaticity		Displayed in 4 digits	Displayed in 4 digits	Displayed in 4 digits
Luminance	Accuracy guaranteed range		0.002 to 6,000 cd/m²	0.004 to 12,000 cd/m²	0.004 to 12,000 cd/m²
	Accuracy (for white)*1, *3	> 0.001 cd/m²	± 9 % (> 0.002 cd/m²)	± 9 % (>0.004 cd/m²)	± 9 % (>0.004 cd/m²)
		> 0.01 cd/m²	± 9 %	± 9 %	± 9 %
		> 0.1 cd/m²	± 3 %	± 3 %	± 3 %
		> 1 cd/m²	± 3 %	± 3 %	± 3 %
		> 10 cd/m²	± 2.5 %	± 2.5 %	± 2.5 %
		> 100 cd/m²	± 2 %	± 2 %	± 2 %
	Repeatability (2σ)*1 AUTO	> 0.001 cd/m²	10 % (> 0.002 cd/m²)	10 % (>0.004 cd/m²)	10 % (>0.004 cd/m²)
		> 0.01 cd/m²	10 %	5 %	5 %
		> 0.1 cd/m²	1 %	0.5 %	0.5 %
		> 1 cd/m²	0.25 %	0.20 %	0.20 %
		> 10 cd/m²	0.10 %	0.10 %	0.10 %
		> 100 cd/m²	0.10 %	0.10 %	0.10 %
Chromaticity	Accuracy guaranteed luminance range		0.02 to 6,000 cd/m²	0.04 to 12,000 cd/m²	0.04 to 12,000 cd/m²
	Accuracy (for white) *1, *3	> 0.01 cd/m²	± 0.004 (> 0.02 cd/m²)	± 0.004 (>0.04 cd/m²)	± 0.004 (>0.04 cd/m²)
		> 0.1 cd/m²	± 0.004	± 0.004	± 0.004
		> 1 cd/m²	± 0.003	± 0.003	± 0.003
		> 10 cd/m²	± 0.003	± 0.003	± 0.003
		> 100 cd/m²	± 0.002	± 0.002	± 0.002
	At 100 cd/m² (for monochrome)*2	100 cd/m²	± 0.003	± 0.003	± 0.003
	Repeatability (2σ)*1 AUTO	> 0.01 cd/m²	0.0030 (> 0.02 cd/m²)	0.0030 (>0.04 cd/m²)	0.0030 (>0.04 cd/m²)
		> 0.1 cd/m²	0.0030	0.0015	0.0015
		> 1 cd/m²	0.0008	0.0005	0.0005
		> 10 cd/m²	0.0003	0.0003	0.0003
		> 100 cd/m²	0.0002	0.0002	0.0002
Flicker (CA-310 Mode)*6	Flicker (Contrast) Measurement luminance range		---	---	---
	Measurement target (Flicker frequency)		---	---	---
	Accuracy	30 Hz, AC/DC 10% sine wave	---	---	---
		60 Hz, AC/DC 10% sine wave	---	---	---
	Repeatability (2σ)	20-65 Hz, AC/DC 10% sine wave	---	---	---
	Flicker (JEITA) Measurement luminance range		---	---	---
	Measurement target (Flicker frequency)		---	---	---
	Accuracy	30 Hz, AC/DC 4% sine wave	---	---	---
		30 Hz, AC/DC 1.2% sine wave	---	---	---
	Repeatability (2σ)	30 Hz, AC/DC 4% sine wave	---	---	---
		30 Hz, AC/DC 1.2% sine wave	---	---	---
XYZ (Wide Frequency Mode)*6	Flicker (Contrast) Measurement luminance range		35 to 6,000 cd/m²	20 to 12,000 cd/m²	20 to 12,000 cd/m²
	Measurement target (Flicker frequency)		0.25 to 200 Hz	0.25 to 200 Hz	0.25 to 200 Hz
	Accuracy	30 Hz, AC/DC 10% sine wave	± 1.1 %	± 1.1 %	± 1.1 %
		60 Hz, AC/DC 10% sine wave	± 1.7 %	± 1.7 %	± 1.7 %
	Repeatability (2σ)	20-65 Hz, AC/DC 10% sine wave	1.6 %	1.6 %	1.6 %
	Flicker (JEITA) Measurement luminance range		35 to 6,000 cd/m²	20 to 12,000 cd/m²	20 to 12,000 cd/m²
	Measurement target (Flicker frequency)		0.42 to 200 Hz	0.42 to 200 Hz	0.42 to 200 Hz
	Accuracy	30 Hz, AC/DC 4% sine wave	± 0.35 dB	± 0.35 dB	± 0.35 dB
		30 Hz, AC/DC 1.2% sine wave	± 0.35 dB	± 0.35 dB	± 0.35 dB
	Repeatability (2σ)	30 Hz, AC/DC 4% sine wave	0.4 dB	0.4 dB	0.4 dB
		30 Hz, AC/DC 1.2% sine wave	1.4 dB	1.4 dB	1.4 dB
	Waveform Measurement luminance range		7 to 6,000 cd/m²	4 to 12,000 cd/m²	4 to 12,000 cd/m²
	Sampling frequency		3 kHz	3 kHz	3 kHz
Accuracy guaranteed measurement speed *4	Lvxy	AUTO	0.16 times/sec (> 0.002 cd/m²) 1 time/sec (> 0.05 cd/m²)	1 time/sec (> 0.004 cd/m²)	1 time/sec (> 0.004 cd/m²)
			5 times/sec (> 1.5 cd/m²)	5 times/sec (> 0.6 cd/m²)	5 times/sec (> 0.6 cd/m²)
			20 times/sec (> 25 cd/m²)	20 times/sec (> 8 cd/m²)	20 times/sec (> 8 cd/m²)
	Flicker (Contrast)		20 times/sec	20 times/sec	20 times/sec
	Flicker (JEITA)		0.5 times/sec (at 1HzPitch), 2.5 times/sec (at 10 HzPitch)	0.5 times/sec (at 1HzPitch), 2.5 times/sec (at 10 HzPitch)	0.5 times/sec (at 1HzPitch), 2.5 times/ssec (at 10 HzPitch)
Measurement synchronization mode			NTSC, PAL, EXT, UNIV, INT, MANU (4 ms to 4 s)	NTSC, PAL, EXT, UNIV, INT, MANU (4 ms to 4 s)	NTSC, PAL, EXT, UNIV, INT, MANU (4 ms to 4 s)
Measurement speed mode			AUTO, LTD. AUTO, SLOW, FAST	AUTO, LTD. AUTO, SLOW, FAST	AUTO, LTD. AUTO, SLOW, FAST
Measurement target (Vertical synchronization frequency)			0.5 to 240 Hz (luminance and chromaticity)		0.5 to 240 Hz (luminance and chromaticity)
User calibration memory channel			99 channels	99 channels	99 channels
Interface	Communication		USB2.0, RS-232C	USB2.0, RS-232C	USB2.0, RS-232C
	Trigger		In & Out [5V]	In & Out [5V]	In & Out [5V]
Size (mm)			47 x 47 x 222.9	47 x 47 x 226.5	47 x 47 x 226.2
Weight			580 g (including mount)	570 g (including mount)	550 g (including mount)
Power supply			DC 5 V (input from USB bus power line or RS communication connector)		
Operation temperature/humidity range *5			10 to 35°C, relative humidity 85% or less with no condensation		
Storage temperature/humidity range			0 to 45°C, relative humidity 85% or less (at 35°C) with no condensation		
Accessories	Standard		PC Software for Color Analyzer CA-S40, SDK for Color Analyzer CA-SDK2, USB Cable for Probe-PC (2 m) IF-A28, Hood for Probe (Except CA-VP410T), Lens Cap for Probe		
	Optional		Conversion Cable IF-A29, BNC Conversion Cable IF-A35		

*1: Measured under Konica Minolta's standard light source (6,500K).
*2: Luminance for monochrome is measured when reading of luminance for white is 100 cd/m².
*3: Temperature 23°C/±2°C, relative humidity 40%±10%
*4: In NTSC synchronization mode using USB with one probe
*5: Reading fluctuation (compared to reference reading at 23°C, 40% RH): Luminance: ±2% for white; Chromaticity (at 100 cd/m²): ±0.002 for white, ±0.003 for monochrome
*6: "Flicker (CA-310 Mode)" and "XYZ (Wide Frequency Mode)" are mode names for PC Software CA-S40. "XYZ (Wide Frequency Mode)" can only be used when no CA-DP40 data processor is connected.

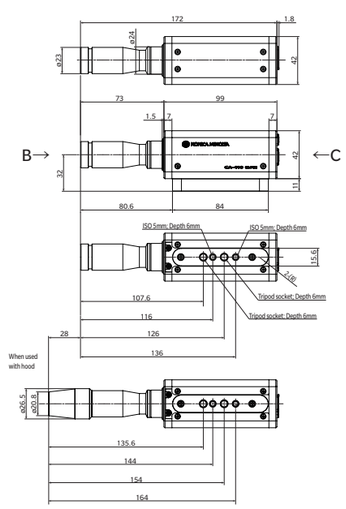
* Unless otherwise specified, specifications are given for conditions established by Konica Minolta.

Probe Dimensions (unit: mm)

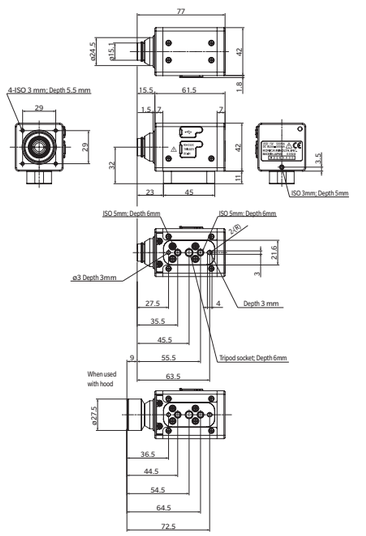
CA-P427 Ø27 Normal Probe
CA-P427H Ø27 High Luminance Probe
CA-P427C Ø27 Normal Probe



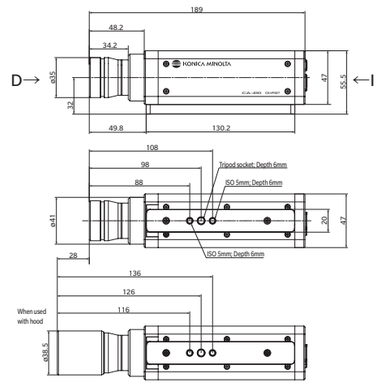
CA-P410 Ø10 Normal Probe
CA-P410H Ø10 High Luminance Probe
CA-P410C Ø10 Normal Probe



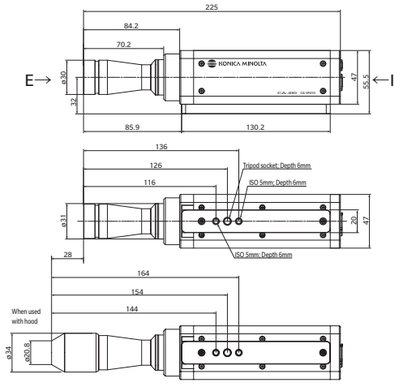
CA-MP410 Ø10 Mini Probe
CA-MP410H Ø10 Mini High Luminance Probe

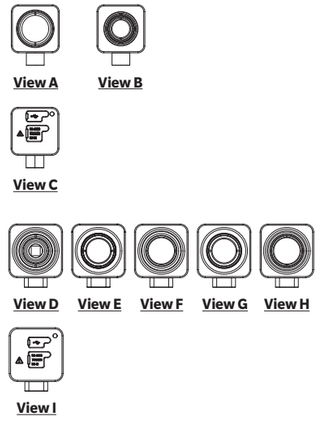


CA-VP427 Ø27 High Sensitivity Probe

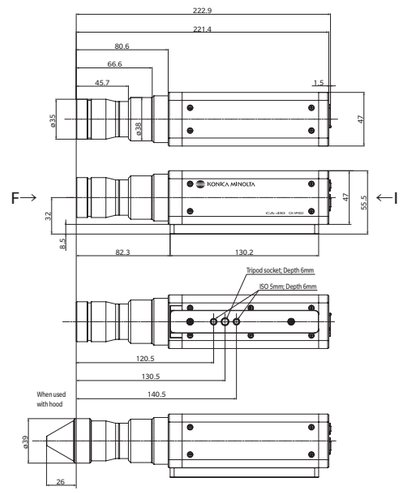


CA-VP410 Ø10 High Sensitivity Probe

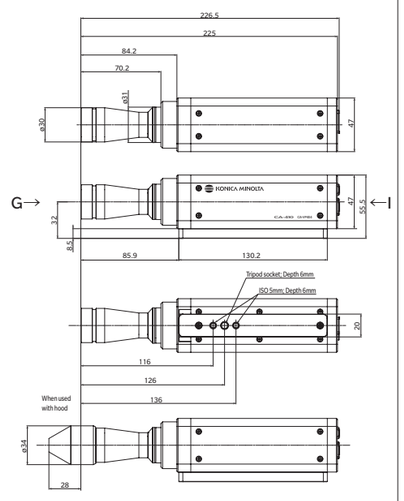




CA-VP402 Ø2 Small Spot Probe



CA-VP404 Ø4 Small Spot Probe



CA-VP410T Ø10 LWD Probe (200 mm)