

to **TechnoOptis Co., Ltd.**

Luminance Colorimeter BN-5AC



BM-5A series for next-generation!

BM-5AC is a high sensitivity luminance colorimeter combines high reliability, operability and high speed.

Feature

POINT.1 High speed measuring for ultra low luminance.

It can measure the luminance as ultra low as 0.005 cd/m² at about 2 second. Note: For measurement angle of 3 degree

POINT.2 Wide measurement area

Selectable 5 measurement angle 0.1° / 0.2° / 1° / 2° / 3° enable you to measure the luminance from small to wide area without attachment lens.

POINT.3 Analog output

The BM-5AC can connect to the recorder and the oscilloscope through analog output X2,Y, Z (selectable).

POINT.4 USB Interface

The BM-5AC is equipped with USB and RS-232C interface.

Response speed of analog output

Connecting to Oscilloscope through analog output, The BM-5AC can measure build up time and fall down time of flicker light.

Example) Rise and fall response characteristics, frequency, etc. of a flashing light source.

	NORMAL	FAST
Range 1	30ms	5ms
Range 2	30ms	0.5ms
Range 3	30ms	0.05ms
Range 4	30ms	0.5ms
Range 5	30ms	0.05ms



The response speed means the time that it takes analog output from the instrument to reach 90% of the peak value, when measuring an LED driven by a square wave from a function generator. •Output impedance is approximately 100Ω.

Recording instrument must have Input impedance of $10k\Omega$ or above. Output voltage 0 - 4.0V

*The response speed in the table above is the time that it takes analog output from the instrument to reach 90% of the peak value, when measuring an LED driven by a square wave from a function generator. the peak

Usage

For measurement of luminance, chromaticity and color temperature, for example; optical characteristic test, Interior panel for automobile, Speed meter for automobile, Fluorescent substance.









Speed meter



Mobile phone















Units: mm

Specification

Specification						. 1		
Optical system	Objective lens : f=80mm F2.5 / Eyepiece lens : View field 5°, Diopter adjustment range ± 5 diopter							
Spectral sensitivity	Similar to CIE19	931 color mate	ching function					
Photo detector	Photomultiplie	Photomultiplier tube						
Measurement angle	3° / 2° / 1° / 0.2° / 0.1° (Selectable)							
Measurement distance	350mm to ∞							
			Measureme	nt distance (n	nm)			
	Measurement angle	350	500	1,000	5,000	10,000		
	3°	15.0	23.1	49.2	255	510		
Measurement area	2°	10.0	15.4	32.8	169	341		
Diameter (mmø)	1°	5.0	7.7	16.4	85	170		
	0.2°	1.0	1.5	3.3	17	34		
	0.1°	0.5	0.8	1.6	8	17		
Measurable range	0.00005 to 1,20	.00005 to 1,200,000 cd/m ²						
	Measurement angle		Luminar	nce (cd/m²)				
	3°		0.005 to	1,500cd/m ²				
Luminance range	2°		0.01 to 3	3,000cd/m ²				
for guaranteed	1°		0.04 to 1	2,000cd/m ²				
accuracy	0.2°		1 to 300	.000cd/m ²				
·	0.1°		4 to 1.20	0.000cd/m ²				
Accuracy	•Luminance : +	4% (for stand	ard source A)	-,,				
	Chromaticity1	· dx dy Withir	n +0 005 (Auto	range for star	ndard source	A)		
	Chromaticity?	· dx dy Withir	1 ±0.008 (0-55	Y-48 A-73B IRA-	05 T-44 R-61 R-	46 V-44 G-54)		
	For a combine	ation of the st	andard source	A and the nex	t colored alas	s		
	when COLOR		is applied	A and the nex	t colored glas	,5,		
Popostability *	Luminanco	ADJOSTINILINI	is applied.					
Repeatability	For a moasuri	na fold of 2 d	0.0000					
	Por a measuri	ng neiu or 5 u	egrees	0.025 cd/m ²	r about 0.000	(or loss		
	0.003 10 0.02	5CU/III : 2%C	11622	0.02500/11 0	above: 0.6%	o or iess		
	For a measurin	ig field of 2 de	egrees	0.05 1/ 3				
	0.01 to 0.05cd/m ² : 2% or less 0.05cd/m ² or above : 0.8% or less							
	For a measuri	ng field of 1 de	egrees	a a 1/ 2				
	0.04 to 0.2cd	d/m ² : 2% or le	ess	0.2cd/m ² or a	bove : 0.8% o	r less		
	For a measuring field of 0.2 degrees							
	1 to 5cd/m ²	: 2% or less		5cd/m ² or ab	ove : 0.8% or	less		
	For a measuri	ng field of 0.1	degrees					
	4 to 20cd/m	² : 2% or less		20cd/m ² or al	bove : 0.8% oi	r less		
	(2σ, Single mode, Auto range, for standard source A)							
	Chromaticity	xy 0.003 or le	ess					
	(2ơ, Single m	ode, Auto ran	ge, for standaı	rd source A)				
	measuring field 3°: 0.025cd/m ² or more measuring field 0.2°: 5cd/m ² or more					m ² or more		
	measuring field 2°: 0.05cd/m ² or more measuring field 0.1°: 20cd/m ² or more							
	measuring fie	d 1°: 0.2cd/m	² or more					
Measurement range	Auto / Manual	5 steps selecta	able					
Function	Luminance, CIE	1931 chroma	ticity coordina	tes, CIE1976 cł	nromaticity			
	coordinates, Tri	stimulus valu	e XYZ, Correla	ted color temp	erature and			
	Deviation, CIE1	976 L*a*b*, Ea	ab*±∆, CIE197	6 L*u*v*, Euv*:	±Δ			
Output	Analog output	(X ₂ , Y, Z), DC :	0 to 4V (One c	hannel change	eover type)			
	Digital output	Interface : US	B / RS-232C)					
Measurement time	About 2 seconds (Single measurement mode)							
Display	Dot matrix 20 characters x 4 lines with back light							
Interface	USB / RS-232C							
Power supply	Dedicated AC a	dapter						
Power consumption	Approximately	20 VA when u	ising an AC ad	apter				
Operating condition	Temperature : 0	Temperature : 0 to 40°C. Humidity : 85% R.H. or less (no condensation)						
Storage condition	Temperature : -	20 to 60°C. Hi	umidity : 85% I	R.H. or less (no	condensation	ר)		
External dimensions	Approv 355mm v 154mm v 212mm (LvWvD)							
Weight	Approx 3 6Kg (
	uminance and shr	maticity) writte	, n in this catalog is	s the specification	value by our st	andard light		

source and measurement conduton. "Due to the nature of the product, measurement error that is out of specification value may occur by the difference of the light source, measurement condition and measurement environment.



Some screens are simulated.
The specifications and external appearances of product in this catalogue may be changed without prior notice due to improvements.
The catalogue includes products that are sold separately.
The actual color of products may differ slightly from the catalogue due to lighting and printing conditions.

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SAFETY PRECAUTIONS



Make sure to carefully read the "Manual" to ensure that you use the product properly and safely. Always connect the instrument to the specified power supply voltage. Improper connection may cause a fire or electric shock.

For more information please visit our website.

Extra-cost option



Placing the attachment lens on the instrument's objective lens, the focal distance shorten and reduce the minimum measurement area.

•Attachment lens AL-6 / AL-11 / AL-12

(Specifications for Measuring Small Objects)

	Measurement angle	AL-6 Measurement distance : 43 to 57mm	AL-11 Measurement distance : 19.8 to 24.2mm	AL-12 Measurement distance : 165 to 197mm
Moscuromont	3°	2.91 to 4.14	1.76 to 2.18	4.83 to 5.91
diameter	2°	1.94 to 2.76	1.18 to 1.45	3.23 to 3.97
(mmø)	1°	0.97 to 1.38	0.59 to 0.72	1.61 to 1.97
	0.2°	0.20 to 0.27	0.12 to 0.14	0.32 to 0.40
	0.1°	0.10 to 0.13	0.06 to 0.07	0.16 to 0.20

*May change slightly according to the machining precision of the aperture mirror. *The measurement distance is the distance from the tip of the metal fixture on the instrument of the objective lens.



•White standard board WS-3 Uses when measuring object color and direction high

directivity light.

 Luminance factor : 90% or less (Incidence 0°, Observation 45°) Material : Barium sulfate (BaSO₄)

Dimension : Ø78mm, t=12.5mm
 Effective white surface : Ø40mm (Central portion)

•Fiber probe FP-3



Light guide Effective measuring angle 2°
 Measurement diameter : ø3 to 10mm Measurement distance : 31.0 to 84.9mm Fiber length :about 1m

ITV adapter IA-2

Adapter for connecting CCD camera (C mount, 1/2 inch) to the instrument.

•Mesh Filter MF-10 / MF-100

Uses when measuring the light which is over measurement range of the instrument.



Tripod 5N

The tripod 5N make collimation easy. Max height : 1835mm Min height : 585mm
 Length when stored : 810mm Leg stages : 3steps
 Weight : 4.7kg with tripod head

Standard package of BM-5AC

•BM-5AC main body1ea
•AC adapter1ea
•Analog output plug3ea
•CD-ROM (colorimetry software CS-900A / Instruction manual)1ea
•Quick manual1ea
•Carrying case1ea
•USB cable1ea
•Lens cap for objective lens1ea

