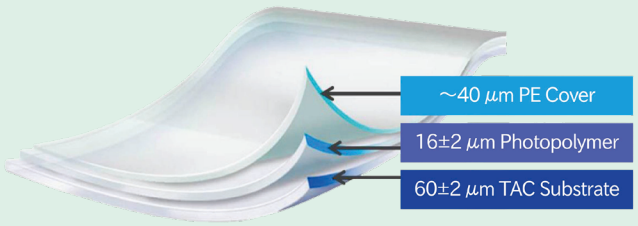


Bayfol®
HX 200
COLOR PHOTOPOLYMER
彩色全像片

[Product Specification]

Bayfol® HX 200 是一種光敏性、自顯影的光聚合物薄膜，可以製作成反射式或穿透式體積相位全像片。可以在 440 nm 至 680 nm 的可見光譜波長範圍內使用適當的雷射光進行記錄。對於全像片的顯影，不需額外加工，即不需要濕加工也不需要熱處理。

Bayfol® HX 200 由三層堆疊的基材、感光聚合物和保護性覆膜組成。基材爲 Triacetate（TAC）薄膜，保護層爲 Polyethylene（PE）薄膜。保護覆蓋薄膜可從光聚合物上移除。本產品可用於多種不同類型的體積全像（體積全像圖）。

Bayfol® HX 200 尺寸表 (片裝式)			
產品型號	每包數量 (片)	規格尺寸 (公分)	
TFS-HX200-1010	18	10	10
TFS-HX200-1015	18	10	15
TFS-HX200-1515	10	15	15
TFS-HX200-1520	10	15	20
TFS-HX200-2030	10	20	30
TFS-HX200-3030	10	30	30
TFS-HX200-3040	5	30	40

Bayfol® HX 200 尺寸表 (捲筒式)			
產品型號	每卷長度 (m)	每卷寬度 (cm)	每卷面積 (m^2)
TFR-HX200-1M30	1	30	0.3
TFR-HX200-10M30	10		3
TFR-HX200-15M30	15		4.5
TFR-HX200-25M30	25		7.5
TFR-HX200-50M30	50		15
TFR-HX200-100M30	100		30
TFR-HX200-150M30	150		45

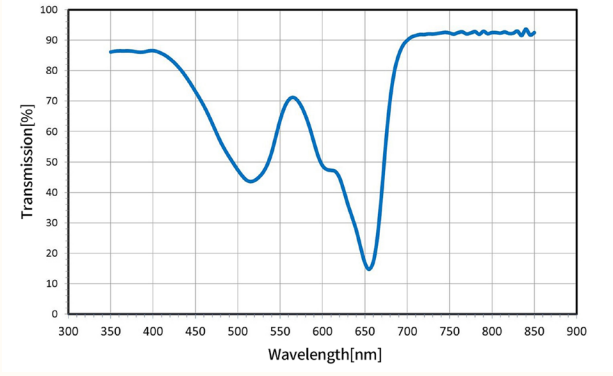
儲存條件 STORAGE

- 建議儲存環境溫度應保持在 15℃～ 25℃之間。
- 建議儲存環境相對濕度爲 45% ～ 55% 之間。
- 未記錄的光聚合物薄膜底片應避免照光、濕氣過重、高溫過熱和外在異物的影響。

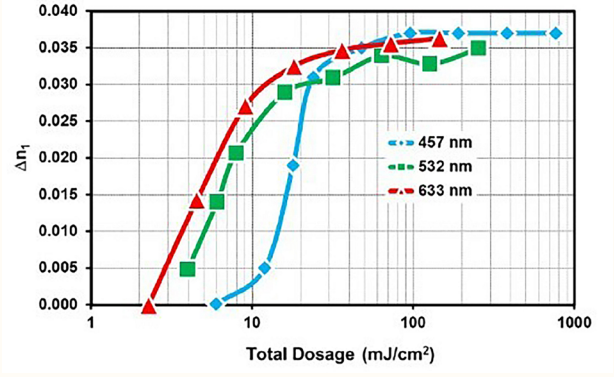
規格數據 PRODUCT SPECIFICATION

項目 (Property)	數值 (Value)	計量單位 (Unit)	方法 (Method)
一般特性 GENERAL PROPERTIES			
Typical Substrate Thickness	60±2	microns	acc. to ISO 4593, 23° C
Typical Photopolymer Thickness	16±2	microns	white light interferometer
Typical Cover Layer Thickness	40±2	microns	acc. to ISO 4593, 23° C
Density with Cover Foil	1.15	g/cm^3	ISO 1183, 20° C, Method C
光學特性 OPTICAL PROPERTIES			
Transmittance (unrecorded film, w/o cover foil)	See spectrum above	%	ASTM E 01348
Haze (after UV flood cure②)	< 2	%	ASTM D 1003
Index of Refraction nD of the Substrate	1.485		Prism coupler
Index of Refraction nD of the Photopolymer (unrecorded)	1.500		Prism coupler
Index of Refraction nD of the Photopolymer (after UV flood cure②)	1.505		Prism coupler
全像性能：Denisyuk 全像圖性能數據③ HOLOGRAPHIC PROPERTIES: DENISYUK HOLOGRAM PERFORMANCE DATA③			
Spectral Diffraction Efficiency η	> 95	%	ISO 17901-1, by transmittance of zeroorder transmitted wave
Spectral Bandwidth (full width at half maximum)	~ 15	nm	ISO 17901-1, by transmittance of zeroorder transmitted wave
Recording Dosage (needed to achieve above mentioned values)	~ 30	mJ/cm^2	Recording wavelength: λ = 532 nm; Power density: PR= 4.6 mW/cm^2
全像性能：反射全像性能數據④ HOLOGRAPHIC PROPERTIES: REFLECTION HOLOGRAM PERFORMANCE DATA④			
Maximum Refractive Index Modulation Δn_1 per Recording Wavelength λ			ISO 17901-2
λ = 633 nm	> 0.03		
λ = 532 nm	> 0.03		
λ = 457 nm	> 0.03		
Typical Recording Dosage Needed to Achieve above Δn_1 Values			ISO 17901-2
λ = 633 nm	~ 15	mJ/cm^2	Applied total dosage
λ = 532 nm	~ 20	mJ/cm^2	Applied total dosage
λ = 457 nm	~ 25	mJ/cm^2	Applied total dosage
收縮和光譜偏移 SHRINKAGE AND SPECTRAL SHIFT			
Effective Thickness Shrinkage (after recording and UV flood cure②)	~ 1.4	%	Reflection holograms
Spectral Shift (after recording and UV flood cure②)	~ -8	nm	Denisyuk holograms: Wavelength deviation between recording and reconstruction

① All values provide general information and are not part of the product specification. ② Curing is done by means of a Mercury lamp; Company: Hönle; Typ: MH-Strahler UV-400 H); dosage about 5,000-10,000 mJ/cm². ③ Holographic method: Denisyuk holograms Reflection holograms are recorded in a Denisyuk setup with an expanded plane-wave laser beam. The backside object is a plane mirror. Schematic figures of the setup are provided in the appendix. ④ Holographic method: Reflection holograms ISO 17901-2 method to measure the amplitude of refractive index modulation using the reflection hologram, using two expanded plane-wave laser beams. Typical total power density: 9-23 mW/cm². The beams are s-polarized. External angles of incidence are -22° (object beam) and +42° (reference beam) in air, tilted to normal direction. Dosage curves and schematic figures of the setup are provided in the appendix.



Spectral Curve



Index Modulation