

SAVER COMPACT HBM PLUS L90



VERİMLİLİK - EFFICIENCY
up to
**162+
lm/W**

ÇALIŞMA SICAKLIĞI - OPERATING TEMP.
**+55°C
-40°C**

GİRİŞ GERİLİMİ - INPUT VOLTAGE
**108-305
VAC**

GERİLİM DÜŞÜMÜ - SURGE PROTECTION
max.
10kV

RAL
9005

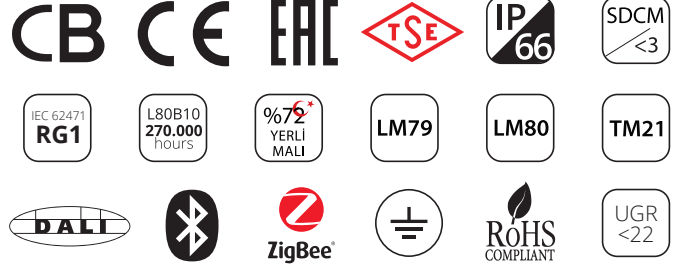
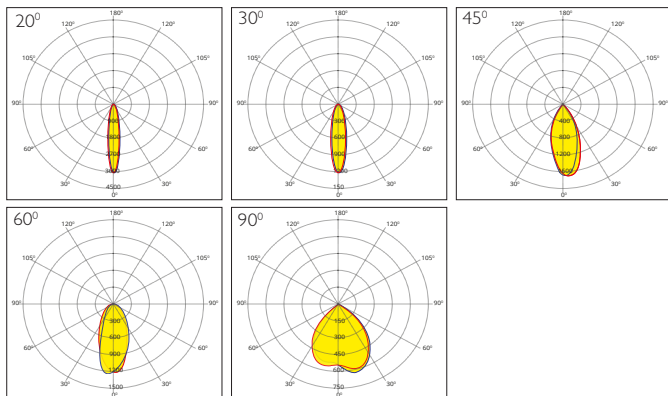
Teknik Veriler / Technical Data

SAVER COMPACT HBM PLUS L90

GÜÇ TÜKETİMİ / POWER CONSUMPTION	90W ±%5		
IŞIK AÇISI / BEAM ANGLE	20°	30°	45° / 60° / 90°
ARMATÜR LÜMENİ / FIXTURE LUMEN	14617 lm	13572 lm	14500 lm
ARMATÜR VERİMLİLİĞİ / FIXTURE EFFICACY	162 lm/W	151 lm/W	161 lm/W
LED MARKASI / LED BRAND	NICHIA / LUMILEDS / SEOUL		
RENK SICAKLIĞI / CCT	3000K-4000K-5000K-6500K		
GİRİŞ GERİLİM ARALIĞI / INPUT VOLTAGE	108-305VAC		
RENKSEL GERİVERİM / CRI	>70		
IP / IP	IP67		
GÜÇ FAKTÖRÜ / POWER FACTOR	>0,95		
ÜRÜN ÖMRÜ / PRODUCT LIFETIME	>100.000 hrs / >60.000 hrs		
KORUMA SINIFI / PROTECTION CLASS	CLASS I		
IK DERESESİ / IK RATING	IK08		
FOTOBİYOLOJİK SINIF / P.BIOLOGICAL CLASS	IEC 62471 - RG1		
GÖVDE MATERYALİ / BODY MATERIAL	ALÜMİNYUM / ALUMINIUM		
OPTİK KAPAK / OPTICAL COVER	TEMPERLİ CAM / TEMPERED GLASS		
BOYUTLAR / DIMENSIONS (LxWxH)	476 x 150 x 176mm		
AĞIRLIK / WEIGHT	4860gr		

*35°C ve üzeri ortam sıcaklıklarında teknik birimimize danışınız. Consult our technical department at +35°C and above ambient temperatures.

Işık Açıları / Beam Angles



Uygulama Alanları / Application Areas

- Üretim Alanı Aydınlatması • Depo Aydınlatması
- Alan Aydınlatması • Spor Merkezi Aydınlatması
- Industrial Plant Lighting • Warehouse Lighting
- Area Lighting • Sports Center Lighting

Özellikler / Specifications

- IP67 koruma
- Sert ve sıcak şartlarda çalışabilen tasarım
- LM80 ve TM21 standardına göre **60.000 saat** üzeri ömür
- **162+ lm/W**'a kadar ulaşan verimlilik
- Maksimum sürüş akımının **%64** altında LED akımı
- Şebeke dalgalanmalarına karşı koruma amaçlı **108-305VAC** giriş voltaj aralığı
- **10kV** gerilim dayanımı
- **-40°C / +55°C** çalışma sıcaklığı
- Özel tasarım 6063 alüminyum ekstrüzyon soğutucu
- Alüminyum PCB (2,0 w/mK)
- SMD PCB konektör
- Özel silikon conta
- Pirinç kablo rakoru ve pirinç havalandırma ventili
- EN 60598-1 standartlarına göre ölçümler
- IESNA-LM-79-08 standardına göre fotometrik ölçümler

Opsiyonel

- Sensör, dimleme, armatürler arası kablosuz iletişim
- I-10V, DALI otomasyon entegrasyonu
- Acil durum modu
- IP67 protection
- Engineered to operate in harsh and hot conditions
- Over **60.000** hours life according to LM80 and TM21 standard
- Up to **162+ lm/W** efficiency
- LED current **64% below** maximum driving current
- **108-305VAC** input voltage range against voltage fluctuation
- **10kV** surge protection
- Special design 6063 aluminium extrusion cooling system
- **-40°C / +55°C** operating temperature
- Aluminum PCB (2,0 W/mK)
- SMD PCB connector
- Special silicone gasket
- Brass cable gland and brass ventilation valve
- Measurements according to EN 60598-1 standards
- Photometric measurements according to IESNA-LM-79-08

Optional

- Sensor, dimming, wireless connection features
- I-10V, DALI automation integration
- Emergency mode

Diđer Güç ve Modeller / Other Options and Models

Saver Compact
HBM Plus

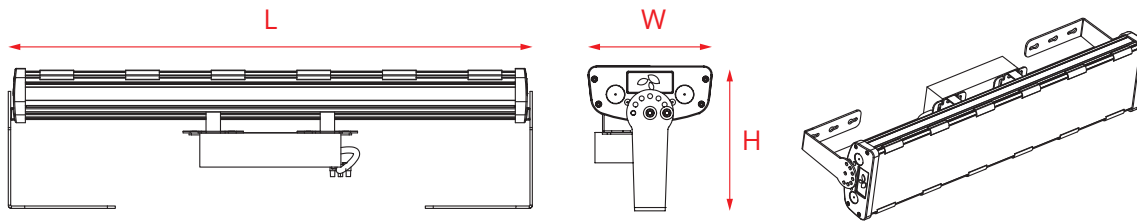
	W	lm	lm/W	lm	lm/W	lm	lm/W	LED	K	AC	CRI	IP	L (mm)	W (mm)	H (mm)	gr.
		▲ 20°		▲ 30°		▲ 45°/60°/90°										
L SERIES																
HBM PLUS L70	70	11555	165	10729	153	11463	164	LUMILEDS / NICHIA SEOUL	5000	108-305VAC	>70	IP67	476	150	176	4860
HBM PLUS L90	90	14617	162	13572	151	14500	161	LUMILEDS / NICHIA SEOUL	5000	108-305VAC	>70	IP67	476	150	176	4860
HBM PLUS L117	117	18740	160	17400	149	18590	159	LUMILEDS / NICHIA SEOUL	5000	108-305VAC	>70	IP67	476	150	176	4860
HBM PLUS L139	139	22249	160	20658	149	22071	159	LUMILEDS / NICHIA SEOUL	5000	108-305VAC	>70	IP67	662	150	176	6291
HBM PLUS L175	175	27530	157	25562	146	27310	156	LUMILEDS / NICHIA SEOUL	5000	108-305VAC	>70	IP67	662	150	176	6291
HBM PLUS L192	192	30178	157	28020	146	29936	157	LUMILEDS / NICHIA SEOUL	5000	108-305VAC	>70	IP67	662	150	176	6291
M																
HBM PLUS M242	242	36991	153	34347	142	36695	152	LUMILEDS / NICHIA SEOUL	5000	108-305VAC	>70	IP67	662	150	176	6291
		▲ 20°		▲ 30°		▲ 45°/60°/90°										
H SERIES																
HBM PLUS H96	96	14450	151	13417	140	14335	149	LUMILEDS / NICHIA SEOUL	5000	108-305VAC	>70	IP67	476	150	176	4860
HBM PLUS H106	106	-	-	-	-	14324	135	LUMILEDS / NICHIA SEOUL	5000	108-305VAC	>70	IP67	662	150	176	6291
HBM PLUS H148	148	22232	150	20643	139	22054	149	LUMILEDS / NICHIA SEOUL	5000	108-305VAC	>70	IP67	662	150	176	6291

Lümen Çarpım Tablosu / Lumen Multiplier Table

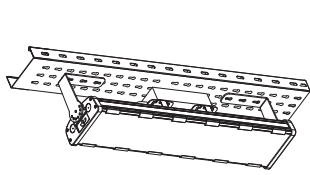
CRI	3000K	4000K	5000K	6500K
70	0,95	1,00	1,00	0,97
80	0,88	0,95	0,95	0,93
90	0,75	0,80	0,80	0,80

Güç ve lümen değerleri ±%5 tolerans içerisindedir.
Power and lumen values are within ± 5% tolerance.

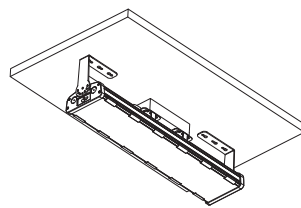
Ölçüler / Dimensions



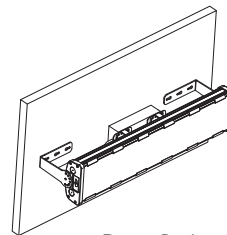
Bađlantı Şekilleri / Mounting Options



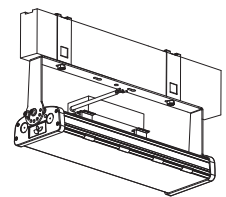
Kablo Tavası Bađlantısı
Cable Tray Mounted



Tavan Bađlantısı
Ceiling Mounted



Duvar Bađlantısı
Wall Mounted



Busbar Bađlantısı
Busbar Mounted

Ürün Resimleri / Product Photos



LM80 Rapor Sonuçları / LM80 Report Results

LUMILEDS

Normalized Flux Statistics for $I_f = 100\text{mA}$

	0hrs	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	alpha	B	L70
median =	1.0000	0.9982	0.9963	0.9953	0.9935	0.9917	0.9889	0.9870	0.9851	0.9823	0.9790			
Ts=Tair=85°C average =	1.0000	0.9986	0.9968	0.9952	0.9937	0.9916	0.9893	0.9870	0.9848	0.9825	0.9798	2.3496e-06	1.0034	153,225
st dev =	0.0000	0.0017	0.0019	0.0018	0.0019	0.0020	0.0020	0.0022	0.0026	0.0026	0.0027	TM-21 L70(10k) > 60,000hrs		
min =	1.0000	0.9962	0.9935	0.9925	0.9906	0.9880	0.9859	0.9835	0.9806	0.9784	0.9752			
max =	1.0000	1.0028	1.0018	0.9991	0.9982	0.9963	0.9935	0.9915	0.9896	0.9877	0.9852			

NICHIA

Data Set	Case Temperature [°C]	Ambient Temperature [°C]	Drive Current [mA]	Luminous Flux Maintenance at 10K hours [%]	Chromaticity Shift ($\Delta u'v'$) at 10K hours	TM-21 Projection $L_{70}(10K)$ [hours]	TM-21 Projection $L_{80}(10K)$ [hours]	TM-21 Projection $L_{90}(10K)$ [hours]
1	55	> 50	100	98.0	0.0024	> 60000	> 60000	> 60000
2	55	> 50	150	97.7	0.0023	> 60000	> 60000	> 60000
3	55	> 50	200	97.6	0.0027	> 60000	> 60000	> 60000
4	85	> 80	100	97.2	0.0022	> 60000	> 60000	> 60000
5	85	> 80	150	96.7	0.0025	> 60000	> 60000	> 60000
6	85	> 80	200	96.4	0.0028	> 60000	> 60000	> 60000
7	105	> 100	100	95.2	0.0032	> 60000	> 60000	33300
8	105	> 100	150	95.0	0.0035	> 60000	> 60000	34900
9	105	> 100	200	92.9	0.0043	51500	32400	15400



Approved Signatory:

T. Wakaki

Takara WAKAKI, Lab Manager
Nichia Corporation LED Testing Laboratory
 1-1, Tatsumi-Cho, Anan-Shi, TOKUSHIMA 774-0001, JAPAN