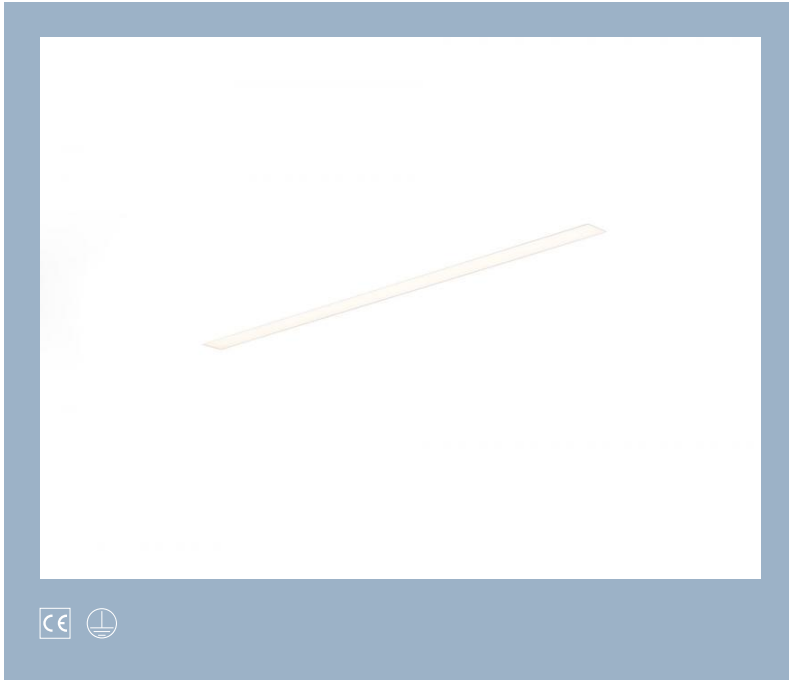


# V2M1B1/LEDN23D



**module • linear**

**application** : Office, Retail, Horeca, Education, Leisure

**light source** : LED LP • 4000 K

**optics** : Diffuser • acrylic (PMMA) HaloOptics® • very wide-angle

**UGR classification** : <=28

**luminous flux**: 4000 lm

**luminous efficacy** : 138 lm/W

**LLMF**: 97% @ 50khrs (Tq=25°C)

## Product information

### Mechanical properties

**type** : in-line mounting: end luminaire

### Electrical properties

**driver**: DALI dimmable

**power** : 29 W

**voltage** : 220-240V

**frequency** : 50-60Hz AC

**photobiological safety** : EN 62471: RISK GROUP 0 UNLIMITED

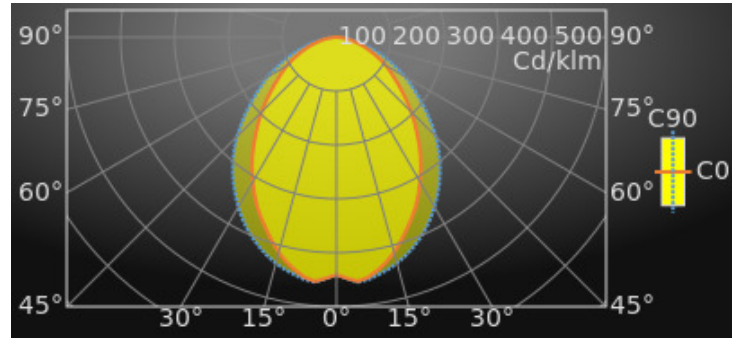
## Luminance

luminous flux : 4000 lm

luminous efficacy : 138 lm/W

UGR classification  $\leq 28$

luminous area : 0.06 m<sup>2</sup>



Average Luminances (Cd/m<sup>2</sup>) for 4000lm

Gamma	C0	C30	C45	C60	C90
45°	20168	21339	23612	24431	26813
50°	18184	19526	21741	22654	24823
55°	16587	17877	19952	20979	22853
60°	15439	16030	18090	19046	21359
65°	13867	14514	16819	17062	19180
70°	12468	13130	15159	15015	17025
75°	10770	11235	13286	13008	14941
80°	9567	9060	11441	10395	12601
85°	4645	5603	9026	6498	8172

## Classifications

CIE: 550 / 842 / 970 / 1000 / 1000

CIE FLUXCODE : 0.55 / 0.84 / 0.97 / 1.00 / 1.00

BZ: BZ3/1.5/BZ4

CAE: Symmetrical

DIN: A50 (Nach Arbeitsblatt 7)

DIN\_U: Phi u = 1.00

DIN\_SU: Phi su = 0.60

UTE: 1.00 D + 0.00 T



## Luminous intensities in cd

Lifetime Data (Tq=25.0°C)

Time(khrs)	LLMF(%)	Cx(%)
10	99	2
20	99	4
30	98	6
40	98	8
50	97	10
60	97	12

Intensity for 4000lm

Gamma	C0	C45	C90
0°	1763.3	1763.3	1763.3
5°	1819.0	1826.9	1823.9
10°	1757.4	1786.0	1789.5
15°	1653.4	1717.5	1736.0
20°	1519.0	1620.7	1661.8
25°	1390.2	1498.4	1568.8
30°	1238.7	1364.9	1454.5
35°	1086.9	1214.6	1328.8
40°	928.9	1060.4	1193.2
45°	784.3	918.3	1042.8
50°	642.8	768.6	877.6
55°	523.3	629.4	720.9
60°	424.6	497.5	587.4
65°	322.3	390.9	445.8
70°	234.5	285.2	320.3
75°	153.3	189.1	212.7
80°	91.4	109.3	120.4
85°	22.3	43.3	39.2
90°	2.3	2.1	1.4

## UGR classification

Corrected Glare Ratings for a Total Lamp Flux of 4000lm (S = 0.25H)

Ceiling Walls Floor	Room Reflection Factors (%)									
	70	70	50	50	30	70	70	50	50	30
	50	30	50	30	30	50	30	50	30	30
	20	20	20	20	20	20	20	20	20	20
Room Dimensions	Viewed Crosswise					Viewed Endwise				
X = 2H Y = 2H	21.7	23.5	22.1	23.7	24.0	23.3	25.0	23.6	25.3	25.5
Y = 3H	22.8	24.4	23.2	24.7	25.0	24.5	26.1	24.9	26.4	26.7
Y = 4H	23.3	24.7	23.6	25.0	25.3	25.0	26.5	25.3	26.8	27.1
Y = 6H	23.5	24.9	23.9	25.2	25.6	25.3	26.7	25.7	27.0	27.3
Y = 8H	23.6	24.9	24.0	25.2	25.6	25.4	26.7	25.7	27.0	27.4
Y = 12H	23.6	24.9	24.0	25.2	25.5	25.4	26.6	25.8	27.0	27.3
X = 4H Y = 2H	22.4	23.9	22.7	24.2	24.5	23.6	25.1	24.0	25.4	25.7
Y = 3H	23.6	24.9	24.0	25.3	25.6	25.0	26.3	25.4	26.7	27.0
Y = 4H	24.2	25.3	24.6	25.7	26.0	25.6	26.8	26.0	27.1	27.5
Y = 6H	24.6	25.6	25.0	25.9	26.3	26.1	27.1	26.5	27.5	27.9
Y = 8H	24.7	25.6	25.1	26.0	26.4	26.2	27.1	26.6	27.5	28.0
Y = 12H	24.7	25.5	25.1	26.0	26.4	26.3	27.1	26.7	27.5	28.0
X = 8H Y = 4H	24.4	25.4	24.9	25.8	26.2	25.8	26.7	26.2	27.1	27.5
Y = 6H	24.9	25.7	25.4	26.1	26.6	26.3	27.1	26.8	27.5	28.0
Y = 8H	25.1	25.8	25.6	26.2	26.7	26.5	27.2	27.0	27.6	28.1
Y = 12H	25.2	25.8	25.7	26.2	26.8	26.6	27.2	27.1	27.7	28.2
X = 12H Y = 4H	24.4	25.3	24.9	25.7	26.2	25.8	26.6	26.2	27.0	27.5
Y = 6H	25.0	25.7	25.5	26.1	26.6	26.3	27.0	26.8	27.5	28.0
Y = 8H	25.2	25.7	25.7	26.2	26.7	26.5	27.1	27.0	27.6	28.1
	<b>UGR Variations with Observer Position for Luminaire Spacings S</b>									
S = 1.0H	+0.2		-0.3		+0.2		-0.2			
S = 1.5H	+0.4		-0.6		+0.3		-0.5			
S = 2.0H	+0.6		-1.1		+0.7		-0.9			



## Colour properties

Correlated Colour Temperature : 4000

Ra: 80

## Efficiency

Utilisation Factors according to IES (%)

	Room Reflection Factors (%)									
	80	80	80	50	50	50	30	30	30	0
Ceiling	80	80	80	50	50	50	30	30	30	0
Walls	50	30	10	50	30	10	50	30	10	0
Floor	20	20	20	20	20	20	20	20	20	0
RCR = 1	105	102	100	98	96	94	94	93	91	86
2	92	87	83	86	83	80	83	80	78	73
3	81	75	70	77	72	68	74	70	67	63
4	73	66	60	69	63	59	67	62	58	55
5	66	58	53	62	56	51	60	55	51	48
6	60	52	46	57	50	46	55	49	45	42
7	54	47	41	52	45	41	51	45	40	38
8	50	42	37	48	41	37	47	41	36	34
9	46	39	33	44	38	33	43	37	33	31
10	43	35	31	41	35	30	40	34	30	28

Utilisation Factors according to LiTG (%)

	Room Reflection Factors (%)									
	80	80	80	50	50	50	50	50	30	0
Ceiling	80	80	80	50	50	50	50	50	30	0
Walls	50	30	50	30	50	30	50	30	30	0
Floor	30	30	10	10	30	30	10	10	10	0
k = 0.60	52	44	50	42	50	43	48	42	41	35
0.80	63	54	59	52	60	53	57	51	51	44
1.00	72	63	67	60	68	61	64	58	58	51
1.25	82	73	75	68	77	70	72	67	66	60
1.50	88	80	80	74	82	76	77	72	71	65
2.00	96	89	86	81	89	84	83	79	78	72
2.50	103	96	91	86	95	90	88	84	83	78
3.00	107	101	94	90	99	95	91	88	87	82
4.00	112	107	97	94	103	99	94	91	90	85
5.00	116	111	99	97	106	102	96	94	92	88

