

D11R1/LEDN20DEX2



recessed luminaire • round

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

housing: injection-moulded aluminium

light source : LED module • 4000 K

optics : Reflector • aluminium, satin anodised • wide-angle

UGR classification : <=22

luminous flux: 2350 lm

luminous efficacy : 118 lm/W

LLMF: 98% @ 50khrs (Tq=25°C)

Product information

Mechanical properties

cut-out size : 205 mm x 120 mm

colour: RAL9006-white aluminium

trim: wafer trim

type : individual luminaire

Electrical properties

driver: DALI dimmable, with daylight sensor ELS

power : 20 W

voltage : 230-240V

frequency : 50Hz AC

photobiological safety : EN 62471: RISK GROUP 1 UNLIMITED

Luminance

luminous flux : 2350 lm

luminous efficacy : 118 lm/W

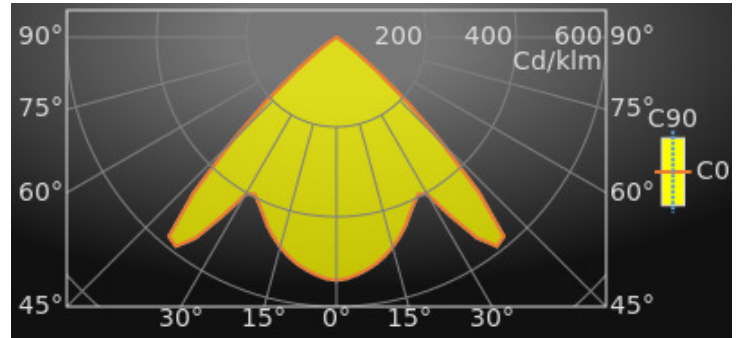
luminance @ 65° : 1000 cd/m²

UGR classification <=22

luminous area : 0.02 m²

Average Luminances (Cd/m²) for 2350lm

Gamma	C0	C30	C45	C60	C90
45°	46512	46512	46512	46512	46512
50°	18177	18177	18177	18177	18177
55°	4182	4182	4182	4182	4182
60°	75	75	75	75	75
65°	8	8	8	8	8
70°	0	0	0	0	0
75°	0	0	0	0	0
80°	0	0	0	0	0
85°	0	0	0	0	0



Classifications

CIE: 746 / 1000 / 1000 / 1000 / 1000

CIE FLUXCODE : 0.75 / 1.00 / 1.00 / 1.00 / 1.00

BZ: BZ2/3/BZ1/4/BZ2

CAE: Symmetrical

DIN: A60 (Nach Arbeitsblatt 7)

DIN_U: Phi u = 1.00

DIN_SU: Phi su = 0.72

UTE: 1.00 B + 0.00 T



Luminous intensities in cd

Lifetime Data (Tq=25.0°C)

Time(khrs)	LLMF(%)	Cx(%)
10	100	2
20	99	4
30	99	6
40	99	8
50	99	10
60	98	12

Intensity for 2350lm

Gamma	C0	C45	C90
0°	1271.7	1271.7	1271.7
5°	1246.2	1246.2	1246.2
10°	1201.3	1201.3	1201.3
15°	1135.3	1135.3	1135.3
20°	1052.4	1052.4	1052.4
25°	959.5	959.5	959.5
30°	946.0	946.0	946.0
35°	1281.8	1281.8	1281.8
40°	1360.9	1360.9	1360.9
45°	773.1	773.1	773.1
50°	274.7	274.7	274.7
55°	56.4	56.4	56.4
60°	0.9	0.9	0.9
65°	0.1	0.1	0.1
70°	0.0	0.0	0.0
75°	0.0	0.0	0.0
80°	0.0	0.0	0.0
85°	0.0	0.0	0.0
90°	0.0	0.0	0.0

UGR classification

Corrected Glare Ratings for a Total Lamp Flux of 2350lm (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	22.6	24.2	22.9	24.4	24.7	22.6	24.2	22.9	24.4	24.7
Y = 3H	22.4	23.8	22.8	24.1	24.4	22.4	23.8	22.8	24.1	24.4
Y = 4H	22.3	23.6	22.7	23.9	24.2	22.3	23.6	22.7	23.9	24.2
Y = 6H	22.3	23.5	22.6	23.8	24.1	22.3	23.5	22.6	23.8	24.1
Y = 8H	22.2	23.4	22.6	23.7	24.0	22.2	23.4	22.6	23.7	24.0
Y = 12H	22.2	23.3	22.6	23.6	24.0	22.2	23.3	22.6	23.6	24.0
X = 4H Y = 2H	22.4	23.7	22.7	23.9	24.2	22.4	23.7	22.7	23.9	24.2
Y = 3H	22.2	23.3	22.6	23.6	24.0	22.2	23.3	22.6	23.6	24.0
Y = 4H	22.1	23.1	22.5	23.4	23.8	22.1	23.1	22.5	23.4	23.8
Y = 6H	22.1	22.9	22.5	23.3	23.7	22.1	22.9	22.5	23.3	23.7
Y = 8H	22.0	22.8	22.5	23.2	23.6	22.0	22.8	22.5	23.2	23.6
Y = 12H	22.0	22.7	22.4	23.1	23.6	22.0	22.7	22.4	23.1	23.6
X = 8H Y = 4H	22.0	22.8	22.5	23.2	23.6	22.0	22.8	22.5	23.2	23.6
Y = 6H	22.0	22.6	22.4	23.0	23.5	22.0	22.6	22.4	23.0	23.5
Y = 8H	21.9	22.5	22.4	22.9	23.4	21.9	22.5	22.4	22.9	23.4
Y = 12H	21.9	22.4	22.4	22.9	23.4	21.9	22.4	22.4	22.9	23.4
X = 12H Y = 4H	22.0	22.7	22.4	23.1	23.6	22.0	22.7	22.4	23.1	23.6
Y = 6H	21.9	22.5	22.4	22.9	23.4	21.9	22.5	22.4	22.9	23.4
Y = 8H	21.9	22.4	22.4	22.9	23.4	21.9	22.4	22.4	22.9	23.4
UGR Variations with Observer Position for Luminaire Spacings S										
S = 1.0H	+2.9		-			+2.9		-		
			13.9					13.9		
S = 1.5H	+5.6		+0.0			+5.6		+0.0		
S = 2.0H	+7.6		+0.0			+7.6		+0.0		



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	109	107	105	103	101	100	99	98	97	91
2	99	95	93	94	91	89	91	88	86	82
3	90	85	81	86	82	79	83	80	77	73
4	82	76	72	78	73	70	76	72	69	66
5	75	68	64	71	66	62	70	65	62	59
6	68	61	57	65	60	56	64	59	55	53
7	62	56	51	60	54	50	59	54	50	47
8	57	50	46	55	49	45	54	49	45	43
9	53	46	41	51	45	41	50	45	41	39
10	49	42	38	48	42	37	47	41	37	35

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	59	51	56	50	57	50	55	49	49	43
0.80	73	65	69	63	70	64	67	62	61	56
1.00	82	74	76	70	78	72	74	69	68	63
1.25	91	84	83	78	86	81	81	77	76	72
1.50	97	90	88	84	91	86	86	82	81	77
2.00	104	97	93	89	97	92	90	87	86	82
2.50	109	104	96	93	101	97	94	91	90	86
3.00	113	109	99	97	105	102	97	95	93	90
4.00	117	113	101	99	107	104	98	96	95	91
5.00	120	116	103	101	109	107	100	98	97	93

Dimensional drawing

