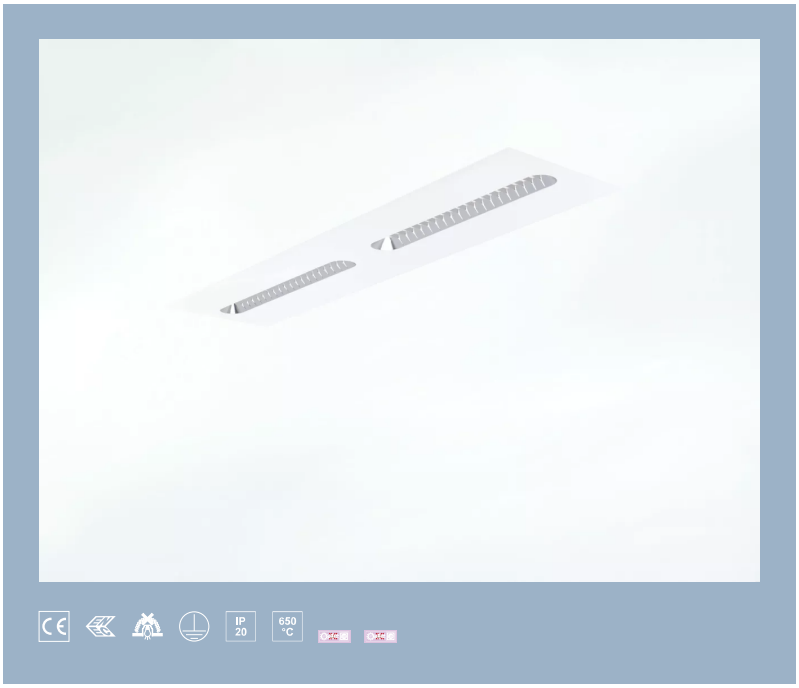
U3111/LEDN220DE



recessed luminaire • linear

Application : Workspaces, Classrooms

housing: lacquered sheet steel

light source : LED • 4000 K

optics : Shielded lens • polycarbonate (PC) with aluminium thin film • medium wide-angle

UGR classification : <=19

luminous flux: 2000 lm

luminous efficacy : 134 lm/W

LLMF: 98% @ 50khrs (Tq=25°C)

Product information

Mechanical properties

dimensions : 1196 mm x 296 mm x 58 mm

cut-out size : 1196 mm x 296 mm x 70 mm

ceiling modulation : M300

colour: RAL9003 - white (textured)

type : individual luminaire

IP: IP20

Electrical properties

driver: DALI driver controlled by integrated sensor

power : 14.9 W

voltage : 220-240V

frequency : 50-60Hz AC

photobiological safety : EN 62471: RISK GROUP 1 UNLIMITED

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Luminance

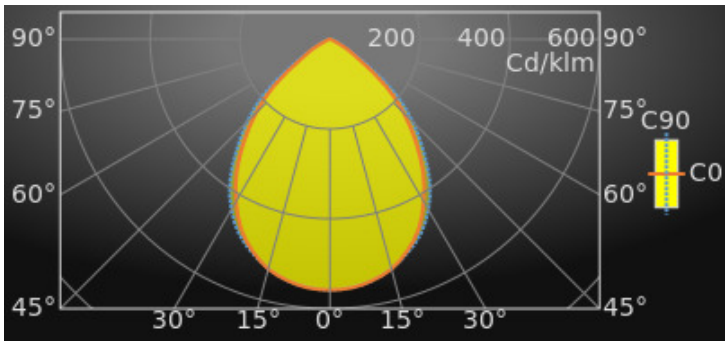
luminous flux : 2000 lm

luminous efficacy : 134 lm/W

luminance @ 65° = : 3000 cd/m²

UGR classification =: <=19

luminous area : 0.06 m²



Average Luminances (Cd/m²) for 2000lm

Gamma	C0	C30	C45	C60	C90
45°	11049	12594	13277	12831	12411
50°	8525	10628	11451	11093	10110
55°	4813	7649	9489	8964	6246
60°	3005	4683	6559	4963	2974
65°	915	1852	2964	2356	2054
70°	528	671	985	1463	1335
75°	383	440	540	834	1099
80°	105	223	312	452	875
85°	1	0	15	89	619

Classifications

CIE: 681 / 963 / 997 / 1000 / 1000

CIE FLUXCODE : 0.68 / 0.96 / 1.00 / 1.00 / 1.00

BZ: BZ2

CAE: Symmetrical

DIN: A50 (Nach Arbeitsblatt 7)

DIN_U: Phi u = 1.00

DIN_SU: Phi su = 0.70

UTE: 1.00 C + 0.00 T

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Lifetime Data (Tq=25.0°C)

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

Luminous intensities in cd

Intensity for 2000lm

Gamma	C0	C45	C90
0°	1117.2	1117.2	1117.2
5°	1111.3	1108.4	1107.5
10°	1091.4	1090.1	1090.3
15°	1059.1	1057.4	1055.9
20°	1004.5	1010.7	1011.6
25°	933.9	952.6	956.9
30°	834.3	870.9	876.7
35°	721.9	780.6	775.5
40°	593.4	668.4	646.4
45°	464.1	557.7	521.3
50°	325.5	437.2	386.0
55°	164.0	323.3	212.8
60°	89.2	194.8	88.3
65°	23.0	74.4	51.6
70°	10.7	20.0	27.1
75°	5.9	8.3	16.9
80°	1.1	3.2	9.0
85°	0.0	0.1	3.2
90°	0.0	0.0	0.0

UGR classification =

Corrected Glare Ratings for a Total Lamp Flux of 2000lm (S = 0.25H)

	Room Reflection Factors (%)									
Ceiling	70	70	50	50	30	70	70	50	50	30
Walls	50	30	50	30	30	50	30	50	30	30
Floor	20	20	20	20	20	20	20	20	20	20
Room Dimensions	**Viewed Crosswise**					**Viewed Endwise**				
X = 2H Y = 2H	18.3	19.9	18.6	20.1	20.4	18.7	20.3	19.0	20.6	20.8
Y = 3H	18.1	19.6	18.4	19.8	20.1	18.7	20.1	19.0	20.4	20.7
Y = 4H	18.0	19.4	18.4	19.7	20.0	18.6	19.9	19.0	20.2	20.5
Y = 6H	18.0	19.2	18.3	19.5	19.8	18.5	19.8	18.9	20.1	20.4
Y = 8H	17.9	19.1	18.3	19.4	19.8	18.5	19.7	18.9	20.0	20.4
Y = 12H	17.9	19.0	18.3	19.3	19.7	18.5	19.6	18.9	19.9	20.3
X = 4H Y = 2H	18.4	19.8	18.8	20.1	20.4	18.8	20.1	19.2	20.4	20.7
Y = 3H	18.3	19.4	18.7	19.8	20.1	18.8	19.9	19.2	20.2	20.6
Y = 4H	18.2	19.2	18.6	19.6	19.9	18.8	19.7	19.2	20.1	20.5
Y = 6H	18.2	19.0	18.6	19.4	19.8	18.7	19.6	19.2	20.0	20.4
Y = 8H	18.1	18.9	18.6	19.3	19.7	18.7	19.5	19.1	19.9	20.3
Y = 12H	18.1	18.8	18.5	19.2	19.7	18.7	19.4	19.1	19.8	20.3
X = 8H Y = 4H	18.1	18.9	18.6	19.3	19.8	18.7	19.5	19.1	19.9	20.3
Y = 6H	18.1	18.7	18.5	19.2	19.6	18.7	19.3	19.1	19.7	20.2
Y = 8H	18.1	18.6	18.5	19.1	19.6	18.6	19.2	19.1	19.7	20.1
Y = 12H	18.0	18.5	18.5	19.0	19.5	18.6	19.1	19.1	19.6	20.1
X = 12H Y = 4H	18.1	18.8	18.6	19.3	19.7	18.6	19.4	19.1	19.8	20.2
Y = 6H	18.1	18.6	18.5	19.1	19.6	18.6	19.2	19.1	19.6	20.1
Y = 8H	18.0	18.5	18.5	19.0	19.5	18.6	19.1	19.1	19.6	20.1
	UGR Variations with Observer Position for Luminaire Spacings S									
S = 1.0H	+1.0		-2.3			+0.7		-1.4		
S = 1.5H	+2.2		-7.4			+2.1		-6.4		
S = 2.0H	+3.6		-14.2			+3.3		-8.1		

Colour properties

Correlated Colour Temperature : 4000

Ra: CRI (Ra) 80

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Efficiency

Utilisation Factors according to IES (%)

	Room Reflection Factors (%)									
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	108	106	104	102	100	99	98	97	96	90
2	97	93	90	92	89	87	89	86	84	80
3	88	83	79	83	79	76	81	77	75	71
4	80	74	69	76	71	67	74	70	66	63
5	72	66	61	69	64	60	67	63	59	56
6	66	59	54	64	58	54	62	57	53	50
7	61	54	49	59	53	48	57	52	48	46
8	56	49	44	54	48	44	53	47	43	41
9	52	45	40	50	44	40	49	44	40	38
10	48	41	37	47	41	37	46	40	36	35

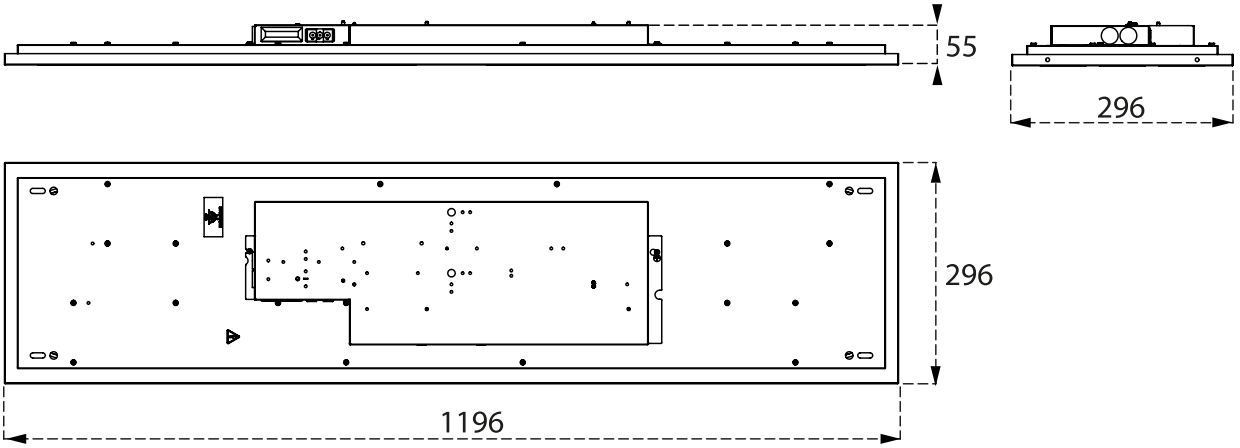
Utilisation Factors according to LiTG (%)

	Room Reflection Factors (%)									
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	71	63	67	60	68	61	65	60	59	54
1.00	80	72	74	68	76	69	72	67	66	61
1.25	90	82	82	77	85	79	80	76	75	70
1.50	95	88	87	82	90	84	84	80	79	75
2.00	103	96	92	88	96	91	89	86	85	80
2.50	108	102	96	92	100	96	93	90	89	85
3.00	112	108	98	96	104	101	96	94	92	88
4.00	116	112	100	98	107	104	97	96	94	90
5.00	119	115	102	100	109	106	99	98	96	93

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Dimensional drawing



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