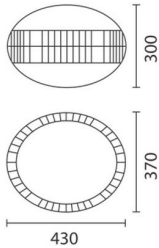


Last information update: June 2018

**up/down emission - neutral white - DALI****Product code**

N310

**Technical description**

Luminaire consisting of two polycarbonate shells with a photoengraved surface for optimal light diffusion. The shells are closed with specific supports that the suspension cables (accessories) are connected to. The coupling between the shells is made watertight by a silicone gasket located around the edge and a M24 nickel-plated brass cable gland for the power supply cable outlet. Double reflector in microperforated aluminium for up/down emission complete with microprismatic glass covers. Product with 2 x neutral white 4,000K colour tone C.o.B. LEDs, one positioned at the top of the plate for up emission (30%) and the other at the bottom for down emission (70%)

**Installation**

Ceiling-mounted with suspension cables to be ordered separately.

**Dimension (mm)**

430x370x300

**Colour**

Nitric (65)

**Weight (Kg)**

5.44

**Mounting**

ceiling surface

**Wiring**

Product complete with DALI components

Complies with EN60598-1 and pertinent regulations

IP66

**Product configuration: N310****Product characteristics**

Total lighting output [Lm]: 4969  
Total power [W]: 50.9  
Luminous efficacy [Lm/W]: 97.6  
Life Time: > 50,000h - L80 - B10 (Ta 25°C)

Total luminous flux at or above an angle of 90° [Lm]: 1524  
Emergency luminous flux [Lm]: /  
Voltage [V]: -  
Number of optical assemblies: 1

**Optical assembly Characteristics Type 1**

Light Output Ratio (L.O.R.) [%]: 71  
Lamp code: LED  
ZVEI Code: LED  
Nominal power [W]: 45  
Nominal luminous [Lm]: 7000  
Lamp maximum intensity [cd]: /  
Beam angle [°]: /

Number of lamps for optical assembly: 1  
Socket: /  
Ballast losses [W]: 5.9  
Colour temperature [K]: 4000  
CRI: 80  
Wavelength [nm]: /  
MacAdam Step: 2

Imax=1929 cd C0-180

180° 90° 90° 2500 0°

**CIE**  
nL 0.71  
65-90-97-69-71  
UGR 12.7-12.8

**DIN**  
B.53

**UTE**  
0.49C+0.22T  
F"1=653  
F"1+F"2=896  
F"1+F"2+F"3=967

**CIBSE**  
LG3 L<1500 cd/m² at 65°  
UGR<16 | L<1500 cd/mq @

	R	77	75	73	71	55	53	33	00	DRR
K0.8	46	40	36	33	37	33	31	26	52	
1.0	50	44	40	37	41	38	35	29	59	
1.5	56	51	48	45	47	44	41	35	70	
2.0	59	56	53	50	51	49	45	38	77	
2.5	61	58	56	54	53	51	47	40	82	
3.0	63	60	58	56	55	53	49	42	85	
4.0	64	62	60	59	57	56	51	43	88	
5.0	65	64	62	61	58	57	52	44	90	

The graph shows the relationship between the angle of incidence ( $\alpha$ ) and the irradiance ( $E$ ) for different surface materials (A, B, C) at different times of day (2000, 1000, 500, <300). The table above the graph provides the values for  $\alpha$  and  $E$  for each material and time.

QC	A	G	1.15	2000	1000	500	<300		
	B		1.50		2000	1000	750	500	<300
	C		1.85			2000		1000	500

The plot shows the angle of incidence ( $\alpha$ ) on the y-axis (ranging from 45° to 85°) versus the irradiance ( $E$ ) on the x-axis (ranging from 10<sup>2</sup> to 10<sup>4</sup> cd/m<sup>2</sup>). The curves represent the relationship between  $\alpha$  and  $E$  for each material and time. The curves for material A (solid blue line) and material B (dashed red line) show a decreasing trend, while the curve for material C (dotted green line) shows an increasing trend. The curves for material A and B are labeled with their respective values (1.15, 1.50, 1.85) and the time of day (2000, 1000, 500, <300). The curve for material C is labeled with its value (1.85) and the time of day (2000).

# UGR diagram

Corrected UGR values (at 7000 lm bare lamp luminous flux)												
Reflect.: ceiling/cav walls work pl. Room dim x y		0.70	0.70	0.50	0.50	0.30	0.70	0.70	0.50	0.50	0.30	0.30
		0.50	0.30	0.50	0.30	0.30	0.50	0.30	0.50	0.30	0.30	0.30
		0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
		viewed crosswise					viewed endwise					
2H	2H	12.0	12.7	12.7	13.4	14.2	12.2	12.9	12.9	13.6	14.4	14.4
	3H	12.3	12.9	13.0	13.6	14.5	12.2	12.8	13.0	13.6	14.4	14.4
	4H	12.4	12.9	13.1	13.7	14.6	12.2	12.7	12.9	13.5	14.4	14.4
	6H	12.4	13.0	13.2	13.7	14.6	12.1	12.6	12.9	13.4	14.3	14.3
	8H	12.4	13.0	13.2	13.7	14.7	12.0	12.6	12.8	13.3	14.2	14.2
	12H	12.5	12.9	13.3	13.7	14.7	12.0	12.5	12.8	13.3	14.2	14.2
4H	2H	12.0	12.6	12.7	13.3	14.2	12.7	13.3	13.5	14.1	14.9	14.9
	3H	12.4	12.8	13.1	13.6	14.6	12.9	13.3	13.6	14.1	15.1	15.1
	4H	12.5	13.0	13.3	13.7	14.7	12.9	13.3	13.7	14.1	15.1	15.1
	6H	12.7	13.0	13.5	13.9	14.9	12.9	13.2	13.7	14.1	15.1	15.1
	8H	12.7	13.1	13.6	13.9	14.9	12.8	13.2	13.7	14.0	15.0	15.0
	12H	12.8	13.1	13.6	13.9	14.9	12.8	13.1	13.7	14.0	15.0	15.0
8H	4H	12.5	12.9	13.4	13.7	14.7	13.4	13.7	14.2	14.5	15.5	15.5
	6H	12.7	13.0	13.6	13.9	14.9	13.5	13.7	14.3	14.6	15.6	15.6
	8H	12.8	13.1	13.7	14.0	15.0	13.5	13.7	14.4	14.6	15.7	15.7
	12H	12.9	13.2	13.8	14.0	15.1	13.5	13.7	14.4	14.6	15.7	15.7
12H	4H	12.5	12.8	13.3	13.6	14.7	13.5	13.8	14.3	14.6	15.7	15.7
	6H	12.7	13.0	13.6	13.8	14.9	13.6	13.9	14.5	14.7	15.8	15.8
	8H	12.9	13.1	13.8	14.0	15.0	13.7	13.9	14.6	14.8	15.9	15.9
Variations with the observer position at spacing:												
S =		1.0H	0.8 / -1.2		0.7 / -1.0							
		1.5H	2.0 / -2.0		1.8 / -1.6							
		2.0H	3.5 / -2.4		3.1 / -1.9							