Laser Pinhole

Last information update: May 2018

recessed adjustable

Product code
P416

Technical description
Round adjustable luminaire designed for housing 2700K Warm White COB LED light sources with high colour rendering and OPTIBEAM reflector made of thermoplastic material. Rim made of white-coated die-cast aluminium incorporating a black-coated thermoplastic component for guaranteeing maximum visual comfort and preventing stray light dispersion. Flood optic. Adjustable internally around the horizontal axis by 35° and around the vertical axis by 358°. Passive cooling system, by means of a black-coated heat sink made of extruded aluminium. The power supply unit is available with a separate code.

Installation
Recessed installation in false ceilings with 1 mm to 20 mm thickness with steel springs.

Dimension (mm)
Ø82x100

Colour
White (01)

Weight (Kg)
0.38

Mounting
ceiling surface

Wiring
Constant-current ballasts available with separate code: ON-OFF / 1-10 V dimmable / phase-cut dimmer / the recessed luminaire is supplied with the cable and connector to be connected to the connector provided on the driver.

Complies with EN60598-1 and pertinent regulations

Product configuration: P416

Product characteristics

Total lighting output [Lm]: 447	Total luminous flux at or above an angle of 90° [Lm]: 0
Total power [W]: 10	Emergency luminous flux [Lm]: /
Luminous efficacy [Lm/W]: 44.7	Voltage [V]: -
Life Time: > 50,000h - L80 - B10 (Ta 25°C)	Number of optical assemblies: 1

Optical assembly Characteristics Type 1

Light Output Ratio (L.O.R.) [%]: 39	Number of lamps for optical assembly: 1
Lamp code: LED	Socket: /
ZVEI Code: LED	Ballast losses [W]: 0
Nominal power [W]: 10	Colour temperature [K]: 2700
Nominal luminous [Lm]: 1150	CRI: 90
Lamp maximum intensity [cd]: /	Wavelength [Nm]: /
Beam angle [°]: 26°	MacAdam Step: 2

Polar

Imax=2232 cd

α=26°

CIE
nL 0.39
99-100-100-100-39
UGR <10-<10
DIN
A.61
UTE
0.39A+0.00T
F"1=986
F"1+F"2=996
F"1+F"2+F"3=1000
CIBSE
LG3 L<3000 cd/m² at 65°
UGR<10 I L<3000 cd/mq @65°

h	d	Em	Emax
2	0.9	441	558
4	1.8	110	139
6	2.8	49	62
8	3.7	28	35
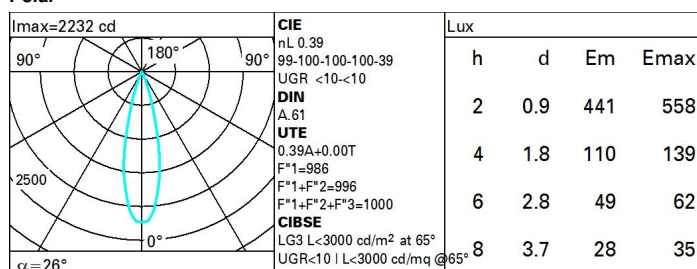
Utilisation factors

R	77	75	73	71	55	53	33	00	DRR
K0.8	35	33	32	31	33	32	31	30	77
1.0	36	35	34	33	34	33	33	32	82
1.5	38	37	36	35	37	36	35	34	88
2.0	40	39	38	37	38	37	37	36	92
2.5	40	40	39	39	39	39	38	37	95
3.0	41	40	40	39	40	39	39	38	97
4.0	41	41	41	40	40	40	39	38	99
5.0	42	41	41	41	41	40	40	39	100

Luminance curve limit

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

C0-180 ——————   C90-270 - - - - - - - -
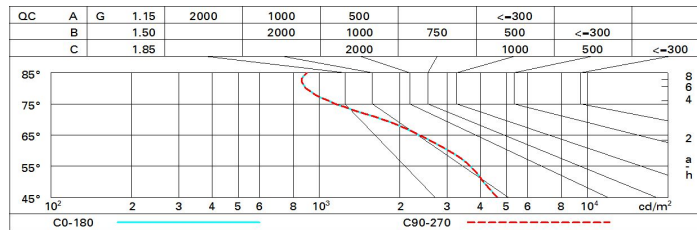
UGR diagram

Corrected UGR values (at 1150 lm bare lamp luminous flux)										
Riflect.:										
ceil/cav		0.70	0.70	0.50	0.50	0.30	0.70	0.70	0.50	0.50	0.30
walls		0.50	0.30	0.50	0.30	0.30	0.50	0.30	0.50	0.30	0.30
work pl.		0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Room dim			viewed					viewed			
x	y		crosswise					endwise			
2H	2H	4.8	6.9	5.2	7.3	7.6	4.8	6.9	5.2	7.3	7.6
	3H	5.4	7.0	5.7	7.3	7.6	5.1	6.7	5.5	7.0	7.4
	4H	5.5	6.8	5.9	7.1	7.4	5.2	6.5	5.5	6.8	7.1
	6H	5.6	6.5	5.9	6.8	7.2	5.2	6.1	5.6	6.5	6.8
	8H	5.5	6.5	5.9	6.8	7.2	5.1	6.1	5.5	6.4	6.8
	12H	5.5	6.4	5.9	6.8	7.2	5.1	6.0	5.5	6.4	6.8
4H	2H	5.2	6.5	5.5	6.8	7.1	5.5	6.8	5.9	7.1	7.4
	3H	5.8	6.8	6.2	7.1	7.5	5.9	6.8	6.3	7.2	7.5
	4H	5.9	6.8	6.4	7.2	7.6	5.9	6.8	6.4	7.2	7.6
	6H	5.7	7.4	6.2	7.8	8.3	5.6	7.3	6.1	7.8	8.2
	8H	5.6	7.5	6.1	8.0	8.5	5.5	7.4	6.0	7.9	8.4
	12H	5.5	7.5	6.1	8.0	8.5	5.4	7.4	5.9	7.9	8.4
8H	4H	5.5	7.4	6.0	7.9	8.4	5.6	7.5	6.1	8.0	8.5
	6H	5.6	7.4	6.1	7.9	8.4	5.6	7.4	6.1	7.9	8.5
	8H	5.7	7.3	6.2	7.8	8.3	5.7	7.3	6.2	7.8	8.3
	12H	5.9	7.0	6.4	7.5	8.0	5.8	6.9	6.3	7.4	8.0
12H	4H	5.4	7.4	5.9	7.9	8.4	5.5	7.5	6.1	8.0	8.5
	6H	5.6	7.2	6.1	7.7	8.2	5.7	7.3	6.2	7.8	8.3
	8H	5.8	6.9	6.3	7.4	8.0	5.9	7.0	6.4	7.5	8.0

Variations with the observer position at spacing:

S =	1.0H	0.3 / -0.5	0.3 / -0.5
	1.5H	0.8 / -1.4	0.8 / -1.4
	2.0H	1.6 / -2.3	1.6 / -2.3