

PHILIPS

sense and simplicity

Claria PLUS – Clean room luminaires

Industry Luminaires
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Where do you need Cleanroom Luminaires

- Rooms that require very high hygiene levels:
 - Laboratories
 - Semiconductor production sites
 - Pharmaceutical industry
- Rooms that require just protection from water and dust:
 - Scanner areas
 - Food processing
 - Kitchens

Luminaire requirements

Basic luminaire requirements are:

Ingress Protection (IP)	<ul style="list-style-type: none">• In a controlled environment with different levels of air pressure, the most critical aspect for lighting fixtures is to be sealed and to prevent any form of air leakage. A lighting fixture with a high IP rating can prevent such a leakage, so any lighting fixture with a suitable IP rating can be used in cleanrooms.• In general, cleanrooms with the highest ISO classifications require IP 65 lighting fixtures while cleanrooms with lower classifications use IP 54 lighting fixtures.• For further information on IP ratings, please refer to the Annex.
Ceiling Construction	<ul style="list-style-type: none">• The type of ceiling plays a part in determining the type of fixture used in cleanrooms. Lighting fixtures are either surface mounted or recessed mounted.• In some cases, cleanroom builders require special lighting fixtures designed for specific ceilings.
Type of Application	<ul style="list-style-type: none">• The nature of the application governs the type of lighting fixtures used in cleanrooms. For example in an environment where dust, heat or vapour is part of the operational process, the lighting fixture has to be designed accordingly.
Access Method	<ul style="list-style-type: none">• The maintenance of lighting fixtures is a major concern for end-users as accessing the lighting fixture could contaminate the entire cleanroom and increase down time. Therefore, cleanroom contractors consider the accessibility of the lighting fixtures when designing cleanrooms. In some critical environments, lighting fixtures are designed specifically to be accessed from outside the clean area.

Classification

- Cleanrooms are classified according to ISO:

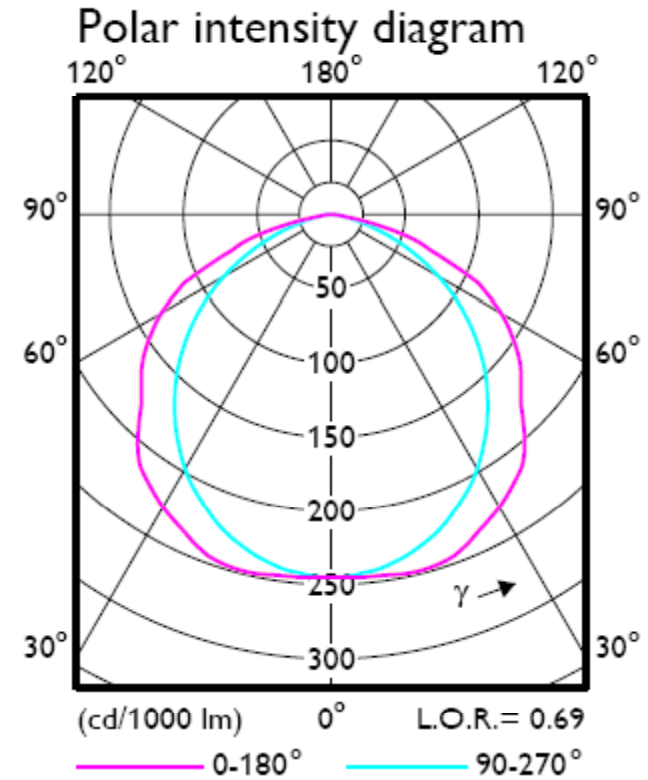
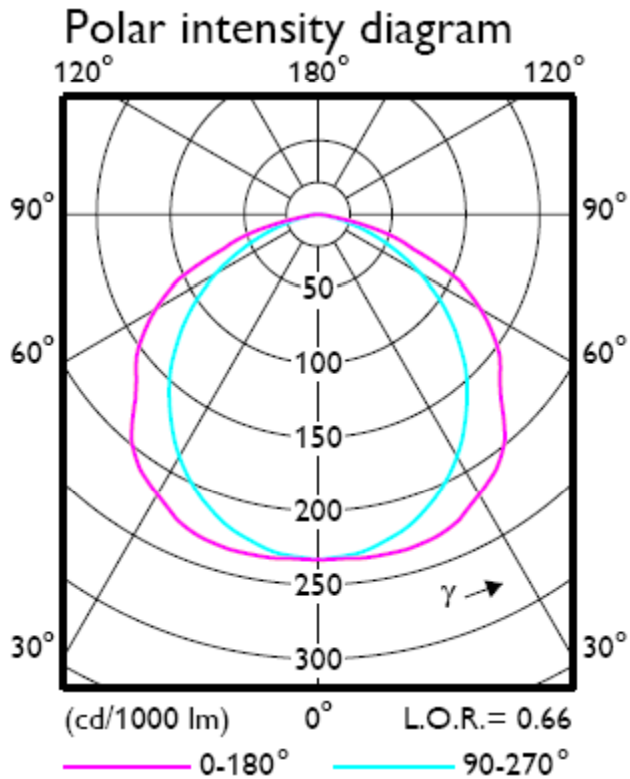
Cleanroom Classifications					Maximum Permissible Particulate Count per Cubic Metre					
ISO Classification Number	US Fed 209E	EU GMP Guidelines	British BS 5295	German VDI 2083	0.1 µm	0.2 µm	0.3 µm	0.5 µm	1 µm	5 µm
ISO 1					10	2				
ISO 2					100	24	10	4		
ISO 3	1		'C'	1	1,000	237	102	35	8	
ISO 4	10		'D'	2	10,000	2,370	1,020	352	83	
ISO 5	100	A/B	'E' or 'F'	3	100,000	23,700	10,020	3,520	832	29
ISO 6	1,000		'G' or 'H'	4	1,000,000	237,000	102,000	35,200	8,320	293
ISO 7	10,000	C	'J'	5				352,000	83,200	930
ISO 8	100,000	D	'K'	6				3,520,000	832,000	29,300
ISO 9								35,200,000	8,320,000	293,000



Claria PLUS Specifications

- Housing: CRCA sheet steel
- Lamp options: TL5 14w / PL L 36w / TL5 24w / TL5 HE Eco 13w
- Internal reflector: Powder Coated CRCA white / Anodized Al
- Cover: Clear Acrylic / Toughened Glass
- Dimensions: Flexible lip size to ensure ceiling – luminaire engagement
- IP protection: IP 65 with glass / IP 54 with clear acrylic
- Gasket: EPDM Gasket to ensure achievement and maintenance of IP protection
- Maintenance: FRONT OPENABLE

Photometry options*



TBS 651 4 x TL5 14w CR EB FOP GT

TBS 651 4 x TL5 24w CR EB FOP GT



Technical data

12NC	Luminaire	Lamp	System wattage	System current	Power factor
919015810515	FBS651 3xPLL-36W EB CR FOP GT	PLL 36w	91	0.38	0.99
919015810517	TBS651 4xTL5-14W EB CR FOP GT	TL5 14w	58	0.24	0.99
919015810519	TBS651 4xTL5-24W EB CR FOP GT	TL5 24w	92	0.39	0.99
TBA	FBS651 3xPLL-36W EB CR FOP CA	PLL 36w	91	0.38	0.99
TBA	TBS651 4xTL5-14W EB CR FOP CA	TL5 14w	58	0.24	0.99
TBA	TBS651 4xTL5-24W EB CR FOP CA	TL5 24w	92	0.39	0.99
919015810514	FBS651 3xPLL-36W EB AL FOP GT	PLL 36w	91	0.38	0.99
919015810516	TBS651 4xTL5-14W EB AL FOP GT	TL5 14w	58	0.24	0.99
919015810518	TBS651 4xTL5-24W EB AL FOP GT	TL5 24w	92	0.39	0.99
TBA	FBS651 3xPLL-36W EB AL FOP CA	PLL 36w	91	0.38	0.99
TBA	TBS651 4xTL5-14W EB AL FOP CA	TL5 14w	58	0.24	0.99
TBA	TBS651 4xTL5-24W EB AL FOP CA	TL5 24w	92	0.39	0.99

