

clean area product selector

INTRODUCTION

Whitecroft Lighting has over 30 years experience in the supply of clean room luminaires and is one of very few lighting firms in Europe with the capability to meet almost every need in a clean room environment.

Over this period we have gained considerable expertise and encountered most potential problems. Our product range has been progressively developed and improved to meet the exacting needs of clean and sterile environments. These factors combined with the fact we employ clean room specialists helps us provide good advice when needed.

The range has further evolved to exploit a number of important advantages offered by the T5 lamp. Downtime is very costly in clean rooms and the T5 lamp with a life of 20,000 hours extends lamp replacement intervals. The fact the T5 lamp produces its peak output at 35°C (T8 – 25°C) makes it better equipped to cope if the luminaire runs hot as a consequence of being installed in highly insulating clean room ceiling panels. High output T5 lamps allow higher lumen packages to be offered and as all T5 lamps are tri-phosphor good colour rendition which is so important in clean rooms is guaranteed. Due to our belief in the advantages of T5: though we are prepared to continue to offer T8 versions we do not catalogue them with the exception of DTFA/N.

Other improvements have also been incorporated in the new T5 range. Curie previously incorporated robust extruded aluminium jacking brackets to ensure correct and even seal engagement with the ceiling and this feature has been extended to DTFN Elite, DTFN and DTFA Elite. Similarly Curie had concealed front frame fixings and this has also been extended to DTFN Elite and DTFA Elite.

Diffuser discolouration associated with the use of thermoplastic materials has been a frequent issue. UV will affect all thermoplastic materials but problems are dramatically exacerbated in the presence of certain cleaning chemicals. Curie previously accepted glass which is fully resistant but now the frames of DTFN Elite and DTFA Elite have been redesigned to accept glass where needed. All luminaires have tightly clamped diffusers, but it is now possible to replace the diffuser or glass without also replacing the frame on Curie Elite, DTFN Elite, DTFA Elite, Lister and DTBY.

In recent years deeper ceiling panels as used in the food industry have become more common in clean areas. On Curie Elite, DTFN Elite and DTFN to cope with this, deep bracket options have been introduced for ceilings up to 153mm thick (front access) and 170mm (back access).





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CLEAN ROOM LIGHTING CONSIDERATIONS

Lighting in Clean Rooms and Sterile Environments must address two key factors to satisfy regulatory bodies like the FDA.

Firstly; will the luminaire protect the room from void contaminants? This requires luminaires have the correct and independently certified IP rating on both front frame and body. Installation methods must also ensure full and even compression of luminaire seals against ceilings.

Secondly; are luminaires suitable for a sterile environment? To achieve this, luminaires must be easy to clean with minimal grooves and crevices and meet ISPE Baseline Guide recommendations for different classes of room. Seals should be bacterially inert and in more critical rooms luminaire frame fixings should be tightly capped. Luminaire components must be resistant to sterilising chemicals. (glass diffusers are fully resistant but thermoplastic diffuser materials which can be attacked could be preferred only if ceiling loading is an issue).

Secondary considerations include the need to maximise light output, as space in clean room ceilings is limited. To satisfy section 6, B2 of the Building Regulations, TP(a) diffusers are required in recessed luminaires in rooms over 30m² and this reduces light output. T5 lamps help address this problem and make higher lumen packages available while extending lamp life to 20,000 hours and ensuring good colour rendition.

To ensure luminaires do not generate particles (i.e. corrosion or paint shedding), all our clean room luminaires use extruded aluminium frames (recommended in the ISPE guide) and are painted as standard to a depth of 120µm baked at 180°C for a hard durable scratch resistant finish.

SPECIFICATION CHECKLIST

So we can assist in selecting the luminaire it is helpful to have the following information:

- Room classification, activity and IP/IP (*frame on/frame off*) rating required
- Is the environment hazardous? If so please provide details.
- Front or back access? (*Will lamps be changed from inside the room or from the room above*)
- Is the ceiling non-modular cut aperture or a modular T bar ceiling? If non-modular how thick is the ceiling panel?
- If capping is used to strengthen around cut apertures on non-modular ceilings how far does this extend below the ceiling? (*Curie and DTFN conceal up to 15mm of capping*)
- On non-modular ceilings, is the standard suspension method suitable? If not, is a deeper ceiling bracket or special suspension method required?
- Is the room area >30m²? In which case TP(a) diffuser materials are normally necessary in the UK. In smaller rooms and certain export markets TP(b) may be acceptable
- Does the room have computer screens and is a louvre needed?
- If a thermoplastic diffuser is being considered, what chemicals and sterilising compounds are present?
- On spring tee ceilings a recessing panel must be ordered if it is necessary to maintain room integrity to the void to IP65

NATIONAL AND INTERNATIONAL STANDARDS COMPARISON CHART

Country	USA		EU	ISO	France	Germany	Australia
Standard	209D	209E	GGMP	14644-1	AFNOR X44101	VD I.2083	AS 1386
Date of issue	1988	1992	1997	1999	1972	1990	1989
					0		
	1	M1.5		3		1	0.035
	10	M2.5		4		2	0.35
	100	M3.5	A&B	5	4000	3	3.5
	1,000	M4.5		6		4	35
	10,000	M5.5	C	7	400,000	5	350
	100,000	M6.5	D	8	4,000,000	6	3500

CLEAN ROOM PRODUCT SELECTOR

STANDARD		PRODUCT										
FS209D	EU GMP 1997	Lamina	Curie Elite IP65/65	DTFN Elite IP65/54	DTFN IP65/54	DTFA Elite IP65/54	DTFA IP65/54	Lister IP65/20	DTBY IP65	DTFN TA Elite IP65/54	Curie Hazardous IP65/65	Jenner Hazardous IP65/65
1		•										
10		•										
100	A&B	•	•								•	•
1,000			•	•		•				•	•	•
10,000	C		•	•	•	•	•		•	•	•	•
100,000	D		•	•	•	•	•	•	•	•	•	•
Unclassified	Unclassified		•	•	•	•	•	•	•	•	•	•
CONTAINMENT												
ACDP 1-2			•	•	•	•	•				•	•
ACDP 3-4			•								•	
HAZARDOUS												
Zone 1 or 2											•	•
CEILING COMPATIBILITY												
Cut Aperture in ceilings up to 108mm thick for Back Access & 90mm for Front Access as standard			•	•	•					•	front • access only	
Cut Aperture up to 170 mm thick for back access & 153mm for Front access with Deep Ceiling Bracket			•	•	•					•		
25mm Exposed Tee						•	•	•				•
Spring Tee (Order a recessing panel if it is necessary to maintain room integrity)						•	•	•				•
Surface Mounted		•							•			
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Note: We recommend only the Elite versions of DTFN and DTFA are used in class 1000 rooms

