



ENCLOSURE INGRESS

①		0 No protection of persons against contact with live or moving parts inside the enclosure. No protection of equipment against ingress of solid foreign bodies.
①		1 Protection against inadvertent contact with live or moving parts inside the enclosure by a large surface of the human body, such as a hand, but no protection against deliberate access. Protection against ingress of large foreign bodies.
②		2 Protection against live or moving parts inside the enclosure by fingers. Protection against ingress of medium size foreign bodies.
③		3 Protection against contact with live or moving parts inside the enclosure by tools, wires or objects thicker than 2.5mm. Protection against ingress of small solid foreign bodies.
④		4 Protection against contact with live or moving parts inside the enclosure by tools, wires or objects thicker than 1.0mm. Protection against ingress of very small solid foreign bodies.
⑤		5 Complete protection against contact with live or moving parts inside the enclosure. Protection against harmful deposits of dust. The ingress of dust cannot enter in an amount sufficient to interfere with satisfactory operation of the equipment. (Dustproof).
⑥		6 Complete protection against contact with live or moving parts inside the enclosure and against the ingress of dust. (Dust-tight).

The second number in the classification indicates the degree of protection against ingress of liquids. There are 9 classes numbered from 0 to 8. The higher number the higher the degree of protection.

PROTECTION CLASSIFICATIONS(IP)

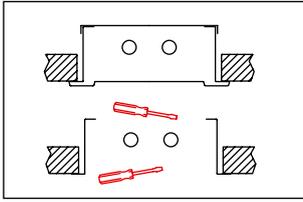
①		0 No Protection.
①		1 Protection against drops of condensed water. Drops of condensed water falling on the enclosure have no harmful effect.
②		2 Protection against falling liquid which when the enclosure is tilted at an angle up to 15° from the vertical, shall have no harmful effect. (Drip-proof).
③		3 Protection against rain. Driving rain at an angle of up to 60° from the vertical shall have no harmful effect. (Rain-proof).
④		4 Protection against splashing. Liquid splashed from any direction shall have no harmful effect. (Splash-proof).
⑤		5 Protection against water jets. Water projected by a nozzle from any direction under stated conditions shall have no harmful effect. (Jet-proof).
⑥		6 Protection against conditions on ship's decks, usually referred to as 'deck watertight' equipment. Water from heavy seas shall not enter the enclosure under prescribed conditions.
⑦		7 Protection against immersion in water. It shall not be possible for water to enter the enclosure under stated conditions of pressure and time.
⑧		8 Protection against indefinite immersion on water. Under specified pressure, it shall not be possible for water to enter the enclosure.

A rain-proof luminaire for example, with protection from finger contact within the enclosure would be IP23, where the number 2 signifies the protection against finger contact and the number 3 signifies protection against rain. As a further example, a dust-tight luminaire which can be hosed down would carry the number IP65.

MEASURED PARTICLE SIZE (MICROMETERS) USA 209D					
CLASS	0.1	0.2	0.3	0.5	5.0
1	35	7.5	3	1	NA
10	350	75	30	10	NA
100	NA	750	300	100	NA
1000	NA	NA	NA	1000	7
10000	NA	NA	NA	10000	70
100000	NA	NA	NA	100000	700

STANDARDS			
Country	USA	UK	ISO
Standard	209D	BS. 5295	Standard
Issue Date	1988	1989	1997
	1	C	3
	10	D	4
	100	E or F	5
	1000	G or H	6
	10000	J	7
	100000	K	8

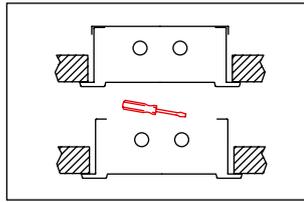
Front/Back Access



- The luminaire diffuser frame is removable from the lit space for maintenance.
- The luminaire back panel is removable from the ceiling void space for maintenance without disruption to the operations in the room.
- The luminaire body and diffuser frame are offered through the ceiling aperture from the lit space.
- Luminaire metalwork is manufactured to support maintenance engineers accidentally standing on the back of the lid in the ceiling void.
- The diffuser frame provides IP65 to the lit space. The canopy provides IP54 to the void.

Specify: MLFB/

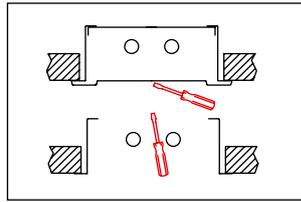
Back Access



- The back panel is removable from the ceiling space for maintenance without disruption to operations in the room.
- The luminaire body and diffuser frame are supplied attached, and are offered through the ceiling aperture from the lit space.
- The luminaire is supported on the ceiling from the ceiling void.
- Luminaire metalwork is manufactured to support maintenance engineers accidentally standing on the back of the lid in the ceiling void.
- The diffuser frame provides IP65 to the lit space.

For rating to ceiling void specify:
IP54 to the void: MLB/
IP65 to the ceiling: MLB/IP65/

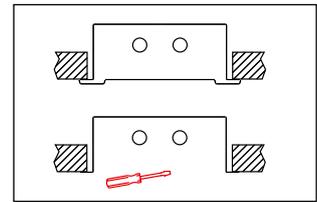
Dual Front Access



- The luminaire diffuser frame is removable from the lit space for maintenance.
- The luminaire back panel is removable from the lit space when the diffuser frame is removed to allow maintenance access to the void through the luminaire.
- The canopy is installed from the lit space using swing-out adjustable side arms which maintain the IP integrity.
- The diffuser frame provides IP65 to the lit space. The canopy maintains IP54 to the ceiling void when the diffuser frame is removed for maintenance.

Specify: MLD/

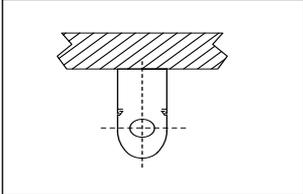
Front Access



- The luminaire diffuser frame is removable from the lit space for maintenance.
- The canopy is installed from the lit space using swing-out adjustable side arms which maintain the IP integrity.
- The diffuser frame provides IP65 to the lit space. When removed for maintenance.
- When the diffuser frame is removed for maintenance the canopy maintains an IP rating listed below.

Rating to ceiling void specify:
IP65 to the void: MLM/IP65/
IP54 to the void: MLM/
IP20 to the void: MLR/

Lamina (Teardrop)



- Can be supplied in continuous rows or as individual units to integrate on to specialist ceiling grid.
- Manufactured from materials providing absolute minimum particle generation for high specification clean rooms.

Specify: CL2/

FS 209D	CL2 Teardrop	65/65 MLM	65/54 MLM/IP65	65/54 MLMB	65/65 MLB/IP65	65/54 MLB	65/54 MLFB	65/54 MLD	65/20 MLR	65/54 MLS
1	●	●			●	●				●**
10	●	●			●	●	●			●
100	●	●	●		●	●	●	●		●
1,000	●	●	●	●	●	●	●	●	●	●
10,000		●	●	●	●	●	●	●	●	●
100,000			●	●	●	●	●	●	●	●
Containment										
ACDP 3-4		●								
ACDP 1-2		●								
Ceiling Integration Note: In all cases ceiling depth must be advised										
Composite		●*	●*		●	●	●	●		
Modular		●	●						●	
Spring Tee				●						
Surface										●
Lamina	●									
*Non-modular ** Suitable for Class 1 applications with solid ceilings										