

SBS5312 Lighting Technology

<http://ibse.hk/SBS5312/>

Typical Data for Lumen Method Calculation

The Utilisation Factor (UF) of a luminaire (also known as Coefficient of Utilization (CU)) is the proportion of the light emitted by the lamps that reaches a particular plane, e.g. the horizontal working plane, either directly or by reflection. It takes into account the properties of the room, its shape and surface reflectances, as well as the luminaire characteristics. A high utilisation factor indicates that much of the light reaches the horizontal plane, but may also mean that there is little reaching the walls or ceiling.

Table 1. Typical reflectance factors

Colour	Reflectance Factor
White or Cream	0.7 or 0.8
Yellow	0.6
Light Green or Pink	0.5
Sky Blue or Grey	0.4
Beige or Brown	0.3

Table 2. Typical data for a twin-tube luminaire used to calculate utilisation factors

Room reflectances			Room index								
C	W	F	0.75	1.00	1.25	1.50	2.00	2.50	3.00	4.00	5.00
0.7	0.5	0.2	0.58	0.61	0.65	0.67	0.70	0.71	0.73	0.74	0.75
	0.3		0.55	0.58	0.62	0.64	0.67	0.69	0.71	0.73	0.74
	0.1		0.52	0.56	0.59	0.62	0.65	0.68	0.69	0.71	0.73
0.5	0.5	0.2	0.57	0.60	0.63	0.65	0.68	0.69	0.70	0.72	0.73
	0.3		0.54	0.58	0.61	0.63	0.66	0.68	0.69	0.71	0.72
	0.1		0.51	0.56	0.59	0.61	0.64	0.66	0.68	0.69	0.71
0.3	0.5	0.2	0.56	0.59	0.62	0.64	0.66	0.67	0.68	0.69	0.70
	0.3		0.53	0.57	0.60	0.62	0.64	0.66	0.67	0.68	0.69
	0.1		0.50	0.55	0.58	0.60	0.63	0.65	0.66	0.68	0.68
0.0	0.0	0.0	0.46	0.54	0.57	0.58	0.61	0.62	0.63	0.65	0.65

Table 3. Typical maintenance factors

Environmental Condition	Maintenance Factor
Clean	0.9
Average	0.8
Dirty	0.7

Useful Websites

Lighting Maintenance Factor <http://www.myledlightingguide.com/lighting-maintenance-factor>