Technical Data of Lighting Installation for Building Energy Code (BEC) 2021

Form EE-LG

(Please refer to Section 5, Code of Practice for Energy Efficiency of Building Services Installation 2021 Edition)

Part 1 – Lighting Installation Summary	(* Please delete, if not applicable)	Page of
Name of Building / Unit / Common Area *		
Address of Building / Unit / Common Area *		
Date of Declaration by Registered Energy Assessor in Fo	orm EE2 / EE3 / EE4 *	
Documents submitted (Please tick where applicable)		No. of sheets
☐ Form EE-LG Part 1 : Lighting Installation Summary		
☐ Form EE-LG Part 2 : Lighting Power Density & Lighting Contr	ol Point Worksheet	
$\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ $	6 of Schedule 2	
☐ Form EE-LG Part 4 : Automatic Lighting Control Worksheet		
☐ Form EE-LG Part 5 : Space Annual Lighting Energy Consumpt	tion	
☐ Form EE-LG Part 6 : Declaration		
\square Layout drawings showing the lighting installation governed by	by BEC	
$\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ $	ach drawing	
Others (Please give details)		

Remarks (applicable to Parts 1 to 5):-

- 1) Ref. Nos. of all equipment, systems, spaces etc. in this Form should be consistent with the Ref. Nos. shown in drawings.
- 2) Lighting layouts should:
 - include a luminaire schedule to show the symbol, reference number, lamp type (such as but not limited to T5 tubular fluorescent, T8 tubular fluorescent, compact fluorescent, metal halide, light emitting diode, high pressure sodium, etc) and power consumption (including lamp & control gear) of each luminaire;
 - show, in each space, all newly installed / retrofitted lighting installation
 - governed by the LPD requirement in BEC Table 5.4; and/or
 - solely used for (a) illumination of an exhibit or product on display, (b) decoration, (c) visual production, or (d) any combination of the purposes specified in (a), (b) and (c);
 - show the lighting control points that control the on/off of lighting installation installed in each space;
 - show the assigned lighting control zones with the area of each lighting zone indicated and supplement with layout/section and to identify the area of the relevant fenestration on exterior wall and/or the area of the relevant overhead skylight on plan and elevation, as appropriate;
 - identify each space by its Name of space / space Ref. No, which should be same as shown in this Form;
 - indicate the lighting installation not governed by the BEC, if shown on the drawing, with an appropriate symbol, marking or colouring different from the ones governed.
- 3) All documents including this Form are for demonstration of compliance with the BEC for the lighting installation, and should cover all the relevant items governed by the BEC in respect of the lighting installation.

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Part 1 – Lighting Installation Summary	(* Please delete, if not applicable)	Page of
1) Should space provided in this Form he inadequate	please provide details with clear cros	s-referencing

- 4) Should space provided in this Form be inadequate, please provide details with clear cross-referencing on separate sheets and attach to this Form.
- 5) Descriptions and numbering of each installation, system, equipment, building block, floor, room, space etc. in each of Forms EE-LG, EE-AC, EE-EL, EE-LE & EE-PB, should such appear in more than one type of Form, should be **identical**.
- 6) Any incomplete or erroneous information in this Form may render this Form being regarded invalid.

Part 2 – Lighting Power Density & Lighting Control Point Worksheet							Page	_ of				
Please provide in requirement and			•	_		y the ligh	ting pov	ver densi	ty (LPD)		Requirement and no. of li- control point (BEC Clause 5.5)	ghting ts in BEC
	Name of				Nominal	Lamp control	Total	Installed	Installed no. of	LPD in BEC	Table 5.4	Min. no. of lighting control points *3
Drawing No. of lighting layout		Area of space (m²)	Type of lamp installed* ⁵	Quantity (No.)	lamp wattage (W)*5	gear loss (W)*5	circuit wattage (W)*5	PD (W/m²) * 2		Applicable type of space *4	Max allowed (W/m²)	
				(Pleas	se insert add	ditional row if	necessary)					

Remarks (applicable to Part 2):-

^{*1} Please indicate the space Ref No. / name of space on the relevant drawing. Spaces each having total electrical power consumed by the complete fixed lighting installation not exceeding 70W may be excluded.

^{*2} Lighting where BEC Clause 5.1.2 is applicable and emergency lighting of non-maintained type can be excluded in the LPD calculation.

For space that is categorized as office, please follow BEC Table 5.5. For space other than an office, please compute the min. no. based on one control point serving 500m² or less. (BEC Clause 5.5.1). Insert "N/A" for any space with lighting installation designed for 24 hours a day & 7 days a week operation (BEC Clause 5.5.5). Insert "NCR" if the lighting works is NOT involved a complete rewiring of the existing lighting circuits in that area under FOC.

^{*4} Please insert the type of space per categorization in BEC Table 5.4.

For multiple lamp types in a space, fill in the "Total circuit wattage" only and insert " --- " into corresponding "Type of lamp installed", "Nominal lamp wattage" and "Lamp control gear loss" columns. Submit the details of each of the lamp type, nominal lamp wattage & lamp control gear loss of in that space on separate sheets with clear cross-referencing and attach to this form.

Part 3 – Lighting In	stallation as Specified in It	em 6 of Schedule 2 (Please tick w	vhere applicab	ole)		Page of
Ordinance*1?	he lighting power density requiremen	nt (LPD) in BEC Table 5.4 and installed with	ı lighting instal	llation as specific	ed in item 6 of So	chedule 2 of the
Drawing No. of lighting layout	Name of space / Space Ref. No.	Purpose of the lighting installation '(please tick(s) where applicable)		Area of space (m²)	Installed LPD (W/m²)	Independent lighting control for lighting to which the Ordinance is not applicable? (BEC clause 5.5.4)
		(Please insert additional row if necessa	ary)			
	1	□ (a) □ (b)	(c)			☐ Yes
		□ (a) □ (b)	(c)			☐ Yes
		□ (a) □ (b)	(c)			☐ Yes
	,	□ (a) □ (b)	(c)			☐ Yes
		□ (a) □ (b)	(c)			☐ Yes
		□ (a) □ (b)	(c)			☐ Yes
		□ (a) □ (b)	(c)			☐ Yes
		□ (a) □ (b)	(c)			☐ Yes
		□ (a) □ (b)	(c)			☐ Yes
		□ (a) □ (b)	(c)			☐ Yes
		□ (a) □ (b)	(c)			☐ Yes
		□ (a) □ (b)	(c)			☐ Yes
		□ (a) □ (b)	(c)			☐ Yes
		□ (a) □ (b)	(c)			☐ Yes

^{*1} Item 6 of Schedule 2 of the Ordinance includes special lighting installation that is solely used for - (a) illumination of an exhibit or product on display; (b) decoration; (c) visual production; or any combination of the purposes specified in (a), (b) and (c).

^{*2} Identify objects / features / elements that served by the decoration lighting on the space provided when ticking \square (b). When ticking \square (b), site photos and photomontage showing the lighting effect are attached with this form.

Part 4 – Automatic Lighting Control (BEG	C Clause 5.6 and Table 5.4)			Pa	age of			
Space(s) governed by the automatic lighting control requirement (BEC Table 5.4)	Automatic Lighting control (BEC Clauses 5.6.1 (please tick where applicable)				Daylight Responsive Control (BEC Clause 5.6.2 and 5.6.3) (please tick where applicable)			
					Daylight	Area (or Tota	l Area) of: *3	
Drawing No. of Name of space / Area of space (m²)	Type of control device deployed *2	Manual override provided	responsive control provided	Fenestration (m²)	Assigned lighting zone(s) (m²)			
	□ (a)	☐ Yes ☐ N/A	☐ Yes					
	□ (b) □ (c)		□ N/A					
	□ (a)	☐ Yes ☐ N/A	☐ Yes					
	□ (b) □ (c)		□ N/A					
	□ (a)	☐ Yes ☐ N/A	☐ Yes					
	□ (b) □ (c)		□ N/A					
	□ (a)	☐ Yes ☐ N/A	☐ Yes					
	□ (b) □ (c)	1 163 1 10// (□ N/A					
	□ (a)	☐ Yes ☐ N/A	☐ Yes					
	□ (b) □ (c)	L les LIVA	□ N/A					
	□ (a)	□ Yes □ N/A	☐ Yes					
	□ (b) □ (c)	Li res Li IVA	□ N/A					
	□ (a)		☐ Yes					
	□ (b) □ (c)	☐ Yes ☐ N/A	□ N/A					
	□ (a)		☐ Yes					
	□ (b) □ (c)	☐ Yes ☐ N/A	□ N/A					
	□ (a)		☐ Yes					
	□ (b) □ (c)	☐ Yes ☐ N/A	□ N/A					

Remarks (applicable to Part 4):-

^{*1} Please indicate the space Ref No. / name of space on the relevant drawing. Exclude spaces each with total electrical power consumed by the complete fixed lighting installation of 150W or below (BEC Clause 5.6.1.1), but such exception is not applicable to the lighting installation on lift car (BEC Clause 5.6.1.7).

^{*2} Tick (a) for automatic time scheduling device. Please identify the type of control (e.g. By BMS, programmable timer, etc.) and the anticipated off-hour duration. Tick (b) for deploying occupant sensor. Tick (c) for other device as identified on the space provided.

^{*3} Please insert total area for multiple discrete fenestrations or series of fenestration within the space. Please indicate the total of all the lighting zone areas within the space.

Part 5 –Space Annual Lighting Energy Consumption (Complete this part for FOC submission)							
Computation of Lighting Space Annual Energy Consumption (for each space with total fixed lighting electric power above 70W)							
Name of space / Space Ref. No. *1*2	Internal floor area (m²) *3	Total circuit wattage of installed lighting installations (kW)	Weekly operation hours, weekdays (hr) *4	Weekly operation hours, non-weekdays (hr) *4	Yearly operation hours (hr) *5	Annual lighting energy consumption of the space (kWhr/m²/yr)	
		(Please	e insert additional row if ne	ecessary)			

Remarks (applicable to Part 5):-

- ^{*1} Input <u>each</u> of the space involved in the major retrofitting works. Exclude tenant areas intended to be under bare shell condition. Exclude lighting installation as prescribed under item 6 of schedule 2 of the BEEO.
- *2 Collectively input only the same space types with the same operation hours (e.g. meeting room no. 1, 2, and 3 input as the "meeting room" if each of the meeting room is of the same operation hour; all corridors on each typical floor as the "corridor").
- ^{*3} Internal floor area of each of the space or the summation of the internal floor areas of all the spaces of the same type and operation hour Summation of the internal floor areas of the spaces as prescribed in Remarks Item 2.
- *4 Exclude the reduced operation hours contributed by occupancy senor and/or daylight responsive control.
- *5 Fill in only the estimated yearly operation hour using the best information available for space not likely with regular weekly operation hour (e.g. community hall, exhibition hall/gallery, multi-function room, sports arena etc.).

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Part 6 – Declaration		
substantiation materials attached had compliance with the Building Energy I understand that any missing inform	y declare that all the information contained inverse been thoroughly examined and well preporation code. In action, inconsistency and incorrectness on the graph of the approval process and having the entire	pared to demonstrate the ne submitted materials /
Name of the REA:	Registration No.:	
Signature of the REA	Date:	
		DD / MM / YYYY