Cable Calculations

Project Name Proposed Residential Development at Edmonstown REV D
Project Number 21092

Midi Pillar Number 1							
Circuit	Tabulated Voltage drop (cable)	Total columns on circuit	Total luminaire Current (I_D)	Total circuit length	kVA for pillar	Voltage drop	Voltage drop percentage
1	4.4	7	2.00	304	0.97	2.68	1.16%
2	4.4	7	2.21	300		2.92	1.27%
Circuit	Z_E	Conductor Resistance Ω/km	Z_S	Circuit Impedance Ohm	Fault Current Amp	Circuit Fuse (I_N) Amp	Cable size
1	0.35	1.9	1.16	1.5	152.8	10	$10mm^2$
2	0.35	1.9	1.14	1.5	154.4	10	$10mm^2$

Note that circuit length includes an extra 10m per column to allow for turns, access and other potential issues.
It is the duty of the electrical contractor to undertake appropriate electrical safety tests and to certify the electrical installation.

The voltage drop on each circuit is below the allowed maximum.
The minimum sized cable permissible under I.S. 10101:2020 is 6mm SQ.
It is the duty of the electrical contractor to calculate the appropriate fuse size.

Approximate Total Cable (m) =	520	$10mm^2$
Approximate Total Cable (m) =	2823	$6mm^2$

Midi Pillar Number 2							
Circuit	Tabulated Voltage drop (cable)	Total columns on circuit	Total luminaire Current (I_D)	Total circuit length	kVA for pillar	Voltage drop	Voltage drop percentage
1	7.3	6	0.39	196	0.29	0.56	0.24%
2	7.3	3	0.43	127		0.40	0.17%
3	7.3	5	0.42	174		0.53	0.23%
Circuit	Z_E	Conductor Resistance Ω/km	Z_S	Circuit Impedance Ohm	Fault Current Amp	Circuit Fuse (I_N) Amp	Cable size
1	0.35	3.08	1.21	1.6	147.7	10	$6mm^2$
2	0.35	3.08	0.78	1.1	203.1	10	$6mm^2$
3	0.35	3.08	1.07	1.4	161.8	10	$6mm^2$

Note that circuit length includes an extra 10m per column to allow for turns, access and other potential issues.
It is the duty of the electrical contractor to undertake appropriate electrical safety tests and to certify the electrical installation.

Midi Pillar Number 3							
Circuit	Tabulated Voltage drop (cable)	Total columns on circuit	Total luminaire Current (I_D)	Total circuit length	kVA for pillar	Voltage drop	Voltage drop percentage
1	7.3	2	0.06	38	0.09	0.02	0.01%
2	7.3	2	0.10	43		0.03	0.01%
3	7.3	5	0.24	160		0.28	0.12%
Circuit	Z_E	Conductor Resistance Ω/km	Z_S	Circuit Impedance Ohm	Fault Current Amp	Circuit Fuse (I_N) Amp	Cable size
1	0.35	3.08	0.23	0.6	393.8	10	$6mm^2$
2	0.35	3.08	0.26	0.6	374.1	10	$6mm^2$
3	0.35	3.08	0.99	1.3	172.2	10	$6mm^2$

Note that circuit length includes an extra 10m per column to allow for turns, access and other potential issues.
It is the duty of the electrical contractor to undertake appropriate electrical safety tests and to certify the electrical installation.

Midi Pillar Number 4							
Circuit	Tabulated Voltage drop (cable)	Total columns on circuit	Total luminaire Current (I_D)	Total circuit length	kVA for pillar	Voltage drop	Voltage drop percentage
1	7.3	2	0.14	54	0.06	0.06	0.02%
2	7.3	2	0.14	57		0.06	0.03%
Circuit	Z_E	Conductor Resistance Ω/km	Z_S	Circuit Impedance Ohm	Fault Current Amp	Circuit Fuse (I_N) Amp	Cable size
1	0.35	3.08	0.33	0.7	336.9	10	$6mm^2$
2	0.35	3.08	0.35	0.7	328.0	10	$6mm^2$

Note that circuit length includes an extra 10m per column to allow for turns, access and other potential issues.
It is the duty of the electrical contractor to undertake appropriate electrical safety tests and to certify the electrical installation.

Midi Pillar Number 5							
Circuit	Tabulated Voltage drop (cable)	Total columns on circuit	Total luminaire Current (I_D)	Total circuit length	kVA for pillar	Voltage drop	Voltage drop percentage
1	7.3	7	0.52	213	0.18	0.81	0.35%
2	7.3	6	0.27	195		0.38	0.17%
Circuit	Z_E	Conductor Resistance Ω/km	Z_S	Circuit Impedance Ohm	Fault Current Amp	Circuit Fuse (I_N) Amp	Cable size
1	0.35	3.08	1.31	1.7	138.4	10	$6mm^2$
2	0.35	3.08	1.20	1.6	148.3	10	$6mm^2$

Note that circuit length includes an extra 10m per column to allow for turns, access and other potential issues.
It is the duty of the electrical contractor to undertake appropriate electrical safety tests and to certify the electrical installation.

Midi Pillar Number 6							
Circuit	Tabulated Voltage drop (cable)	Total columns on circuit	Total luminaire Current (I_D)	Total circuit length	kVA for pillar	Voltage drop	Voltage drop percentage
1	7.3	2	0.14	65	0.23	0.07	0.03%
2	7.3	4	0.42	135		0.41	0.18%
3	7.3	9	0.43	231		0.73	0.32%
Circuit	Z_E	Conductor Resistance Ω/km	Z_S	Circuit Impedance Ohm	Fault Current Amp	Circuit Fuse (I_N) Amp	Cable size
1	0.35	3.08	0.40	0.8	306.5	10	$6mm^2$
2	0.35	3.08	0.83	1.2	194.7	10	$6mm^2$
3	0.35	3.08	1.42	1.8	129.7	10	$6mm^2$

Note that circuit length includes an extra 10m per column to allow for turns, access and other potential issues.
It is the duty of the electrical contractor to undertake appropriate electrical safety tests and to certify the electrical installation.

Midi Pillar Number 7							
Circuit	Tabulated Voltage drop (cable)	Total columns on circuit	Total luminaire Current (I_D)	Total circuit length	kVA for pillar	Voltage drop	Voltage drop percentage
1	7.3	4	0.28	145	0.24	0.30	0.13%
2	7.3	4	0.34	142		0.35	0.15%
3	7.3	7	0.43	206		0.65	0.28%
Circuit	Z_E	Conductor Resistance Ω/km	Z_S	Circuit Impedance Ohm	Fault Current Amp	Circuit Fuse (I_N) Amp	Cable size
1	0.35	3.08	0.89	1.2	185.0	10	$6mm^2$
2	0.35	3.08	0.87	1.2	187.8	10	$6mm^2$
3	0.35	3.08	1.27	1.6	142.1	10	$6mm^2$

Note that circuit length includes an extra 10m per column to allow for turns, access and other potential issues.
It is the duty of the electrical contractor to undertake appropriate electrical safety tests and to certify the electrical installation.

Midi Pillar Number 8							
Circuit	Tabulated Voltage drop (cable)	Total columns on circuit	Total luminaire Current (I_D)	Total circuit length	kVA for pillar	Voltage drop	Voltage drop percentage
1	7.3	2	0.16	70	0.07	0.08	0.04%
2	7.3	2	0.14	46		0.05	0.02%
Circuit	Z_E	Conductor Resistance Ω/km	Z_S	Circuit Impedance Ohm	Fault Current Amp	Circuit Fuse (I_N) Amp	Cable size
1	0.35	3.08	0.43	0.8	294.4	10	$6mm^2$
2	0.35	3.08	0.28	0.6	363.1	10	$6mm^2$

Note that circuit length includes an extra 10m per column to allow for turns, access and other potential issues.
It is the duty of the electrical contractor to undertake appropriate electrical safety tests and to certify the electrical installation.

Midi Pillar Number 9							
Circuit	Tabulated Voltage drop (cable)	Total columns on circuit	Total luminaire Current (I_D)	Total circuit length	kVA for pillar	Voltage drop	Voltage drop percentage
1	7.3	6	0.84	214	0.19	1.31	0.57%
Circuit	Z_E	Conductor Resistance Ω/km	Z_S	Circuit Impedance Ohm	Fault Current Amp	Circuit Fuse (I_N) Amp	Cable size
1	0.35	3.08	1.32	1.7	137.9	10	$6mm^2$

Note that circuit length includes an extra 10m per column to allow for turns, access and other potential issues.
It is the duty of the electrical contractor to undertake appropriate electrical safety tests and to certify the electrical installation.

Management Midi Pillar Number 10							
Circuit	Tabulated Voltage drop (cable)	Total columns on circuit	Total luminaire Current (I_D)	Total circuit length	kVA for pillar	Voltage drop	Voltage drop percentage
1	7.3	1	0.06	15	0.01	0.01	0.00%
Circuit	Z_E	Conductor Resistance Ω/km	Z_S	Circuit Impedance Ohm	Fault Current Amp	Circuit Fuse (I_N) Amp	Cable size
1	0.35	3.08	0.09	0.4	519.9	10	$6mm^2$

Note that circuit length includes an extra 10m per column to allow for turns, access and other potential issues.
It is the duty of the electrical contractor to undertake appropriate electrical safety tests and to certify the electrical installation.

Management Midi Pillar Number 11							
Circuit	Tabulated Voltage drop (cable)	Total columns on circuit	Total luminaire Current (I_D)	Total circuit length	kVA for pillar	Voltage drop	Voltage drop percentage
1	7.3	1	0.07	15	0.12	0.01	0.00%
2	7.3	4	0.28	157		0.32	0.14%
3	7.3	5	0.19	171		0.24	0.10%
Circuit	Z_E	Conductor Resistance Ω/km	Z_S	Circuit Impedance Ohm	Fault Current Amp	Circuit Fuse (I_N) Amp	Cable size
1	0.35	3.08	0.09	0.4	519.9	10	$6mm^2$
2	0.35	3.08	0.97	1.3	174.6	10	$6mm^2$
3	0.35	3.08	1.05	1.4	163.9	10	$6mm^2$

Note that circuit length includes an extra 10m per column to allow for turns, access and other potential issues.
It is the duty of the electrical contractor to undertake appropriate electrical safety tests and to certify the electrical installation.

Management Midi Pillar Number 12							
Circuit	Tabulated Voltage drop (cable)	Total columns on circuit	Total luminaire Current (I_D)	Total circuit length	kVA for pillar	Voltage drop	Voltage drop percentage
1	7.3	6	0.18	138	0.09	0.18	0.08%
2	7.3	5	0.19	146		0.20	0.09%
Circuit	Z_E	Conductor Resistance Ω/km	Z_S	Circuit Impedance Ohm	Fault Current Amp	Circuit Fuse (I_N) Amp	Cable size
1	0.35	3.08	0.85	1.2	191.7	10	$6mm^2$
2	0.35	3.08	0.90	1.2	184.1	10	$6mm^2$

Note that circuit length includes an extra 10m per column to allow for turns, access and other potential issues.
It is the duty of the electrical contractor to undertake appropriate electrical safety tests and to certify the electrical installation.