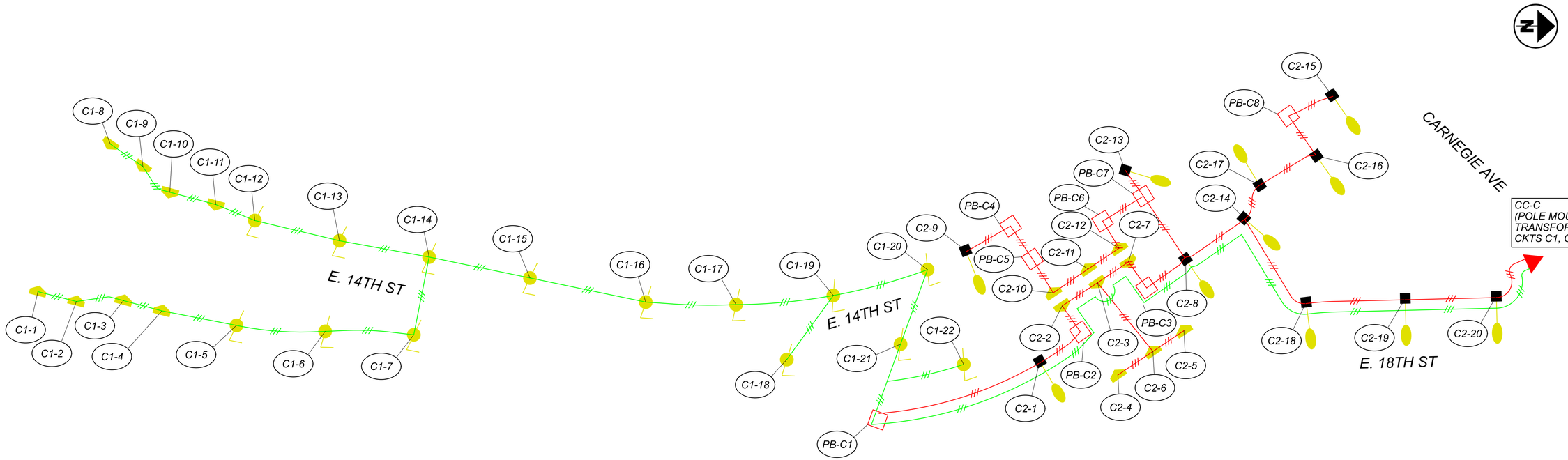
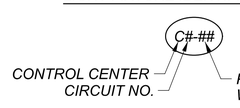
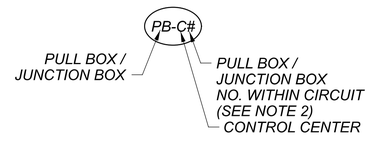


LIGHT FIXTURE IDENTIFICATION NO.



PULL BOX / JUNCTION BOX IDENTIFICATION NO.



LEGEND:

- *WOOD POLE, EXISTING, WITH 1 NEW LED LUMINAIRE, 30' HEIGHT*
- *WOOD POLE WITH 1 LED LUMINAIRE, 30' HEIGHT*
- *BRONZE SHOEBOX POLE WITH 1 LED LUMINAIRE, 30' HEIGHT*
- *UNDERPASS LED WALLPACK FIXTURE*
- *TRANSFORMER (BY CPP)*
- *PULL BOX / JUNCTION BOX*
- *CIRCUIT WIRE (SINGLE-PHASE, 3-WIRE SYSTEM)*

POWER SERVICE DATA									
POWER SERVICE	*LINE VOLTAGE (VOLTS)*	*CONNECTED LOAD (KVA)*	*SERVICE ENTRANCE CABLE (AWG)*	*ENCLOSURE RATING (AMPS)*	*CIRCUIT NO.*	*CIRCUIT LOAD (AMPS)*	*CIRCUIT FUSE SIZE (AMPS)*	*CIRCUIT CABLE SIZE (AWG)*	*MAINTAINING AGENCY*
C	*120V / 240V (SINGLE PHASE, 3-WIRE)*	*5.08*	*4*	*60*	*1*	*10.12*	*20*	*4*	*CPP*
					2	*11.05*	*20*	*4*	

NOTES:

1) "CIRCUIT CABLE SIZE" REFERS TO THE WIRE AWG COMING OUT OF THE CONTROL CENTER FOR EACH CIRCUIT.

2) ONLY PULL BOXES / JUNCTION BOXES FOR BRANCH CIRCUITS AND JUNCTION BOXES BREAKING UP LONG CONDUIT RUNS ARE SHOWN IN THE CIRCUIT SCHEMATIC.

3) THE CONTRACTOR SHALL INSTALL THE CONDUIT, TRANSFORMER, CONDUCTORS AND POLES; CONNECTIONS AT THE TRANSFORMER SHALL BE INSTALLED BY CPP FORCES.

HORIZONTAL SCALE IN FEET
0 NTS

CIRCUIT SCHEMATIC & POWER SERVICE DATA - TRANSFORMER C

DESIGN AGENCY
Michael Baker INTERNATIONAL

DESIGNER

REVIEWER
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PROJECT ID
82382

SHEET SLC1003 TOTAL $STOTAL

CUY-90-16.28 (CCG3A)

MODEL: SHEET PAPERSIZE: 34x22 (in.) DATE: 4/15/2022 TIME: 1:13:30 PM USER: Jennifer.DoVale
pw:\\mb-us-pw.bentley.com:mb-us-pw-03\Documents\Cleveland_OH01_Projects\ODOT\District12\82382400-Engineering\Lighting\Sheets\82382_LC1003.dgn

Fixture	Use/Location	System Wattage	Input Current (240V)	25% Contingency
GE Evolve ERL2 (400W equiv)	Wood Poles on Carnegie Avenue	194	0.81	1.01
GE Evolve ERLH (250W equiv)	Wood Poles on E. 14th, Midtown Connector, Cedar Avenue, and Central Connector	111	0.46	0.58
Cooper Lighting Solutions Streetworks USSL	Shoebox fiberglass poles	153	0.64	0.80
VersaLED WP3-Q	Wall Pack for lighting under bridges	47	0.20	0.25

Cooper Lighting Solutions Streetworks USSL

POWER AND LUMENS (USSL)

Light Engine		C01	C027	C029	C02
Power (Watts)		52	96	131	153
Input Current @ 120V (A)		0.43	0.80	1.09	1.32
Input Current @ 277V (A)		0.19	0.35	0.48	0.57
Input Current @ 347V (A)		0.17	0.30	0.41	0.48
Input Current @ 487V (A)		0.12	0.22	0.30	0.35
Distribution					
Type II	4000K Lumens	7,123	13,205	17,172	20,083
	BUG Rating	B2-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G3
	3000K Lumens	6,994	12,965	16,860	19,718
Type III	4000K Lumens	7,111	13,183	17,144	20,050
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4

VersaLED WP3-Q

ILLUMINATION
- 41.3W LED
- 47 System Watts
~ 250W HID

MOUNTING
- Optional cast aluminum mounting plate mounts directly over a 4" recessed outlet box, or use 1/2" surface conduit

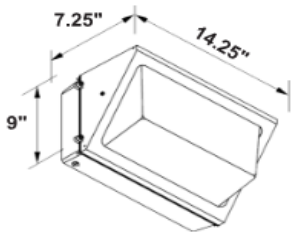
ORDERING INFORMATION

CATALOG #	LUMENS	COLOR	LENS
WP3-Q-41L-QT-30K-PL	4,473 Lumens	3000K	Prismatic
WP3-Q-41L-QT-30K-DL	2,583 Lumens	3000K	Diffused
WP3-Q-41L-QT-40K-PL*	5,283 Lumens	4000K	Prismatic
WP3-Q-41L-QT-40K-DL*	5,177 Lumens	4000K	Diffused
WP3-Q-41L-QT-50K-PL*	5,503 Lumens	5000K	Prismatic
WP3-Q-41L-QT-50K-DL*	5,393 Lumens	5000K	Diffused

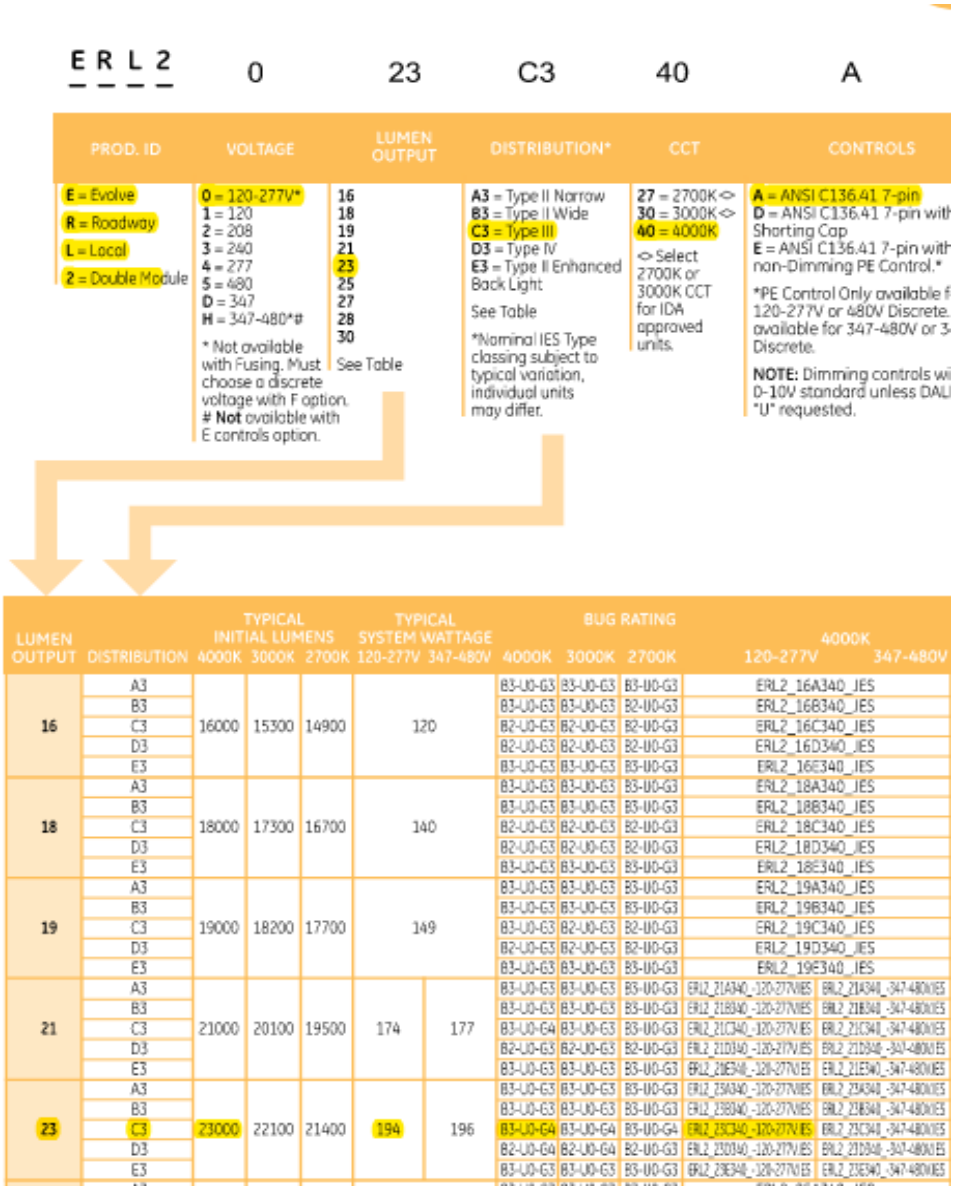
OPTIONS (Factory Installed)		
EBLED	-	Integral EM Ballast
SGF	-	Single Fusing
DBF	-	Double Fusing
SGP	-	Surge Protection
OCS	-	Occupancy Sensor

*Dimming for Mounting of 8 - 40'

ACCESSORIES (Order Separately, Ships on Side)		
WP3-Q-LG	-	Vandal Guard
WP3-Q-GS	-	Glare Shield
WP3-Q-WG	-	Wire Guard



GE Evolve ERL2 (400W equiv)

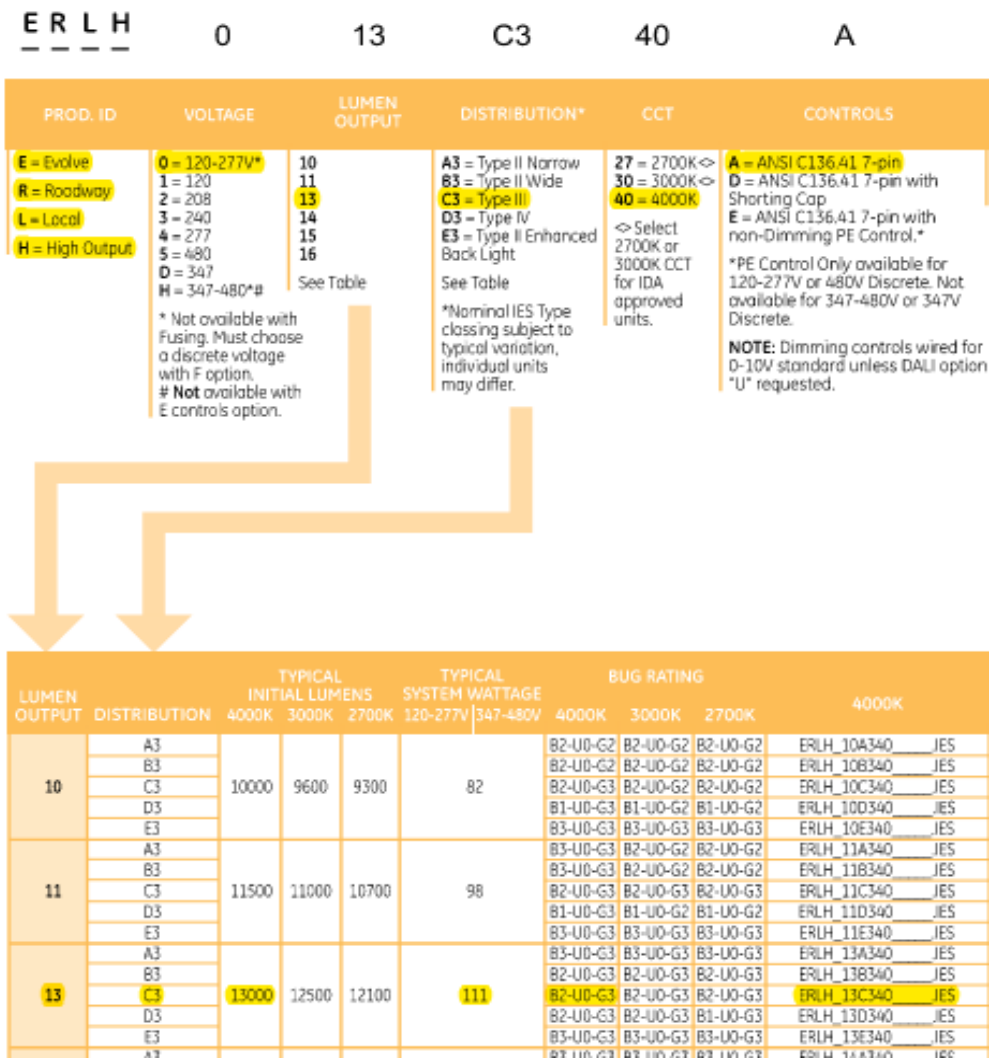


E R L 2 _ _ _ _ | 0 | 23 | C3 | 40 | A

PROD. ID	VOLTAGE	LUMEN OUTPUT	DISTRIBUTION*	CCT	CONTROLS
E = Evolve **R** = Roadway **L** = Local **2** = Double Module	**0** = 120-277V* **1** = 120 **2** = 208 **3** = 240 **4** = 277 **5** = 480 **D** = 347 **H** = 347-480*# * Not available with Fusing. Must choose a discrete voltage with F option. # **Not** available with E controls option.	**16** **18** **19** **21** **23** **25** **27** **28** **30** See Table	**A3** = Type II Narrow **B3** = Type II Wide **C3** = Type III **D3** = Type IV **E3** = Type II Enhanced Back Light See Table *Nominal IES Type classing subject to typical variation, individual units may differ.	**27** = 2700K<> **30** = 3000K<> **40** = 4000K <> Select 2700K or 3000K CCT for IDA approved units.	**A** = ANSI C136.41 7-pin **D** = ANSI C136.41 7-pin with Shorting Cap **E** = ANSI C136.41 7-pin with non-Dimming PE Control.* *PE Control Only available f 120-277V or 480V Discrete. available for 347-480V or 3 Discrete. **NOTE:** Dimming controls wi 0-10V standard unless DAL "U" requested.

LUMEN OUTPUT	DISTRIBUTION	TYPICAL INITIAL LUMENS 4000K	3000K	2700K	TYPICAL SYSTEM WATTAGE 120-277V	347-480V	BUG RATING 4000K	3000K	2700K	4000K 120-277V	347-480V
16	A3	16000	15300	14900	120		B3-U0-G3	B3-U0-G3	B3-U0-G3	ERL2_16A340_IES	
	B3						B3-U0-G3	B3-U0-G3	B2-U0-G3	ERL2_16B340_IES	
	C3						B2-U0-G3	B2-U0-G3	B2-U0-G3	ERL2_16C340_IES	
	D3						B2-U0-G3	B2-U0-G3	B2-U0-G3	ERL2_16D340_IES	
	E3						B3-U0-G3	B3-U0-G3	B3-U0-G3	ERL2_16E340_IES	
18	A3	18000	17300	16700	140		B3-U0-G3	B3-U0-G3	B3-U0-G3	ERL2_18A340_IES	
	B3						B3-U0-G3	B3-U0-G3	B3-U0-G3	ERL2_18B340_IES	
	C3						B2-U0-G3	B2-U0-G3	B2-U0-G3	ERL2_18C340_IES	
	D3						B2-U0-G3	B2-U0-G3	B2-U0-G3	ERL2_18D340_IES	
	E3						B3-U0-G3	B3-U0-G3	B3-U0-G3	ERL2_18E340_IES	
19	A3	19000	18200	17700	149		B3-U0-G3	B3-U0-G3	B3-U0-G3	ERL2_19A340_IES	
	B3						B3-U0-G3	B3-U0-G3	B3-U0-G3	ERL2_19B340_IES	
	C3						B3-U0-G3	B2-U0-G3	B2-U0-G3	ERL2_19C340_IES	
	D3						B2-U0-G3	B2-U0-G3	B2-U0-G3	ERL2_19D340_IES	
	E3						B3-U0-G3	B3-U0-G3	B3-U0-G3	ERL2_19E340_IES	
21	A3	21000	20100	19500	174	177	B3-U0-G3	B3-U0-G3	B3-U0-G3	ERL2_21A340_-120-277VIES	ERL2_21A340_-347-480VIES
	B3						B3-U0-G3	B3-U0-G3	B3-U0-G3	ERL2_21B340_-120-277VIES	ERL2_21B340_-347-480VIES
	C3						B3-U0-G4	B3-U0-G3	B3-U0-G3	ERL2_21C340_-120-277VIES	ERL2_21C340_-347-480VIES
	D3						B2-U0-G3	B2-U0-G3	B2-U0-G3	ERL2_21D340_-120-277VIES	ERL2_21D340_-347-480VIES
	E3						B3-U0-G3	B3-U0-G3	B3-U0-G3	ERL2_21E340_-120-277VIES	ERL2_21E340_-347-480VIES
23	A3	23000	22100	21400	194	196	B3-U0-G3	B3-U0-G3	B3-U0-G3	ERL2_23A340_-120-277VIES	ERL2_23A340_-347-480VIES
	B3						B3-U0-G3	B3-U0-G3	B3-U0-G3	ERL2_23B340_-120-277VIES	ERL2_23B340_-347-480VIES
	C3						B3-U0-G4	B3-U0-G4	B3-U0-G4	ERL2_23C340_-120-277VIES	ERL2_23C340_-347-480VIES
	D3						B2-U0-G4	B2-U0-G4	B2-U0-G3	ERL2_23D340_-120-277VIES	ERL2_23D340_-347-480VIES
	E3						B3-U0-G3	B3-U0-G3	B3-U0-G3	ERL2_23E340_-120-277VIES	ERL2_23E340_-347-480VIES

GE Evolve ERLH (250W equiv)



LUMEN OUTPUT	DISTRIBUTION	TYPICAL INITIAL LUMENS 4000K	3000K	2700K	TYPICAL SYSTEM WATTAGE 120-277V	347-480V	BUG RATING 4000K	3000K	2700K	4000K
10	A3	10000	9600	9300	82		B2-U0-G2	B2-U0-G2	B2-U0-G2	ERLH_10A340____IES
	B3						B2-U0-G2	B2-U0-G2	B2-U0-G2	ERLH_10B340____IES
	C3						B2-U0-G3	B2-U0-G2	B2-U0-G2	ERLH_10C340____IES
	D3						B1-U0-G3	B1-U0-G2	B1-U0-G2	ERLH_10D340____IES
	E3						B3-U0-G3	B3-U0-G3	B3-U0-G3	ERLH_10E340____IES
11	A3	11500	11000	10700	98		B3-U0-G3	B2-U0-G2	B2-U0-G2	ERLH_11A340____IES
	B3						B3-U0-G3	B2-U0-G2	B2-U0-G2	ERLH_11B340____IES
	C3						B2-U0-G3	B2-U0-G3	B2-U0-G3	ERLH_11C340____IES
	D3						B1-U0-G3	B1-U0-G2	B1-U0-G2	ERLH_11D340____IES
	E3						B3-U0-G3	B3-U0-G3	B3-U0-G3	ERLH_11E340____IES
13	A3	13000	12500	12100	111		B3-U0-G3	B3-U0-G3	B3-U0-G3	ERLH_13A340____IES
	B3						B2-U0-G3	B2-U0-G3	B2-U0-G3	ERLH_13B340____IES
	C3						B2-U0-G3	B2-U0-G3	B2-U0-G3	ERLH_13C340____IES
	D3						B2-U0-G3	B2-U0-G3	B1-U0-G3	ERLH_13D340____IES
	E3						B3-U0-G3	B3-U0-G3	B3-U0-G3	ERLH_13E340____IES

VOLTAGE DROP CALCULATIONS

Control Center C - Circuit 1 — No. of Wires for Calculation Purposes: 3

Power Service: Circuit:

Supply Voltage: 240

Wire Resistance Us No. 4 AWG. 0.310

No. AWG.

Voltage: 240

Wire Factor Used (Two - No. 10 AWG Wires):	2.40	ohms/mft/1000	Circuit: 'X'
Wire Factor Used (Two - No. 8 AWG Wires):	1.56	ohms/mft/1000	
Wire Factor Used (Two - No. 6 AWG Wires):	0.98	ohms/mft/1000	
Wire Factor Used (Two - No. 4 AWG Wires):	0.62	ohms/mft/1000	
Wire Factor Used (Two - No. 2 AWG Wires):	0.38	ohms/mft/1000	

Section			Amperes		Ampere-Feet	AWG	Voltage Drop		% Drop	At Point
From	To	Design Feet	At Point	Accum.			In Section	Accum.		
C1-1	C1-2	25	0.25	0.25	6	4	0.004	9.32	**3.88**	C1-1
C1-2	C1-3	61	0.25	0.50	30	4	0.019	9.31		C1-2
C1-3	C1-4	50	0.25	0.75	38	4	0.023	9.30		C1-3
C1-4	C1-5	96	0.25	1.00	96	4	0.059	9.27		C1-4
C1-5	C1-6	113	0.58	1.58	178	4	0.110	9.21		C1-5
C1-6	C1-7	112	0.58	2.16	242	4	0.150	9.10		C1-6
C1-7	C1-14	43	0.58	2.74	117	4	0.073	8.95		C1-7
C1-8	C1-9	22	0.25	0.25	5	4	0.003	9.22		C1-8
C1-9	C1-10	50	0.25	0.50	25	4	0.015	9.22		C1-9
C1-10	C1-11	60	0.25	0.75	45	4	0.028	9.20		C1-10
C1-11	C1-12	53	0.25	1.00	53	4	0.033	9.17		C1-11
C1-12	C1-13	110	0.58	1.58	174	4	0.108	9.14		C1-12
C1-13	C1-14	115	0.58	2.16	248	4	0.154	9.03		C1-13
C1-14	C1-15	130	0.58	5.48	712	4	0.442	8.88		C1-14
C1-15	C1-16	149	0.58	6.06	905	4	0.561	8.44		C1-15
C1-16	C1-17	114	0.58	6.64	759	4	0.470	7.88		C1-16
C1-17	C1-19	123	0.58	7.22	891	4	0.553	7.41		C1-17
C1-18	C1-19	42	0.58	0.58	24	4	0.015	6.87		C1-18
C1-19	C1-20	123	0.58	8.38	1,034	4	0.641	6.85		C1-19
C1-20	C1-21	52	0.58	8.96	469	4	0.291	6.21		C1-20
C1-22	C1-21	99	0.58	0.58	58	4	0.036	5.96		C1-22
C1-21	CC-C	944	0.58	10.12	9,552	4	5.922	5.92		C1-21

CIRCUIT FUSE SIZE (AMPS):

Size Breakers to 125% of maximum input current (20 AMP MINIMUM):

10.12 / 0.8 = 12.65 **USE 20 AMP CIRCUIT BREAKER (CIRCUIT FUSE SIZE)**

CIRCUIT LOAD (AMPS):

Equal to the cumlative total input current for the circuit

10.12 Amps

CONNECTED LOAD (KVA):

Circuit load * line voltage / 1000

2.43 KVA

VOLTAGE DROP CALCULATIONS

Control Center C - Circuit 2 — No. of Wires for Calculation Purposes: 3

Power Service: Circuit:

Supply Voltage: 240

Wire Resistance Use No. 4 AWG. 0.310

No. AWG.

Voltage: 240

Wire Factor Used (Two - No. 10 AWG Wires):	2.40	ohms/mft/1000	Circuit: 'X'
Wire Factor Used (Two - No. 8 AWG Wires):	1.56	ohms/mft/1000	
Wire Factor Used (Two - No. 6 AWG Wires):	0.98	ohms/mft/1000	
Wire Factor Used (Two - No. 4 AWG Wires):	0.62	ohms/mft/1000	
Wire Factor Used (Two - No. 2 AWG Wires):	0.38	ohms/mft/1000	

Section			Amperes		Ampere-Feet	AWG	Voltage Drop		% Drop	At Point
From	To	Design Feet	At Point	Accum.			In Section	Accum.		
PB-C1	C2-1	228	0.00	0.00	0	4	0.000	2.85	1.19	PB-C1
C2-1	PB-C2	64	0.80	0.80	51	4	0.032	2.85		C2-1
PB-C2	C2-2	33	0.00	0.80	26	4	0.016	2.82		PB-C2
C2-2	C2-3	53	0.25	1.05	56	4	0.035	2.80		C2-2
C2-4	C2-6	53	0.25	0.25	13	4	0.008	2.83		C2-4
C2-5	C2-6	47	0.25	0.25	12	4	0.007	2.83		C2-5
C2-6	C2-3	111	0.25	0.75	84	4	0.052	2.82		C2-6
C2-3	C2-7	47	0.25	2.05	97	4	0.060	2.77		C2-3
C2-7	PB-C3	23	0.25	2.30	54	4	0.033	2.71		C2-7
PB-C3	C2-8	62	0.00	2.30	142	4	0.088	2.67		PB-C3
C2-9	PB-C4	65	0.80	0.80	52	4	0.032	2.82		C2-9
PB-C4	PB-C5	25	0.00	0.80	20	4	0.012	2.79		PB-C4
PB-C5	C2-10	28	0.00	0.80	23	4	0.014	2.77		PB-C5
C2-10	C2-11	53	0.25	1.05	56	4	0.035	2.76		C2-10
C2-11	C2-12	47	0.25	1.30	61	4	0.038	2.73		C2-11
C2-12	PB-C6	24	0.25	1.55	37	4	0.023	2.69		C2-12
PB-C6	PB-C7	60	0.00	1.55	94	4	0.058	2.67		PB-C6
C2-13	PB-C7	25	0.80	0.80	20	4	0.012	2.62		C2-13
PB-C7	C2-8	15	0.00	2.35	36	4	0.022	2.61		PB-C7
C2-8	C2-14	91	0.80	5.45	494	4	0.307	2.58		C2-8
C2-15	PB-C8	61	0.80	0.80	49	4	0.030	2.46		C2-15
PB-C8	C2-16	60	0.00	0.80	48	4	0.030	2.43		PB-C8
C2-16	C2-17	81	0.80	1.60	130	4	0.080	2.40		C2-16
C2-17	C2-14	25	0.80	2.40	59	4	0.037	2.32		C2-17
C2-14	C2-18	68	0.80	8.65	588	4	0.365	2.28		C2-14
C2-18	C2-19	125	0.80	9.45	1,182	4	0.73	1.91		C2-18
C2-19	C2-20	115	0.80	10.25	1,179	4	0.73	1.18		C2-19
C2-20	CC-C	66	0.80	11.05	725	4	0.45	0.45		C2-20

CIRCUIT FUSE SIZE (AMPS):

Size Breakers to 125% of maximum input current (20 AMP MINIMUM):

11.05 / 0.8 = 13.81 **USE 20 AMP CIRCUIT BREAKER (CIRCUIT FUSE SIZE)**

CIRCUIT LOAD (AMPS):

Equal to the cumlative total input current for the circuit

11.05 Amps

CONNECTED LOAD (KVA):

Circuit load * line voltage / 1000

2.65 KVA