

NAC Circuit Voltage Drop Calculation

Project Name	MAINE EYE CARE		
Date	9/14/2017		
Circuit Number	FACP 1-1		
Area Covered	1ST FLOOR		
NAC Source Alarm Voltage	20.4	Wire Gauge	Resistance Per MFt Cable
Minimum Device Voltage	16		
Distance to first appliance	25		
Total Circuit Current	0.764	14	5.84

Wire Gauge for balance of circuit	14	5.84
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	Device Current	Distance from previous device	Voltage at Device	Drop from source	Percent Drop
Appliance 1	0.113		20.29	0.11	0.5%
Appliance 2	0.078	30	20.17	0.23	1.1%
Appliance 3	0.098	32	20.07	0.33	1.6%
Appliance 4	0.078	20	20.01	0.39	1.9%
Appliance 5	0.064	15	19.98	0.42	2.1%
Appliance 6	0.078	20	19.94	0.46	2.3%
Appliance 7	0.064	35	19.89	0.51	2.5%
Appliance 8	0.078	35	19.85	0.55	2.7%
Appliance 9	0.113	20	19.83	0.57	2.8%
END			19.83	0.57	2.8%
END			19.83	0.57	2.8%
END			19.83	0.57	2.8%
END			19.83	0.57	2.8%
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END			19.83	0.57	2.8%
END			19.83	0.57	2.8%
END			19.83	0.57	2.8%
END			19.83	0.57	2.8%
Totals	0.764	232			

Appliance circuit voltage drop calculations start at "end of battery life" as NAC Source Alarm Voltage and use 20% below nameplate rating for Minimum Appliance Voltage.

Note. Wire resistance is based on the 1996 NEC Table 8 Uncoated DC resistance. Solid conductors except gauges 10 and 12 which are for stranded.

NAC Circuit Voltage Drop Calculation

Project Name	MAINE EYE CARE		
Date	9/14/2017		
Circuit Number	FACP 1-2		
Area Covered	1ST FLOOR		
NAC Source Alarm Voltage	20.4	Wire Gauge 14	Resistance Per MFt Cable 5.84
Minimum Device Voltage	16		
Distance to first appliance	35		
Total Circuit Current	0.691		

Wire Gauge for balance of circuit	14	5.84
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Circuit is within limits	Device Current	Distance from previous device	Voltage at Device	Drop from source	Percent Drop
Appliance 1	0.064		20.26	0.14	0.7%
Appliance 2	0.064	15	20.20	0.20	1.0%
Appliance 3	0.078	20	20.14	0.26	1.3%
Appliance 4	0.064	20	20.08	0.32	1.6%
Appliance 5	0.113	40	19.98	0.42	2.0%
Appliance 6	0.113	15	19.96	0.44	2.2%
Appliance 7	0.195	35	19.92	0.48	2.4%
END			19.92	0.48	2.4%
END			19.92	0.48	2.4%
END			19.92	0.48	2.4%
END			19.92	0.48	2.4%
END			19.92	0.48	2.4%
END			19.92	0.48	2.4%
END			19.92	0.48	2.4%
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END			19.92	0.48	2.4%
END			19.92	0.48	2.4%
END			19.92	0.48	2.4%
END			19.92	0.48	2.4%
END			19.92	0.48	2.4%
END			19.92	0.48	2.4%
Totals	0.691	180			

Appliance circuit voltage drop calculations start at "end of battery life" as NAC Source Alarm Voltage and use 20% below nameplate rating for Minimum Appliance Voltage.

Note. Wire resistance is based on the 1996 NEC Table 8 Uncoated DC resistance. Solid conductors except gauges 10 and 12 which are for stranded.

NAC Circuit Voltage Drop Calculation

Project Name	MAINE EYE CARE		
Date	9/14/2017		
Circuit Number	FACP 1-3		
Area Covered	1ST FLOOR		
NAC Source Alarm Voltage	20.4	Wire Gauge	Resistance Per MFt Cable
Minimum Device Voltage	16		
Distance to first appliance	85		
Total Circuit Current	0.618	14	5.84

Wire Gauge for balance of circuit	14	5.84
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	Device Current	Distance from previous device	Voltage at Device	Drop from source	Percent Drop
Appliance 1	0.064		20.09	0.31	1.5%
Appliance 2	0.064	15	20.04	0.36	1.7%
Appliance 3	0.078	20	19.99	0.41	2.0%
Appliance 4	0.064	20	19.94	0.46	2.3%
Appliance 5	0.064	25	19.89	0.51	2.5%
Appliance 6	0.078	30	19.84	0.56	2.8%
Appliance 7	0.064	30	19.80	0.60	2.9%
Appliance 8	0.064	25	19.78	0.62	3.0%
Appliance 9	0.078	40	19.76	0.64	3.1%
END			19.76	0.64	3.1%
END			19.76	0.64	3.1%
END			19.76	0.64	3.1%
END			19.76	0.64	3.1%
END			19.76	0.64	3.1%
END			19.76	0.64	3.1%
END			19.76	0.64	3.1%
END			19.76	0.64	3.1%
END			19.76	0.64	3.1%
END			19.76	0.64	3.1%
END			19.76	0.64	3.1%
END			19.76	0.64	3.1%
END			19.76	0.64	3.1%
END			19.76	0.64	3.1%
END			19.76	0.64	3.1%
END			19.76	0.64	3.1%
Totals	0.618	290			

Appliance circuit voltage drop calculations start at "end of battery life" as NAC Source Alarm Voltage and use 20% below nameplate rating for Minimum Appliance Voltage.

Note. Wire resistance is based on the 1996 NEC Table 8 Uncoated DC resistance. Solid conductors except gauges 10 and 12 which are for stranded.

NAC Circuit Voltage Drop Calculation

Project Name	MAINE EYE CARE		
Date	9/14/2017		
Circuit Number	NAC2-1		
Area Covered	2ND FLOOR		
NAC Source Alarm Voltage	20.4	Wire Gauge 14	Resistance Per MFt Cable 5.84
Minimum Device Voltage	16		
Distance to first appliance	30		
Total Circuit Current	0.907		

Wire Gauge for balance of circuit	14	5.84
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	Device Current	Distance from previous device	Voltage at Device	Drop from source	Percent Drop
Appliance 1	0.078		20.24	0.16	0.8%
Appliance 2	0.064	25	20.12	0.28	1.4%
Appliance 3	0.078	20	20.03	0.37	1.8%
Appliance 4	0.064	20	19.95	0.45	2.2%
Appliance 5	0.113	30	19.84	0.56	2.7%
Appliance 6	0.098	30	19.75	0.65	3.2%
Appliance 7	0.064	30	19.68	0.72	3.5%
Appliance 8	0.078	25	19.63	0.77	3.8%
Appliance 9	0.064	30	19.58	0.82	4.0%
Appliance 10	0.078	20	19.56	0.84	4.1%
Appliance 11	0.064	20	19.54	0.86	4.2%
Appliance 12	0.064	25	19.53	0.87	4.2%
END			19.53	0.87	4.2%
END			19.53	0.87	4.2%
END			19.53	0.87	4.2%
END			19.53	0.87	4.2%
END			19.53	0.87	4.2%
END			19.53	0.87	4.2%
END			19.53	0.87	4.2%
END			19.53	0.87	4.2%
END			19.53	0.87	4.2%
END			19.53	0.87	4.2%
END			19.53	0.87	4.2%
END			19.53	0.87	4.2%
END			19.53	0.87	4.2%
END			19.53	0.87	4.2%
Totals	0.907	305			

Appliance circuit voltage drop calculations start at "end of battery life" as NAC Source Alarm Voltage and use 20% below nameplate rating for Minimum Appliance Voltage.

Note. Wire resistance is based on the 1996 NEC Table 8 Uncoated DC resistance. Solid conductors except gauges 10 and 12 which are for stranded.

NAC Circuit Voltage Drop Calculation

Project Name	MAINE EYE CARE		
Date	9/14/2017		
Circuit Number	NAC2-2		
Area Covered	2ND FLOOR		
NAC Source Alarm Voltage	20.4	Wire Gauge 14	Resistance Per MFt Cable 5.84
Minimum Device Voltage	16		
Distance to first appliance	25		
Total Circuit Current	0.976		

Wire Gauge for balance of circuit	14	5.84
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	Device Current	Distance from previous device	Voltage at Device	Drop from source	Percent Drop
Appliance 1	0.064		20.26	0.14	0.7%
Appliance 2	0.078	25	20.12	0.28	1.4%
Appliance 3	0.078	50	19.88	0.52	2.5%
Appliance 4	0.078	25	19.77	0.63	3.1%
Appliance 5	0.064	25	19.67	0.73	3.6%
Appliance 6	0.064	20	19.60	0.80	3.9%
Appliance 7	0.098	35	19.49	0.91	4.5%
Appliance 8	0.113	30	19.41	0.99	4.9%
Appliance 9	0.064	30	19.35	1.05	5.2%
Appliance 10	0.064	20	19.32	1.08	5.3%
Appliance 11	0.113	45	19.26	1.14	5.6%
Appliance 12	0.098	15	19.25	1.15	5.6%
END			19.25	1.15	5.6%
END			19.25	1.15	5.6%
END			19.25	1.15	5.6%
END			19.25	1.15	5.6%
END			19.25	1.15	5.6%
END			19.25	1.15	5.6%
END			19.25	1.15	5.6%
END			19.25	1.15	5.6%
END			19.25	1.15	5.6%
END			19.25	1.15	5.6%
END			19.25	1.15	5.6%
END			19.25	1.15	5.6%
END			19.25	1.15	5.6%
END			19.25	1.15	5.6%
Totals	0.976	345			

Appliance circuit voltage drop calculations start at "end of battery life" as NAC Source Alarm Voltage and use 20% below nameplate rating for Minimum Appliance Voltage.

Note. Wire resistance is based on the 1996 NEC Table 8 Uncoated DC resistance. Solid conductors except gauges 10 and 12 which are for stranded.

NAC Circuit Voltage Drop Calculation

Project Name	MAINE EYE CARE		
Date	9/14/2017		
Circuit Number	NAC2-3		
Area Covered	2ND FLOOR		
NAC Source Alarm Voltage	20.4	Wire Gauge 14	Resistance Per MFt Cable 5.84
Minimum Device Voltage	16		
Distance to first appliance	100		
Total Circuit Current	0.816		

Wire Gauge for balance of circuit	14	5.84
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	Device Current	Distance from previous device	Voltage at Device	Drop from source	Percent Drop
Appliance 1	0.113		19.92	0.48	2.3%
Appliance 2	0.064	20	19.84	0.56	2.7%
Appliance 3	0.064	25	19.75	0.65	3.2%
Appliance 4	0.064	20	19.68	0.72	3.5%
Appliance 5	0.064	20	19.62	0.78	3.8%
Appliance 6	0.064	25	19.56	0.84	4.1%
Appliance 7	0.064	25	19.50	0.90	4.4%
Appliance 8	0.064	20	19.46	0.94	4.6%
Appliance 9	0.113	20	19.43	0.97	4.7%
Appliance 10	0.064	25	19.41	0.99	4.8%
Appliance 11	0.078	20	19.40	1.00	4.9%
END			19.40	1.00	4.9%
END			19.40	1.00	4.9%
END			19.40	1.00	4.9%
END			19.40	1.00	4.9%
END			19.40	1.00	4.9%
END			19.40	1.00	4.9%
END			19.40	1.00	4.9%
END			19.40	1.00	4.9%
END			19.40	1.00	4.9%
END			19.40	1.00	4.9%
END			19.40	1.00	4.9%
END			19.40	1.00	4.9%
END			19.40	1.00	4.9%
END			19.40	1.00	4.9%
Totals	0.816	320			

Appliance circuit voltage drop calculations start at "end of battery life" as NAC Source Alarm Voltage and use 20% below nameplate rating for Minimum Appliance Voltage.

Note. Wire resistance is based on the 1996 NEC Table 8 Uncoated DC resistance. Solid conductors except gauges 10 and 12 which are for stranded.

NAC Circuit Voltage Drop Calculation

Project Name	MAINE EYE CARE		
Date	9/14/2017		
Circuit Number	NAC3-1		
Area Covered	3RD FLOOR		
NAC Source Alarm Voltage	20.4	Wire Gauge 14	Resistance Per MFt Cable 5.84
Minimum Device Voltage	16		
Distance to first appliance	25		
Total Circuit Current	0.666		

Wire Gauge for balance of circuit	14	5.84
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	Device Current	Distance from previous device	Voltage at Device	Drop from source	Percent Drop
Appliance 1	0.078		20.30	0.10	0.5%
Appliance 2	0.078	30	20.20	0.20	1.0%
Appliance 3	0.064	20	20.14	0.26	1.3%
Appliance 4	0.098	20	20.09	0.31	1.5%
Appliance 5	0.078	30	20.03	0.37	1.8%
Appliance 6	0.078	30	19.98	0.42	2.1%
Appliance 7	0.064	20	19.96	0.44	2.2%
Appliance 8	0.064	20	19.94	0.46	2.2%
Appliance 9	0.064	25	19.93	0.47	2.3%
END			19.93	0.47	2.3%
END			19.93	0.47	2.3%
END			19.93	0.47	2.3%
END			19.93	0.47	2.3%
END			19.93	0.47	2.3%
END			19.93	0.47	2.3%
END			19.93	0.47	2.3%
END			19.93	0.47	2.3%
END			19.93	0.47	2.3%
END			19.93	0.47	2.3%
END			19.93	0.47	2.3%
END			19.93	0.47	2.3%
END			19.93	0.47	2.3%
END			19.93	0.47	2.3%
END			19.93	0.47	2.3%
END			19.93	0.47	2.3%
Totals	0.666	220			

Appliance circuit voltage drop calculations start at "end of battery life" as NAC Source Alarm Voltage and use 20% below nameplate rating for Minimum Appliance Voltage.

Note. Wire resistance is based on the 1996 NEC Table 8 Uncoated DC resistance. Solid conductors except gauges 10 and 12 which are for stranded.

NAC Circuit Voltage Drop Calculation

Project Name	MAINE EYE CARE		
Date	9/14/2017		
Circuit Number	NAC3-2		
Area Covered	3RD FLOOR		
NAC Source Alarm Voltage	20.4	Wire Gauge	Resistance Per MFt Cable
Minimum Device Voltage	16		
Distance to first appliance	60		
Total Circuit Current	0.540	14	5.84

Wire Gauge for balance of circuit	14	5.84
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	Device Current	Distance from previous device	Voltage at Device	Drop from source	Percent Drop
Appliance 1	0.064		20.21	0.19	0.9%
Appliance 2	0.078	15	20.17	0.23	1.1%
Appliance 3	0.064	20	20.12	0.28	1.4%
Appliance 4	0.064	30	20.06	0.34	1.6%
Appliance 5	0.064	25	20.02	0.38	1.8%
Appliance 6	0.078	20	20.00	0.40	2.0%
Appliance 7	0.064	25	19.98	0.42	2.0%
Appliance 8	0.064	25	19.97	0.43	2.1%
END			19.97	0.43	2.1%
END			19.97	0.43	2.1%
END			19.97	0.43	2.1%
END			19.97	0.43	2.1%
END			19.97	0.43	2.1%
END			19.97	0.43	2.1%
END			19.97	0.43	2.1%
END			19.97	0.43	2.1%
END			19.97	0.43	2.1%
END			19.97	0.43	2.1%
END			19.97	0.43	2.1%
END			19.97	0.43	2.1%
END			19.97	0.43	2.1%
END			19.97	0.43	2.1%
END			19.97	0.43	2.1%
END			19.97	0.43	2.1%
Totals	0.540	220			

Appliance circuit voltage drop calculations start at "end of battery life" as NAC Source Alarm Voltage and use 20% below nameplate rating for Minimum Appliance Voltage.

Note. Wire resistance is based on the 1996 NEC Table 8 Uncoated DC resistance. Solid conductors except gauges 10 and 12 which are for stranded.

NAC Circuit Voltage Drop Calculation

Project Name	MAINE EYE CARE		
Date	9/14/2017		
Circuit Number	NAC3-3		
Area Covered	3RD FLOOR		
NAC Source Alarm Voltage	20.4	Wire Gauge	Resistance Per MFt Cable
Minimum Device Voltage	16		
Distance to first appliance	50		
Total Circuit Current	0.717	14	5.84

Wire Gauge for balance of circuit	14	5.84
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	Device Current	Distance from previous device	Voltage at Device	Drop from source	Percent Drop
Appliance 1	0.113		20.19	0.21	1.0%
Appliance 2	0.064	45	20.03	0.37	1.8%
Appliance 3	0.078	20	19.97	0.43	2.1%
Appliance 4	0.064	15	19.93	0.47	2.3%
Appliance 5	0.064	25	19.87	0.53	2.6%
Appliance 6	0.078	15	19.84	0.56	2.7%
Appliance 7	0.064	25	19.80	0.60	2.9%
Appliance 8	0.064	35	19.76	0.64	3.1%
Appliance 9	0.064	15	19.75	0.65	3.2%
Appliance 10	0.064	20	19.75	0.65	3.2%
END			19.75	0.65	3.2%
END			19.75	0.65	3.2%
END			19.75	0.65	3.2%
END			19.75	0.65	3.2%
END			19.75	0.65	3.2%
END			19.75	0.65	3.2%
END			19.75	0.65	3.2%
END			19.75	0.65	3.2%
END			19.75	0.65	3.2%
END			19.75	0.65	3.2%
END			19.75	0.65	3.2%
END			19.75	0.65	3.2%
END			19.75	0.65	3.2%
END			19.75	0.65	3.2%
END			19.75	0.65	3.2%
Totals	0.717	265			

Appliance circuit voltage drop calculations start at "end of battery life" as NAC Source Alarm Voltage and use 20% below nameplate rating for Minimum Appliance Voltage.

Note. Wire resistance is based on the 1996 NEC Table 8 Uncoated DC resistance. Solid conductors except gauges 10 and 12 which are for stranded.

NAC Circuit Voltage Drop Calculation

Project Name	MAINE EYE CARE		
Date	9/14/2017		
Circuit Number	NAC3-4		
Area Covered	3RD FLOOR		
NAC Source Alarm Voltage	20.4	Wire Gauge 14	Resistance Per MFt Cable 5.84
Minimum Device Voltage	16		
Distance to first appliance	60		
Total Circuit Current	0.799		

Wire Gauge for balance of circuit	14	5.84
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	Device Current	Distance from previous device	Voltage at Device	Drop from source	Percent Drop
Appliance 1	0.195		20.12	0.28	1.4%
Appliance 2	0.064	35	20.00	0.40	2.0%
Appliance 3	0.064	20	19.93	0.47	2.3%
Appliance 4	0.078	30	19.85	0.55	2.7%
Appliance 5	0.064	25	19.79	0.61	3.0%
Appliance 6	0.064	20	19.75	0.65	3.2%
Appliance 7	0.064	25	19.71	0.69	3.4%
Appliance 8	0.078	20	19.69	0.71	3.5%
Appliance 9	0.064	25	19.67	0.73	3.6%
Appliance 10	0.064	15	19.67	0.73	3.6%
END			19.67	0.73	3.6%
END			19.67	0.73	3.6%
END			19.67	0.73	3.6%
END			19.67	0.73	3.6%
END			19.67	0.73	3.6%
END			19.67	0.73	3.6%
END			19.67	0.73	3.6%
END			19.67	0.73	3.6%
END			19.67	0.73	3.6%
END			19.67	0.73	3.6%
END			19.67	0.73	3.6%
END			19.67	0.73	3.6%
END			19.67	0.73	3.6%
END			19.67	0.73	3.6%
END			19.67	0.73	3.6%
Totals	0.799	275			

Appliance circuit voltage drop calculations start at "end of battery life" as NAC Source Alarm Voltage and use 20% below nameplate rating for Minimum Appliance Voltage.

Note. Wire resistance is based on the 1996 NEC Table 8 Uncoated DC resistance. Solid conductors except gauges 10 and 12 which are for stranded.

NAC Circuit Voltage Drop Calculation

Project Name	MAINE EYE CARE		
Date	9/14/2017		
Circuit Number	NAC4-1		
Area Covered	4TH FLOOR		
NAC Source Alarm Voltage	20.4	Wire Gauge 14	Resistance Per MFt Cable 5.84
Minimum Device Voltage	16		
Distance to first appliance	30		
Total Circuit Current	0.695		

Wire Gauge for balance of circuit	14	5.84
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	Device Current	Distance from previous device	Voltage at Device	Drop from source	Percent Drop
Appliance 1	0.113		20.28	0.12	0.6%
Appliance 2	0.078	20	20.21	0.19	0.9%
Appliance 3	0.078	25	20.14	0.26	1.3%
Appliance 4	0.064	20	20.09	0.31	1.5%
Appliance 5	0.078	20	20.04	0.36	1.7%
Appliance 6	0.064	25	20.00	0.40	1.9%
Appliance 7	0.078	15	19.98	0.42	2.0%
Appliance 8	0.064	30	19.96	0.44	2.2%
Appliance 9	0.078	15	19.95	0.45	2.2%
END			19.95	0.45	2.2%
END			19.95	0.45	2.2%
END			19.95	0.45	2.2%
END			19.95	0.45	2.2%
END			19.95	0.45	2.2%
END			19.95	0.45	2.2%
END			19.95	0.45	2.2%
END			19.95	0.45	2.2%
END			19.95	0.45	2.2%
END			19.95	0.45	2.2%
END			19.95	0.45	2.2%
END			19.95	0.45	2.2%
END			19.95	0.45	2.2%
END			19.95	0.45	2.2%
END			19.95	0.45	2.2%
END			19.95	0.45	2.2%
Totals	0.695	200			

Appliance circuit voltage drop calculations start at "end of battery life" as NAC Source Alarm Voltage and use 20% below nameplate rating for Minimum Appliance Voltage.

Note. Wire resistance is based on the 1996 NEC Table 8 Uncoated DC resistance. Solid conductors except gauges 10 and 12 which are for stranded.

NAC Circuit Voltage Drop Calculation

Project Name	MAINE EYE CARE		
Date	9/14/2017		
Circuit Number	NAC4-2		
Area Covered	4TH FLOOR		
NAC Source Alarm Voltage	20.4	Wire Gauge 14	Resistance Per MFt Cable 5.84
Minimum Device Voltage	16		
Distance to first appliance	40		
Total Circuit Current	0.973		

Wire Gauge for balance of circuit	14	5.84
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	Device Current	Distance from previous device	Voltage at Device	Drop from source	Percent Drop
Appliance 1	0.064		20.17	0.23	1.1%
Appliance 2	0.064	20	20.07	0.33	1.6%
Appliance 3	0.064	20	19.97	0.43	2.1%
Appliance 4	0.064	25	19.85	0.55	2.7%
Appliance 5	0.113	25	19.75	0.65	3.2%
Appliance 6	0.078	20	19.68	0.72	3.5%
Appliance 7	0.064	15	19.63	0.77	3.8%
Appliance 8	0.064	20	19.58	0.82	4.0%
Appliance 9	0.064	20	19.53	0.87	4.3%
Appliance 10	0.064	20	19.49	0.91	4.4%
Appliance 11	0.064	20	19.46	0.94	4.6%
Appliance 12	0.064	20	19.44	0.96	4.7%
Appliance 13	0.078	20	19.42	0.98	4.8%
Appliance 14	0.064	20	19.41	0.99	4.8%
END			19.41	0.99	4.8%
END			19.41	0.99	4.8%
END			19.41	0.99	4.8%
END			19.41	0.99	4.8%
END			19.41	0.99	4.8%
END			19.41	0.99	4.8%
END			19.41	0.99	4.8%
END			19.41	0.99	4.8%
END			19.41	0.99	4.8%
END			19.41	0.99	4.8%
END			19.41	0.99	4.8%
END			19.41	0.99	4.8%
Totals	0.973	305			

Appliance circuit voltage drop calculations start at "end of battery life" as NAC Source Alarm Voltage and use 20% below nameplate rating for Minimum Appliance Voltage.

Note. Wire resistance is based on the 1996 NEC Table 8 Uncoated DC resistance. Solid conductors except gauges 10 and 12 which are for stranded.

NAC Circuit Voltage Drop Calculation

Project Name	MAINE EYE CARE		
Date	9/14/2017		
Circuit Number	NAC4-3		
Area Covered	4TH FLOOR		
NAC Source Alarm Voltage	20.4	Wire Gauge	Resistance Per MFt Cable
Minimum Device Voltage	16		
Distance to first appliance	50		
Total Circuit Current	0.859	14	5.84

Wire Gauge for balance of circuit	14	5.84
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Circuit is within limits	Device Current	Distance from previous device	Voltage at Device	Drop from source	Percent Drop
Appliance 1	0.078		20.15	0.25	1.2%
Appliance 2	0.113	40	19.97	0.43	2.1%
Appliance 3	0.064	20	19.89	0.51	2.5%
Appliance 4	0.064	20	19.82	0.58	2.9%
Appliance 5	0.064	25	19.74	0.66	3.2%
Appliance 6	0.078	20	19.68	0.72	3.5%
Appliance 7	0.064	20	19.64	0.76	3.7%
Appliance 8	0.064	20	19.60	0.80	3.9%
Appliance 9	0.064	25	19.56	0.84	4.1%
Appliance 10	0.064	25	19.53	0.87	4.3%
Appliance 11	0.078	15	19.52	0.88	4.3%
Appliance 12	0.064	20	19.51	0.89	4.4%
END			19.51	0.89	4.4%
END			19.51	0.89	4.4%
END			19.51	0.89	4.4%
END			19.51	0.89	4.4%
END			19.51	0.89	4.4%
END			19.51	0.89	4.4%
END			19.51	0.89	4.4%
END			19.51	0.89	4.4%
END			19.51	0.89	4.4%
END			19.51	0.89	4.4%
END			19.51	0.89	4.4%
END			19.51	0.89	4.4%
END			19.51	0.89	4.4%
Totals	0.859	300			

Appliance circuit voltage drop calculations start at "end of battery life" as NAC Source Alarm Voltage and use 20% below nameplate rating for Minimum Appliance Voltage.

Note. Wire resistance is based on the 1996 NEC Table 8 Uncoated DC resistance. Solid conductors except gauges 10 and 12 which are for stranded.

NAC Circuit Voltage Drop Calculation

Project Name	MAINE EYE CARE		
Date	9/14/2017		
Circuit Number	NAC4-4		
Area Covered	4TH FLOOR		
NAC Source Alarm Voltage	20.4	Wire Gauge 14	Resistance Per MFt Cable 5.84
Minimum Device Voltage	16		
Distance to first appliance	55		
Total Circuit Current	0.638		

Wire Gauge for balance of circuit	14	5.84
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	Device Current	Distance from previous device	Voltage at Device	Drop from source	Percent Drop
Appliance 1	0.098		20.20	0.20	1.0%
Appliance 2	0.064	25	20.12	0.28	1.4%
Appliance 3	0.064	35	20.02	0.38	1.9%
Appliance 4	0.078	30	19.95	0.45	2.2%
Appliance 5	0.064	25	19.90	0.50	2.5%
Appliance 6	0.078	20	19.87	0.53	2.6%
Appliance 7	0.064	20	19.84	0.56	2.7%
Appliance 8	0.064	25	19.83	0.57	2.8%
Appliance 9	0.064	25	19.82	0.58	2.9%
END			19.82	0.58	2.9%
END			19.82	0.58	2.9%
END			19.82	0.58	2.9%
END			19.82	0.58	2.9%
END			19.82	0.58	2.9%
END			19.82	0.58	2.9%
END			19.82	0.58	2.9%
END			19.82	0.58	2.9%
END			19.82	0.58	2.9%
END			19.82	0.58	2.9%
END			19.82	0.58	2.9%
END			19.82	0.58	2.9%
END			19.82	0.58	2.9%
END			19.82	0.58	2.9%
END			19.82	0.58	2.9%
Totals	0.638	260			

Appliance circuit voltage drop calculations start at "end of battery life" as NAC Source Alarm Voltage and use 20% below nameplate rating for Minimum Appliance Voltage.

Note. Wire resistance is based on the 1996 NEC Table 8 Uncoated DC resistance. Solid conductors except gauges 10 and 12 which are for stranded.