# NAC Circuit Voltage Drop Calculation

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 12/08/17

| | | | |
|---|---|---|---|
| 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 | Resistance |
| Minimum Device Voltage | 16 | Gauge | Per MFt Cable |
| Distance to first appliance | 25 | 14 | 5.84 |
| Total Circuit Current | 0.764 | | |

| | | |
|---|---|---|
| Wire Gauge for balance of circuit | 14 | 5.84 |

**Circuit is within limits**

| | 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% |
| 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% |
| 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% |
| 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

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| | | | |
|---|---|---|---|
| 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 | Resistance Per MFt Cable |
| Minimum Device Voltage | 16 | | |
| Distance to first appliance | 35 | 14 | 5.84 |
| Total Circuit Current | 0.691 | | |

| | | |
|---|---|---|
| Wire Gauge for balance of circuit | 14 | 5.84 |

**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% |
| 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% |
| 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

Reviewed for Code Compliance
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Approved with Conditions
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| | | | |
|---|---|---|---|
| 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 | Resistance |
| Minimum Device Voltage | 16 | Gauge | Per MFt Cable |
| Distance to first appliance | 85 | 14 | 5.84 |
| Total Circuit Current | 0.618 | | |

| | | |
|---|---|---|
| Wire Gauge for balance of circuit | 14 | 5.84 |

**Circuit is within limits**

| | 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% |
| 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

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 12/08/17

| | | | |
|---|---|---|---|
| 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 | Resistance Per MFt Cable |
| Minimum Device Voltage | 16 | | |
| Distance to first appliance | 30 | 14 | 5.84 |
| Total Circuit Current | 0.907 | | |

| | | |
|---|---|---|
| Wire Gauge for balance of circuit | 14 | 5.84 |

**Circuit is within limits**

| | 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% |
| 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

Reviewed for Code Compliance
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Approved with Conditions
Date: 12/08/17

| | | | |
|---|---|---|---|
| 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 | Resistance Per MFt Cable |
| Minimum Device Voltage | 16 | | |
| Distance to first appliance | 25 | 14 | 5.84 |
| Total Circuit Current | 0.976 | | |

| | | |
|---|---|---|
| Wire Gauge for balance of circuit | 14 | 5.84 |

**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 | 0.078 | 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% |
| 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

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| | | | |
|---|---|---|---|
| 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 | Resistance Per MFt Cable |
| Minimum Device Voltage | 16 | | |
| Distance to first appliance | 100 | 14 | 5.84 |
| Total Circuit Current | 0.816 | | |

| | | |
|---|---|---|
| Wire Gauge for balance of circuit | 14 | 5.84 |

**Circuit is within limits**

| | 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.

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| | | | |
|---|---|---|---|
| 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 | Resistance Per MFt Cable |
| Minimum Device Voltage | 16 | | |
| Distance to first appliance | 25 | 14 | 5.84 |
| Total Circuit Current | 0.666 | | |

| | | |
|---|---|---|
| Wire Gauge for balance of circuit | 14 | 5.84 |

**Circuit is within limits**

| | 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% |
| 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

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

| | | |
|---|---|---|
| Wire Gauge for balance of circuit | 14 | 5.84 |

**Circuit is within limits**

| | 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

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

| | | |
|---|---|---|
| Wire Gauge for balance of circuit | 14 | 5.84 |

**Circuit is within limits**

| | 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% |
| 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

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

| | | |
|---|---|---|
| Wire Gauge for balance of circuit | 14 | 5.84 |

**Circuit is within limits**

| | 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% |
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| 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

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 12/08/17

| | | | |
|---|---|---|---|
| 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 | Resistance Per MFt Cable |
| Minimum Device Voltage | 16 | | |
| Distance to first appliance | 30 | 14 | 5.84 |
| Total Circuit Current | 0.695 | | |

| | | |
|---|---|---|
| Wire Gauge for balance of circuit | 14 | 5.84 |

**Circuit is within limits**

| | 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% |
| 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

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 12/08/17

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

| | | |
|---|---|---|
| Wire Gauge for balance of circuit | 14 | 5.84 |

**Circuit is within limits**

| | 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% |
| 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

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 12/08/17

| | | | |
|---|---|---|---|
| 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 | 14 | 5.84 |
| Total Circuit Current | 0.859 | | |

| | | |
|---|---|---|
| Wire Gauge for balance of circuit | 14 | 5.84 |

**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

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 12/08/17

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

| | | |
|---|---|---|
| Wire Gauge for balance of circuit | 14 | 5.84 |

**Circuit is within limits**

| | 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.