NAC Circuit Voltage Drop Calculation

Project Name	**Forq Food Labs**			
Date	**5/15/16**			
Circuit Number	**NAC #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		14	5.84
Total Circuit Current	0.656			

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	0.064	25	20.22	0.18	0.9%
Appliance 3	0.064	25	20.14	0.26	1.3%
Appliance 4	0.113	50	20.01	0.39	1.9%
Appliance 5	0.195	75	19.87	0.53	2.6%
Appliance 6	0.064	50	19.82	0.58	2.8%
Appliance 7	0.078	40	19.81	0.59	2.9%
END			19.81	0.59	2.9%
END			19.81	0.59	2.9%
END			19.81	0.59	2.9%
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END			19.81	0.59	2.9%
END			19.81	0.59	2.9%
END			19.81	0.59	2.9%
Totals	0.656	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	**Forq Food Labs**		
Date	**5/15/16**		
Circuit Number	**NAC #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	50	14	5.84
Total Circuit Current	0.454		
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		20.27	0.13	0.6%
Appliance 2	0.064	25	20.23	0.17	0.8%
Appliance 3	0.195	75	20.14	0.26	1.3%
END			20.14	0.26	1.3%
END			20.14	0.26	1.3%
END			20.14	0.26	1.3%
END			20.14	0.26	1.3%
END			20.14	0.26	1.3%
END			20.14	0.26	1.3%
END			20.14	0.26	1.3%
END			20.14	0.26	1.3%
END			20.14	0.26	1.3%
END			20.14	0.26	1.3%
END			20.14	0.26	1.3%
END			20.14	0.26	1.3%
END			20.14	0.26	1.3%
END			20.14	0.26	1.3%
END			20.14	0.26	1.3%
END			20.14	0.26	1.3%
END			20.14	0.26	1.3%
END			20.14	0.26	1.3%
END			20.14	0.26	1.3%
END			20.14	0.26	1.3%
END			20.14	0.26	1.3%
END			20.14	0.26	1.3%
END			20.14	0.26	1.3%
END			20.14	0.26	1.3%
Totals	0.454	150			

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.