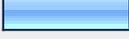
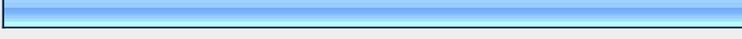
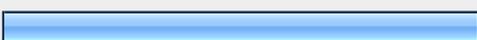
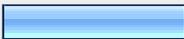


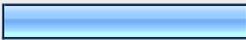
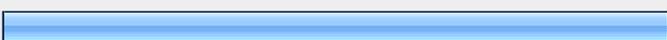
# Certified Technician - Refrigeration

1. What technician certifications type(s) do you hold (check all that apply)?			Response Percent	Response Count
Not US EPA certified			0.0%	0
Type I			9.1%	2
Type II			9.1%	2
Type III			13.6%	3
<b>Universal</b>			<b>81.8%</b>	<b>18</b>
NATE (North American Technician Excellence)			9.1%	2
Other (please specify)			0.0%	0
			<b>answered question</b>	<b>22</b>
			<b>skipped question</b>	<b>1</b>

2. What is your primary business activity (check all that apply)?			Response Percent	Response Count
Residential/Light Commercial Refrigeration			34.8%	8
<b>Commercial/Industrial Refrigeration</b>			<b>56.5%</b>	<b>13</b>
Commercial/Industrial Air Conditioning			52.2%	12
			Other (please specify)	0
			<b>answered question</b>	<b>23</b>
			<b>skipped question</b>	<b>0</b>

3. Do you install and service automatic leak detection systems that measure changes in a R/AC system's refrigerant level?			Response Percent	Response Count
Yes			20.0%	3
No (go to question #3)			80.0%	12
			<i>answered question</i>	15
			<i>skipped question</i>	8

4. What is the average equipment and installation costs for an automatic leak detection system that measures changes in a R/AC system's refrigerant level?						
	\$Under \$2,500	\$2,500-\$5,000	\$5,001-\$10,000	Over \$10,000	Response Count	
Refrigeration - Initial Installation	50.0% (1)	0.0% (0)	0.0% (0)	50.0% (1)	2	
Refrigeration - Retrofit Installation	50.0% (1)	0.0% (0)	0.0% (0)	50.0% (1)	2	
					<i>answered question</i>	2
					<i>skipped question</i>	21

5. Do you install and service automatic leak detection systems that measures the refrigerant level in the air in a room?			Response Percent	Response Count
Yes			26.7%	4
No (If no, select done on the bottom of this page to go to next page)			73.3%	11
			<i>answered question</i>	15
			<i>skipped question</i>	8

**6. What is the average equipment and installation cost for an automatic leak detection system that measures the refrigerant level in the air in a room, including all sensors?**

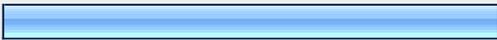
	<b>\$Under \$2,500</b>	<b>\$2,500 to \$5,000</b>	<b>\$5,001 to \$10,000</b>	<b>Over \$10,000</b>	<b>Response Count</b>
Refrigeration - Initial Installation	0.0% (0)	0.0% (0)	33.3% (1)	<b>66.7% (2)</b>	3
Refrigeration - Retrofit Installation	25.0% (1)	0.0% (0)	<b>50.0% (2)</b>	25.0% (1)	4
	<b>answered question</b>				<b>4</b>
	<b>skipped question</b>				<b>19</b>

**7. What is the average number of sensors that are used in an automatic leak detection system that measures the refrigerant level in the air in a room?**

	<b>1</b>	<b>2-3</b>	<b>4-5</b>	<b>6-10</b>	<b>Greater than 10</b>	<b>Response Count</b>
Parallel Rack Refrigeration System	0.0% (0)	<b>66.7% (2)</b>	0.0% (0)	0.0% (0)	33.3% (1)	3
Remote Condensing Refrigeration System	0.0% (0)	<b>50.0% (1)</b>	<b>50.0% (1)</b>	0.0% (0)	0.0% (0)	2
Industrial Refrigeration System	0.0% (0)	<b>50.0% (1)</b>	<b>50.0% (1)</b>	0.0% (0)	0.0% (0)	2
	<b>answered question</b>					<b>4</b>
	<b>skipped question</b>					<b>19</b>

**8. What is the average equipment and installation cost for each additional sensor for an automatic leak detection system that measures the refrigerant level in the air in a room?**

	<b>\$Under \$100</b>	<b>\$101 to \$250</b>	<b>\$251 to \$500</b>	<b>Over \$500</b>	<b>Response Count</b>
Parallel Rack Refrigeration System	0.0% (0)	33.3% (1)	<b>66.7% (2)</b>	0.0% (0)	3
Remote Condensing Refrigeration System	0.0% (0)	0.0% (0)	<b>100.0% (2)</b>	0.0% (0)	2
Industrial Refrigeration System	0.0% (0)	0.0% (0)	<b>100.0% (2)</b>	0.0% (0)	2
	<b>answered question</b>				<b>4</b>
	<b>skipped question</b>				<b>19</b>

9. Do you currently provide commercial/industrial refrigeration system leak inspection or repair services?			Response Percent	Response Count
Yes			45.5%	5
No (If no, select done on the bottom of this page to go to next page)			54.5%	6
			<i>answered question</i>	<b>11</b>
			<i>skipped question</i>	<b>12</b>

10. When you conduct a preventative maintenance leak inspection for the listed types of commercial/industrial refrigeration systems, what process do you use to detect a leak (check all that apply)?					
	Review Refrigerant Use	Visual Inspection	Hand Held Refrigerant Leak Detector	Bubble Test	Response Count
Self-contained System	80.0% (4)	<b>100.0% (5)</b>	80.0% (4)	<b>100.0% (5)</b>	5
Parallel Rack System	66.7% (2)	<b>100.0% (3)</b>	<b>100.0% (3)</b>	<b>100.0% (3)</b>	3
Remote Condensing System	80.0% (4)	<b>100.0% (5)</b>	80.0% (4)	<b>100.0% (5)</b>	5
Industrial System	75.0% (3)	<b>100.0% (4)</b>	75.0% (3)	<b>100.0% (4)</b>	4
Other (please specify)					0
<i>answered question</i>					<b>5</b>
<i>skipped question</i>					<b>18</b>

**11. What do you charge for a preventative maintenance leak inspection for the listed types of commercial/industrial refrigeration systems?**

	<b>Under \$150</b>	<b>\$151 to \$250</b>	<b>\$251 to \$350</b>	<b>Greater than \$350</b>	<b>Response Count</b>
Self-contained System	<b>40.0% (2)</b>	20.0% (1)	<b>40.0% (2)</b>	0.0% (0)	5
Parallel Rack System	0.0% (0)	33.3% (1)	<b>66.7% (2)</b>	0.0% (0)	3
Remote Condensing System	40.0% (2)	0.0% (0)	<b>60.0% (3)</b>	0.0% (0)	5
Industrial System	<b>66.7% (2)</b>	0.0% (0)	33.3% (1)	0.0% (0)	3
Other (please specify)					0
<b>answered question</b>					<b>5</b>
<b>skipped question</b>					<b>18</b>

**12. What is the average certified technician labor hours required for leak repairs for the listed types of commercial/industrial refrigeration systems?**

	<b>1 to 2</b>	<b>3 to 5</b>	<b>6 to 10</b>	<b>11 to 20</b>	<b>Greater than 20</b>	<b>Response Count</b>
Self-contained System	<b>60.0% (3)</b>	40.0% (2)	0.0% (0)	0.0% (0)	0.0% (0)	5
Parallel Rack System	0.0% (0)	<b>100.0% (3)</b>	0.0% (0)	0.0% (0)	0.0% (0)	3
Remote Condensing System	20.0% (1)	<b>60.0% (3)</b>	20.0% (1)	0.0% (0)	0.0% (0)	5
Industrial System	<b>33.3% (1)</b>	<b>33.3% (1)</b>	0.0% (0)	<b>33.3% (1)</b>	0.0% (0)	3
Other (please specify)						0
<b>answered question</b>						<b>5</b>
<b>skipped question</b>						<b>18</b>

**13. What is the average additional refrigerant charge (in pounds) required for leak repairs for the listed types of commercial/industrial refrigeration systems?**

	1 to 10	11 to 50	51 to 100	101 to 200	Greater than 200	Response Count
Self-contained System	<b>80.0% (4)</b>	20.0% (1)	0.0% (0)	0.0% (0)	0.0% (0)	5
Parallel Rack System	0.0% (0)	<b>66.7% (2)</b>	0.0% (0)	33.3% (1)	0.0% (0)	3
Remote Condensing System	<b>40.0% (2)</b>	20.0% (1)	20.0% (1)	20.0% (1)	0.0% (0)	5
Industrial System	<b>66.7% (2)</b>	0.0% (0)	0.0% (0)	33.3% (1)	0.0% (0)	3
Other (please specify)						0
<b>answered question</b>						<b>5</b>
<b>skipped question</b>						<b>18</b>

**14. Of the time you and your technicians spend repairing leaks in commercial/industrial refrigeration systems, what percentage of time is spent repairing leaks on each of the listed system types? (As an example of frequency of all repairs, Self-contained Systems may be 60% of all repairs and Parallel Rack Systems 40% to total 100% of all repairs.)**

	Less than 20%	21% - 40%	41% to 60%	61% to 80%	Greater than 80%	Response Count
Self-contained System	<b>60.0% (3)</b>	20.0% (1)	20.0% (1)	0.0% (0)	0.0% (0)	5
Parallel Rack System	<b>66.7% (2)</b>	33.3% (1)	0.0% (0)	0.0% (0)	0.0% (0)	3
Remote Condensing System	<b>60.0% (3)</b>	20.0% (1)	20.0% (1)	0.0% (0)	0.0% (0)	5
Industrial System	<b>66.7% (2)</b>	0.0% (0)	0.0% (0)	0.0% (0)	33.3% (1)	3
Other (please specify)						0
<b>answered question</b>						<b>5</b>
<b>skipped question</b>						<b>18</b>

**15. What types of commercial/industrial refrigeration systems are found in each of the listed refrigerant charge size categories (check all that apply)?**

	Refrigerant Charge Less than 50 lbs	Refrigerant Charge Between 50 and 200 lbs	Refrigerant Charge Between 200 and 2,000 lbs	Refrigerant Charge Greater than 2,000 lbs	Response Count
Self-contained System	<b>100.0% (5)</b>	20.0% (1)	0.0% (0)	0.0% (0)	5
Parallel Rack System	33.3% (1)	<b>66.7% (2)</b>	<b>66.7% (2)</b>	0.0% (0)	3
Remote Condensing System	<b>60.0% (3)</b>	40.0% (2)	40.0% (2)	0.0% (0)	5
Industrial System	<b>66.7% (2)</b>	0.0% (0)	33.3% (1)	0.0% (0)	3
Other (please specify)					0
<b>answered question</b>					<b>5</b>
<b>skipped question</b>					<b>18</b>

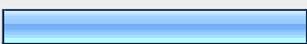
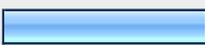
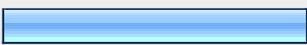
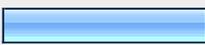
**16. What commercial/industrial refrigeration system components are most often serviced for leak repairs for the listed types of commercial/industrial refrigeration systems?**

	Compressors	Coils	Evaporators	Joints	Valves	Response Count
Self-contained System	0.0% (0)	20.0% (1)	20.0% (1)	20.0% (1)	<b>40.0% (2)</b>	5
Parallel Rack System	33.3% (1)	0.0% (0)	0.0% (0)	0.0% (0)	<b>66.7% (2)</b>	3
Remote Condensing System	20.0% (1)	0.0% (0)	20.0% (1)	<b>40.0% (2)</b>	20.0% (1)	5
Industrial System	0.0% (0)	<b>33.3% (1)</b>	0.0% (0)	<b>33.3% (1)</b>	<b>33.3% (1)</b>	3
Other (please specify)						0
<b>answered question</b>						<b>5</b>
<b>skipped question</b>						<b>18</b>

**17. How long does a commercial/industrial refrigeration system refrigerant leak repair last before a component is likely to require additional repair?**

	Compressors	Coils	Evaporators	Joints	Valves	Response Count
Less than 6 Months	0.0% (0)	<b>100.0% (1)</b>	0.0% (0)	0.0% (0)	0.0% (0)	1
6 to 12 Months	0.0% (0)	0.0% (0)	33.3% (1)	0.0% (0)	<b>66.7% (2)</b>	3
1 to 2 Years	0.0% (0)	0.0% (0)	<b>50.0% (1)</b>	<b>50.0% (1)</b>	0.0% (0)	2
2 to 4 Years	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	<b>100.0% (2)</b>	2
Greater than 4 Years	<b>50.0% (2)</b>	0.0% (0)	0.0% (0)	<b>50.0% (2)</b>	0.0% (0)	4
Other (please specify)						0
<b>answered question</b>						<b>4</b>
<b>skipped question</b>						<b>19</b>

**18. How do you manage empty non-refillable refrigerant cylinders (check all that apply)?**

		Response Percent	Response Count
<b>Provide to Refrigerant Distributor</b>		<b>33.3%</b>	<b>3</b>
Provide to Refrigerant Reclaimer		0.0%	0
Provide to Metals Recycler for Recycling		22.2%	2
<b>Dispose in Refuse</b>		<b>33.3%</b>	<b>3</b>
Other (please specify)		22.2%	2
<b>answered question</b>			<b>9</b>
<b>skipped question</b>			<b>14</b>

**19. What percentage of commercial/industrial refrigeration systems require "additional" refrigerant charge to adjust for changes in the weather (seasonal adjustments) at any time during the year?**

	0%	1% to 10%	11% to 25%	Greater than 25%	Response Count
Self-contained System	42.9% (3)	<b>57.1% (4)</b>	0.0% (0)	0.0% (0)	7
Parallel Rack System	<b>50.0% (2)</b>	25.0% (1)	0.0% (0)	25.0% (1)	4
Remote Condensing System	<b>57.1% (4)</b>	14.3% (1)	14.3% (1)	14.3% (1)	7
Industrial System	<b>25.0% (1)</b>	<b>25.0% (1)</b>	<b>25.0% (1)</b>	<b>25.0% (1)</b>	4
Other (please specify)					0
<b>answered question</b>					<b>7</b>
<b>skipped question</b>					<b>16</b>

**20. What percentage of commercial/industrial refrigeration systems require a "reduction" of the refrigerant charge to adjust for changes in the weather (seasonal adjustments) at any time during the year?**

	0%	1% to 10%	11% to 25%	Greater than 25%	Response Count
Self-contained System	<b>85.7% (6)</b>	14.3% (1)	0.0% (0)	0.0% (0)	7
Parallel Rack System	<b>75.0% (3)</b>	0.0% (0)	25.0% (1)	0.0% (0)	4
Remote Condensing System	<b>85.7% (6)</b>	0.0% (0)	14.3% (1)	0.0% (0)	7
Industrial System	<b>75.0% (3)</b>	0.0% (0)	25.0% (1)	0.0% (0)	4
Other (please specify)					0
<b>answered question</b>					<b>7</b>
<b>skipped question</b>					<b>16</b>

21. Optional Information			Response Percent	Response Count
Company Name:			0.0%	0
Contact:			0.0%	0
E-mail:			100.0%	1
Phone Number:			0.0%	0
		<i>answered question</i>		1
		<i>skipped question</i>		22

22. Would you like to be included in the Refrigerant Management Program mail list to obtain future notices regarding this program?			Response Percent	Response Count
Yes			42.9%	3
No			57.1%	4
		Comments:		0
		<i>answered question</i>		7
		<i>skipped question</i>		16