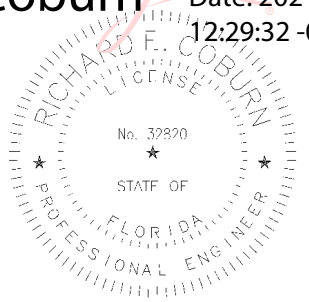
1946 TABERNACLE BAPTIST

Location	**LAKE CITY FLORIDA**
Building owner	
Program user	**RE COBURN**
Company	**COBURN AND ASSOCIATES INC**
Comments	

Richard E Coburn
Digitally signed by Richard E Coburn
Date: 2021.01.16 12:29:32 -05'00'



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By	**COBURN AND ASSOCIATES, INC**
Dataset name	**C:\Users\recob\OneDrive\Documents\TRACE 700 Projects\1946.trc**
Calculation time	**12:23 PM on 01/16/2021**
TRACE® 700 version	**6.3.4**

Location	**Jacksonville, Florida**	
Latitude	**30.0**	**deg**
Longitude	**81.0**	**deg**
Time Zone	**5**	
Elevation	**24**	**ft**
Barometric pressure	**29.9**	**in. Hg**
Air density	**0.0760**	**lb/cu ft**
Air specific heat	**0.2444**	**Btu/lb·°F**
Density-specific heat product	**1.1144**	**Btu/h·cfm·°F**
Latent heat factor	**4,905.3**	**Btu·min/h·cu ft**
Enthalpy factor	**4.5588**	**lb·min/hr·cu ft**
Summer design dry bulb	**97.3**	**°F**
Summer design wet bulb	**76.5**	**°F**
Winter design dry bulb	**32.0**	**°F**
Summer clearness number	**0.95**	
Winter clearness number	**0.95**	
Summer ground reflectance	**0.20**	
Winter ground reflectance	**0.20**	
Carbon Dioxide Level	**400**	**ppm**

Design simulation period	**January - December**
Cooling load methodology	**TETD-TA1**
Heating load methodology	**UATD**

Design Cooling Load Summary

By COBURN AND ASSOCIATES, INC
1946 TABERNACLE BAPTIST
LAKE CITY FLORIDA

System - System - 001

Type - Rooftop Multizone

Coil Location - System

Coil Peak Calculation Time: August, hour 17
Ambient DB/WB/HR: 93 / 78 / 119

COOLING COIL LOAD INFORMATION

Load Component	Sensible Btu/h	Latent Btu/h	Total Btu/h	Percent of Total
Solar Gain	0		0	0.0%
Glass Transmission	77		77	0.2%
Wall Transmission	1,966		1,966	3.9%
Roof Transmission	0		0	0.0%
Floor Transmission	0		0	0.0%
Adj Floor Transmission	0		0.00	0.0%
Partition Transmission	0		0	0.0%
Net Ceiling Load	0		0	0.0%
Lighting	1,988		1,988	3.9%
People	1,250	1,250	2,500	4.9%
Misc. Equipment Loads	29,300	0	29,300	57.4%
Cooling Infiltration	0	0	0	0.0%
Sub-Total ==>	34,581	1,250	35,831	70.2%
Ventilation Load	3,900	7,595	11,495	22.5%
Exhaust Heat	-362	0	-362	-0.7%
Supply Fan Load	0		0	0.0%
Return Fan Load	0		0	0.0%
Net Duct Heat Pickup	0		0	0.0%
Wall Load to Plenum	491		491	1.0%
Roof Load to Plenum	3,084		3,084	6.0%
Adj Floor to Plenum	0		0	0.0%
Lighting Load to Plenum	497		497	1.0%
Misc. Equip. Load to Plenum	0	0	0	0.0%
Glass Transmission to Plenum	0		0	0.0%
Glass Solar to Plenum	0		0	0.0%
Over/Under Sizing	0		0	0.0%
Reheat at Design	0	0	0	0.0%
Underfloor Sup Heat Pickup	0		0	0.0%
Supply Air Leakage	0	0	0	0.0%
Total Cooling Loads	42,191	8,845	51,036	100.0 %

COOLING COIL SELECTION

Coil Selection Parameters

Coil Entering Air (DB / WB)	78.2 / 64.8	°F
Coil Entering Humidity Ratio	70.28	gr/lb
Coil Leaving Air (DB / WB)	59.1 / 56.5	°F
Coil Leaving Humidity Ratio	64.00	gr/lb
Coil Sensible Load	42.19	MBh
Coil Total Load	51.04	MBh
Cooling Supply Air Temperature	59.08	°F
Total Cooling Airflow	1,978.57	cfm
Resulting Room Relative Humidity	49.87	%

General Engineering Checks

Total Cooling Load	4.3	ton
Area / Load	225.72	ft²/ton
Total Floor Area	960	ft²
Cooling Airflow	2.06	cfm/ft²
Airflow / Load	465.21	cfm/ton
Percent Outdoor Air	10.1	%
Cooling Load Methodology	TETD-TA1	

PEAK COOLING LOADS

MAIN SYSTEM

By COBURN AND ASSOCIATES, INC

System	Zone	Room		Floor Area ft²	SPACE Peak Time Mo/Hr	SPACE OA Condition DB °F	SPACE OA Condition WB °F	SPACE Room Dry Bulb °F	SPACE Supply Dry Bulb °F	SPACE Space Air Flow cfm	SPACE Space Sensible Load Btu/h	SPACE Space Latent Load Btu/h	COIL Peak Time Mo/Hr	COIL OA Condition DB °F	COIL OA Condition WB °F	COIL Supply Dry Bulb °F	COIL Coil Airflow cfm	COIL Coil Sensible Load Btu/h	COIL Coil Latent Load Btu/h
Alternative 1																			
		KITCHEN	Peak	960	6 /17	96	76	75.0	59.1	1,979	35,110	1,250	8 /17	93	78	59.1	1,979	42,191	8,845
System - 001			**Peak**	**960**		**96**	**76**	**75.0**	**59.1**	**1,979**	**35,110**	**1,250**		**93**	**78**	**59.1**	**1,979**	**42,191**	**8,845**
System - 001			**Block**	**960**	**6 /17**	**96**	**76**	**75.0**	**59.1**	**1,979**	**35,110**	**1,250**	**8 /17**	**93**	**78**	**59.1**	**1,979**	**42,191**	**8,845**

TABERNACLE BAPTIST CHURCH

KITCHEN EQUIPMENT LOAD CALCULATIONS FOR HVAC

MARK	DESCRIPTION	KW INPUT	GAS INPUT		DIVERSITY	CALC BTU SENS	HOOD Y/N)	FROM TABLES SENSIBLE	LATENT
NA	3 COMP FRYER		0	75000	10	7500	Y		
NA	FLAT TOP GRIDDLE			90000	10	9000	Y		
NA	4 BURNER STOVE			48000	10	4800	Y		
NA	OVEN		0	80000	10	8000			
TOTAL SENSIBLE LOAD FROM KITCHEN EQUIP						29300			

NOTE: CALCULATED KITCHEN LOADS ARE ADDED INTO THE LOAD CALCULATION AS A LINE ITEM

								0	0