

Load Calculations

Date: 11/29/09

SUBMITTED BY: COSENTINI ASSOCIATES INC., ONE EAST WACKER DRIVE, CHICAGO, IL 60601
PROJECT NAME: Duluth Airport

ADDRESS: Duluth, MN

BUILDING EXTERIOR DIMENSIONS: LENGTH:

WIDTH:

AREA 94,000 SQ. FT.

AREA SERVED:

Main Service for Terminal

EQUIPMENT NAME:

MSG-1A

SIZE (AMPS):

3000 A

VOLTAGE:

FEEDER TYPE:

LOAD TYPE:

O.C. PROTECTION:

	208Y/120V, 3 Ph, 4 W	X
	208V, 3 Ph, 3 W	
X	480Y/277V, 3 Ph, 4 W	
	480V, 3 Ph, 3 W	

SERVICE DISTRIBUTION
BRANCH
OTHER

X	LIGHTING
X	APPLIANCE
X	HEAT
X	MOTORS
X	RECEPTACLE
X	EMERG./EXIT LTG
	OTHER - F/A, TELCO

M.L.O.
MAIN C/B
MAIN SWITCH/ FUSE

FEEDER SIZE:

LOAD CALCULATIONS

GENERAL LIGHTING

LIGHTING:	94,000	X		3		=	282,000
	w/sf			w/sf			WATTS (A)
RECEPTACLE:	94,000	X		5		=	470,000
	s/r			w/sr			WATTS (B)
				10000	@	100% DEMAND	= 10,000
				WATTS			WATTS (C)
				460000	X	50%	230,000
REMAINING @ 50% DEMAND							WATTS (D)
TOTAL LOAD:							= 522,000
							TOTAL WATTS
TOTAL AMPS:							628
							TOTAL AMPS

MOTOR LOADS				1000 HP		1200.00 AMPS
TOTAL DESIGN HP				0 HP		.00 AMP
MOTORS – AIR CONDITIONING (LESS LARGEST MOTOR):				30 HP		10.00 AMPS
LARGEST MOTOR HP:				75 HP		102.00 AMPS
25% LARGEST MOTOR AMPS:						68.00 AMPS
ELEVATORS (3@25HP EA):						
ESCALATORS (2@25HP EA):						1380.00 AMPS
TOTAL AMPS:						

HEAT LOADS				0 KW		.00 AMP
TOTAL KW:						
TOTAL AMPS:						

APPLIANCE AND AIRPORT EQUIPMENT LOADS

TOTAL KW:				600 KW		722 AMP
TOTAL AMPS:						
TOTAL AMPS PER FEEDER:				2730 AMPS		

Load Calculations

Date: 11/20/09

SUBMITTED BY: COSENTINI ASSOCIATES INC., ONE EAST WACKER DRIVE, CHICAGO, IL 60601
PROJECT NAME: Duluth Airport
ADDRESS: Duluth, MN
BUILDING EXTERIOR DIMENSIONS: LENGTH: WIDTH: AREA 19,500 SQ.FT.

AREA SERVED: 3rd Flr and Roof (HVAC Equip.)
EQUIPMENT NAME: SB-3
SIZE (AMPS): 1600 A
VOLTAGE: FEEDER TYPE:

O.C. PROTECTION:

			X LIGHTING	M.L.O.
			X APPLIANCE	X MAIN C/B
			X HEAT	
			X MOTORS	X MAN SWITCH/FUSE
			X REPLACEMENT	
			X EMERG./EXIT LGS	
			OTHER - F/A, TELCO	

FEEDER SIZE:

LOAD CALCULATIONS

GENERAL LIGHTING									
LIGHTING:	19,500	X	3	=	58,500				
	/Sf		W/SF		WMTS (A)				
RECEPACLE:	19,500	X	5	=	97,500				
	/Sf		W/SF		WMTS (B)				
			10000	@	100% DEMAND	=	10,000		
REMAINING @ 50% DEMAND			WMTS				WMTS (C)		
TOTAL LOAD:			87500	X	50%		43,750		
			WMTS (B) – WMTS (C)				WMTS (D)		
TOTAL AMPS:			WMTS (A) + WMTS (C) + WMTS (D)	=	112,250		TOTAL WMTS		
				=	135		TOTAL AMPS		

MOTOR LOADS									
TOTAL DESIGN HP	850	HP	1022.00	AMPS					
MOTORS ~ AIR CONDITIONING (LESS LARGEST MOTOR):	0	HP	0.00	AMPS					
LARGEST MOTOR HP:	30	HP							
25% LARGEST MOTOR AMPS:			10.00	AMPS					
ELEVATORS (3@25HP EA):	0	HP	0.00	AMPS					
ESCALATORS (2@25HP EA):	0	HP	0.00	AMPS					
TOTAL AMPS:			1032.00	AMPS					

HEAT LOADS									
TOTAL KW:			0	KW					
TOTAL AMPS:			0	AMPS					

APPLIANCE AND AIRPORT EQUIPMENT LOADS									
TOTAL KW:			30	KW					
TOTAL AMPS:			36	AMPS					

TOTAL AMPS PER FEEDER:			1203	AMPS					
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Generator Load Calculations			
	Emergency Load	Generator Capacity	
	HP or kW	Assigned, kVA	
Emergency Lighting	24	24	
Elevator	25	43 *	
Elevator	25	43 *	
Elevator	25	43 *	
Emergency house loads	730	730	
Fire Pump	100	103	
Total		986	
Generator Size, kW			1500

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LIGHTING

XXXXXXXXXX

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 LOAD CALCULATIONS
 AND ELECTRICAL
 ABBREVIATIONS

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