

PRM Fan Power Details

By MFIA Inc.

Baseline Alternative: Alternative 2 - ASHRAE Baseline 90.1-10 Climate Zone 4C

Method: 90.1-2010 Performance Rating Method

System Description:	System - 001 1st South-West	
System Type:	Single Zone	
User-entered Total Fan Power	3.53	kW
Design Supply Airflow	2,211	cfm

PRM Fan Power Adjustment Factor	Static	
	Adjustment	Airflow
	in. H2O	cfm
Primary	0.50	2,211
Main Exhaust	0.00	0
Room Exhaust	0.00	0
Return	0.00	2,211
Ventilation	0.00	0

PRM Fan Motor Efficiency	89.50	%
PRM Fan Power Adjustment BHP	0.27	Bhp
Calculated System BHP	2.35	Bhp
Total Fan Power	1.96	kW
Fan Ratio Override	0.555	

Zone Description	Fan Name	Fan Type	Fan Level	Design Airflow (cfm)	Original F.L. Rate (kW)	PRM Fan Power (kW)
Zone - 001						
	FC Centrifugal Const Vol	Primary fan	Zone	2,211	2.34	1.30
	FC Centrifugal const vol	Return fan	Zone	2,211	1.18	0.66

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Method: 90.1-2010 Performance Rating Method

System Description: System - 002 1st South-East
 System Type: Single Zone
 User-entered Total Fan Power 4.15 kW
 Design Supply Airflow 2,601 cfm

PRM Fan Power Adjustment Factor Static

	Adjustment in. H2O	Airflow cfm
Primary	0.50	2,601
Main Exhaust	0.00	0
Room Exhaust	0.00	0
Return	0.00	2,601
Ventilation	0.00	0

PRM Fan Motor Efficiency 89.50 %
 PRM Fan Power Adjustment BHP 0.32 Bhp
 Calculated System BHP 2.76 Bhp
 Total Fan Power 2.30 kW
 Fan Ratio Override 0.555

Zone Description	Fan Name	Fan Type	Fan Level	Design Airflow (cfm)	Original F.L. Rate (kW)	PRM Fan Power (kW)
Zone - 002						
	FC Centrifugal Const Vol	Primary fan	Zone	2,601	2.76	1.53
	FC Centrifugal const vol	Return fan	Zone	2,601	1.39	0.77

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Method: 90.1-2010 Performance Rating Method

System Description: System - 003 1st North West
 System Type: Single Zone
 User-entered Total Fan Power 1.65 kW
 Design Supply Airflow 1,036 cfm

PRM Fan Power Adjustment Factor Static

	Adjustment in. H2O	Airflow cfm
Primary	0.50	1,036
Main Exhaust	0.00	0
Room Exhaust	0.00	0
Return	0.00	1,036
Ventilation	0.00	0

PRM Fan Motor Efficiency 86.50 %
 PRM Fan Power Adjustment BHP 0.13 Bhp
 Calculated System BHP 1.10 Bhp
 Total Fan Power 0.95 kW
 Fan Ratio Override 0.574

Zone Description	Fan Name	Fan Type	Fan Level	Design Airflow (cfm)	Original F.L. Rate (kW)	PRM Fan Power (kW)
Zone - 003						
	FC Centrifugal Const Vol	Primary fan	Zone	1,036	1.10	0.63
	FC Centrifugal const vol	Return fan	Zone	1,036	0.55	0.32

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Method: 90.1-2010 Performance Rating Method

System Description: System - 004 1st North East
 System Type: Single Zone
 User-entered Total Fan Power 2.90 kW
 Design Supply Airflow 1,817 cfm

PRM Fan Power Adjustment Factor Static

	Adjustment in. H2O	Airflow cfm
Primary	0.50	1,817
Main Exhaust	0.00	0
Room Exhaust	0.00	0
Return	0.00	1,817
Ventilation	0.00	0

PRM Fan Motor Efficiency 86.50 %
 PRM Fan Power Adjustment BHP 0.22 Bhp
 Calculated System BHP 1.93 Bhp
 Total Fan Power 1.66 kW
 Fan Ratio Override 0.574

Zone Description	Fan Name	Fan Type	Fan Level	Design Airflow (cfm)	Original F.L. Rate (kW)	PRM Fan Power (kW)
Zone - 004						
	FC Centrifugal Const Vol	Primary fan	Zone	1,817	1.93	1.11
	FC Centrifugal const vol	Return fan	Zone	1,817	0.97	0.56

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Baseline Alternative: Alternative 2 - ASHRAE Baseline 90.1-10 Climate Zone 4C

Method: 90.1-2010 Performance Rating Method

System Description: System - 005 Teaching Kitchen
 System Type: Single Zone
 User-entered Total Fan Power 1.99 kW
 Design Supply Airflow 1,245 cfm

PRM Fan Power Adjustment Factor	Static	
	Adjustment	Airflow
	in. H2O	cfm
Primary	0.50	1,245
Main Exhaust	0.00	0
Room Exhaust	0.00	0
Return	0.00	1,245
Ventilation	0.00	0

PRM Fan Motor Efficiency	86.50	%
PRM Fan Power Adjustment BHP	0.15	Bhp
Calculated System BHP	1.32	Bhp
Total Fan Power	1.14	kW
Fan Ratio Override	0.574	

Zone Description	Fan Name	Fan Type	Fan Level	Design Airflow (cfm)	Original F.L. Rate (kW)	PRM Fan Power (kW)
Zone - 005						
	FC Centrifugal const vol	Return fan	Zone	1,245	0.67	0.38
	FC Centrifugal Const Vol	Primary fan	Zone	1,245	1.32	0.76

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Method: 90.1-2010 Performance Rating Method

System Description: System - 006 2nd South-West
 System Type: Single Zone
 User-entered Total Fan Power 3.87 kW
 Design Supply Airflow 2,425 cfm

PRM Fan Power Adjustment Factor Static

	Adjustment in. H2O	Airflow cfm
Primary	0.50	2,425
Main Exhaust	0.00	0
Room Exhaust	0.00	0
Return	0.00	2,425
Ventilation	0.00	0

PRM Fan Motor Efficiency 89.50 %
 PRM Fan Power Adjustment BHP 0.29 Bhp
 Calculated System BHP 2.57 Bhp
 Total Fan Power 2.15 kW
 Fan Ratio Override 0.555

Zone Description	Fan Name	Fan Type	Fan Level	Design Airflow (cfm)	Original F.L. Rate (kW)	PRM Fan Power (kW)
Zone - 006						
	FC Centrifugal Const Vol	Primary fan	Zone	2,425	2.57	1.43
	FC Centrifugal const vol	Return fan	Zone	2,425	1.30	0.72

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Method: 90.1-2010 Performance Rating Method

System Description: System - 007 2nd South-East
 System Type: Single Zone
 User-entered Total Fan Power 4.05 kW
 Design Supply Airflow 2,542 cfm

PRM Fan Power Adjustment Factor Static

	Adjustment	Airflow
	in. H2O	cfm
Primary	0.50	2,542
Main Exhaust	0.00	0
Room Exhaust	0.00	0
Return	0.00	2,542
Ventilation	0.00	0

PRM Fan Motor Efficiency 89.50 %
 PRM Fan Power Adjustment BHP 0.31 Bhp
 Calculated System BHP 2.70 Bhp
 Total Fan Power 2.25 kW
 Fan Ratio Override 0.555

Zone Description	Fan Name	Fan Type	Fan Level	Design Airflow (cfm)	Original F.L. Rate (kW)	PRM Fan Power (kW)
Zone - 007						
	FC Centrifugal Const Vol	Primary fan	Zone	2,542	2.69	1.49
	FC Centrifugal const vol	Return fan	Zone	2,542	1.36	0.75

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Baseline Alternative: Alternative 2 - ASHRAE Baseline 90.1-10 Climate Zone 4C

Method: 90.1-2010 Performance Rating Method

System Description: System - 008 2nd North-West
 System Type: Single Zone
 User-entered Total Fan Power 2.52 kW
 Design Supply Airflow 1,581 cfm

PRM Fan Power Adjustment Factor Static

	Adjustment in. H2O	Airflow cfm
Primary	0.50	1,581
Main Exhaust	0.00	0
Room Exhaust	0.00	0
Return	0.00	1,581
Ventilation	0.00	0

PRM Fan Motor Efficiency 86.50 %
 PRM Fan Power Adjustment BHP 0.19 Bhp
 Calculated System BHP 1.68 Bhp
 Total Fan Power 1.45 kW
 Fan Ratio Override 0.574

Zone Description	Fan Name	Fan Type	Fan Level	Design Airflow (cfm)	Original F.L. Rate (kW)	PRM Fan Power (kW)
Zone - 008						
	FC Centrifugal Const Vol	Primary fan	Zone	1,581	1.68	0.96
	FC Centrifugal const vol	Return fan	Zone	1,581	0.85	0.49

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Method: 90.1-2010 Performance Rating Method

System Description: System - 009 2nd North East
 System Type: Single Zone
 User-entered Total Fan Power 4.31 kW
 Design Supply Airflow 2,704 cfm

PRM Fan Power Adjustment Factor Static

	Adjustment in. H2O	Airflow cfm
Primary	0.50	2,704
Main Exhaust	0.00	0
Room Exhaust	0.00	0
Return	0.00	2,704
Ventilation	0.00	0

PRM Fan Motor Efficiency 89.50 %
 PRM Fan Power Adjustment BHP 0.33 Bhp
 Calculated System BHP 2.87 Bhp
 Total Fan Power 2.39 kW
 Fan Ratio Override 0.555

Zone Description	Fan Name	Fan Type	Fan Level	Design Airflow (cfm)	Original F.L. Rate (kW)	PRM Fan Power (kW)
Zone - 009						
	FC Centrifugal Const Vol	Primary fan	Zone	2,704	2.87	1.59
	FC Centrifugal const vol	Return fan	Zone	2,704	1.45	0.80