

**CBECC-Com Input Data Model changes from 2016.3.0-SP2 (5583, July 2018) to 2019.1.0 (5962, May 2019):**

The compliance engine includes a backward compatibility mechanism that automatically addresses most data model changes, where property names or enumeration strings are revised or removed as the data model evolves. This mechanism also includes logic to write messages to project logs when backward compatibility for certain properties is expected to impact compliance analysis of a previous vs. current version of the tool. Additions to the data model or changes that require user input to determine the appropriate translation of properties/enumerations from previous to a current tool version are not something that the compliance engine supports in most cases.

Proj	Project			
<b>REMOVED</b>				
ExcptCondWtrHtrPrscrip	ExceptionalConditionWaterHeaterPrescriptive default: 2 1: "Yes" 2: "No"	Enumeration	-	Required input
AnnualSolFrac	AnnualSolarFraction	Float	-	CondRequired
<b>CHANGED</b>				
StdsVersion	StandardsVersion default: -1 1: "Compliance2015" 2: "Compliance2016" 1: "Compliance2016" 2: "Compliance2019"	Enumeration	-	Defaulted
				Replaced old selections with new
<b>ADDED</b>				
GasType	GasType default: -1 (no default) 1: "NaturalGas" 2: "Propane" 3: "None"			New Option
ExcptCondHERSKitHood	ExceptionalConditionHERSKitchenHood default: 0 1: "Yes" 2: "No"	Enumeration	-	Defaulted input
ProjRemarks	ProjectRemarks	String	-	Optional input
SimVarsVRFSys	SimulationVariablesVRFSsystem	Integer	-	Optional input
ZEROCODE	ZEROCODE	Integer	-	Optional input
PVBattSim	PhotovoltaicBatterySimulation	Integer	-	Optional input
VentStdDesc	VentilationStandardDescription	String	-	Optional input
CALGreenOutdrLtG	CALGreenOutdoorLighting	Integer	-	Optional input
CALGreenSHWRestaurant	CALGreenServiceHotWaterRestaurant	Integer	-	Optional input
CALGreenWarehouse	CALGreenWarehouse	Integer	-	Optional input
CALGreenDayltPAF	CALGreenDaylightPowerAdjustmentFactor	Integer	-	Optional input
CALGreenExhAirRcvry	CALGreenExhaustAirRecovery	Integer	-	Optional input
CALGreenOutdrLtGDetailsLctn	CALGreenOutdoorLightingDetailsLocation	String	-	Optional input
CALGreenSHWRestaurantDetailsLctn	CALGreenServiceHotWaterRestaurantDetailsLocation	String	-	Optional input
CALGreenWarehouseDetailsLctn	CALGreenWarehouseDetailsLocation	String	-	Optional input
CALGreenDayltPAFDetailsLctn	CALGreenDaylightPowerAdjustmentFactorDetailsLocation	String	-	Optional input
CALGreenExhAirRcvryDetailsLctn	CALGreenExhaustAirRecoveryDetailsLocation	String	-	Optional input

*CBEC-Com Input Data Model changes from 2016.3.0-SP2 (5583, July 2018) to 2019.1.0 (5962, May 2019)*

CALGreenNarrative	CALGreenNarrative	String	- Optional input
MandCompChk	MandatoryComplianceCheck	Integer	- Defaulted input
NRCAEnv03F	NRCAEnv03F	Integer	- Defaulted input
NRCVMch24H	NRCVMch24H	Integer	- Defaulted input
NRCVMch27H	NRCVMch27H	Integer	- Defaulted input
NRCVMch32H	NRCVMch32H	Integer	- Defaulted input
NRCAPrc14F	NRCAPrc14F	Integer	- Defaulted input
NRCAPrc15F	NRCAPrc15F	Integer	- Defaulted input
NRCAPrc16A	NRCAPrc16A	Integer	- Defaulted input

**Mat                      Material**

**CHANGED**

CodeCat	CodeCategory	Enumeration	- Compulsory input
	default: 0		
	0: "- specify -"		
	10: "Air"		
	20: "Bldg Board and Siding"		
	30: "Building Membrane"		
	40: "Composite"		
	50: "Concrete"		
	60: "Concrete Sandwich Panel"		
	61: "Curtain Walls"		<b>New Option</b>
	70: "Finish Materials"		
	80: "ICF Wall"		
	90: "Insulation Batt"		
	100: "Insulation Board"		
	110: "Insulation Loose Fill"		
	120: "Insulation Other"		
	130: "Insulation Spray Applied"		
	140: "Masonry Materials"		
	150: "Masonry Units Hollow"		
	160: "Masonry Units Solid"		
	170: "Masonry Units with Fill"		
	180: "Metal Insulated Panel Wall"		
	190: "Plastering Materials"		
	200: "Roofing"		
	210: "SIPS Floor"		
	220: "SIPS Roof"		
	230: "SIPS Wall"		
	240: "Spandrel Panels"		<b>Revised Option</b>
	250: "Straw Bale Wall"		
	260: "Woods"		

CodeItem	CodeItem	Enumeration	- Compulsory input
	When: Mat:CodeCat = "Curtain Walls"		
	default: 0		
	0: "- specify -"		
	5100: "Aluminum w/out Thrml Break - Single glass pane. stone. or metal pane - No Ins."		<b>New Options</b>
	5101: "Aluminum w/out Thrml Break - Single glass pane. stone. or metal pane - R4 Ins."		
	5102: "Aluminum w/out Thrml Break - Single glass pane. stone. or metal pane - R7 Ins."		
	5103: "Aluminum w/out Thrml Break - Single glass pane. stone. or metal pane - R10 Ins."		
	5104: "Aluminum w/out Thrml Break - Single glass pane. stone. or metal pane - R15 Ins."		

5105: "Aluminum w/out Thrml Break - Single glass pane. stone. or metal pane - R20 Ins."  
 5106: "Aluminum w/out Thrml Break - Single glass pane. stone. or metal pane - R25 Ins."  
 5107: "Aluminum w/out Thrml Break - Single glass pane. stone. or metal pane - R30 Ins."  
 5108: "Aluminum w/out Thrml Break - Double glass with no low e coatings - No Ins."  
 5109: "Aluminum w/out Thrml Break - Double glass with no low e coatings - R4 Ins."  
 5110: "Aluminum w/out Thrml Break - Double glass with no low e coatings - R7 Ins."  
 5111: "Aluminum w/out Thrml Break - Double glass with no low e coatings - R10 Ins."  
 5112: "Aluminum w/out Thrml Break - Double glass with no low e coatings - R15 Ins."  
 5113: "Aluminum w/out Thrml Break - Double glass with no low e coatings - R20 Ins."  
 5114: "Aluminum w/out Thrml Break - Double glass with no low e coatings - R25 Ins."  
 5115: "Aluminum w/out Thrml Break - Double glass with no low e coatings - R30 Ins."  
 5116: "Aluminum w/out Thrml Break - Triple or low e glass - No Ins."  
 5117: "Aluminum w/out Thrml Break - Triple or low e glass - R4 Ins."  
 5118: "Aluminum w/out Thrml Break - Triple or low e glass - R7 Ins."  
 5119: "Aluminum w/out Thrml Break - Triple or low e glass - R10 Ins."  
 5120: "Aluminum w/out Thrml Break - Triple or low e glass - R15 Ins."  
 5121: "Aluminum w/out Thrml Break - Triple or low e glass - R20 Ins."  
 5122: "Aluminum w/out Thrml Break - Triple or low e glass - R25 Ins."  
 5123: "Aluminum w/out Thrml Break - Triple or low e glass - R30 Ins."  
 5124: "Aluminum w/ Thrml Break - Single glass pane. stone. or metal pane - No Ins."  
 5125: "Aluminum w/ Thrml Break - Single glass pane. stone. or metal pane - R4 Ins."  
 5126: "Aluminum w/ Thrml Break - Single glass pane. stone. or metal pane - R7 Ins."  
 5127: "Aluminum w/ Thrml Break - Single glass pane. stone. or metal pane - R10 Ins."  
 5128: "Aluminum w/ Thrml Break - Single glass pane. stone. or metal pane - R15 Ins."  
 5129: "Aluminum w/ Thrml Break - Single glass pane. stone. or metal pane - R20 Ins."  
 5130: "Aluminum w/ Thrml Break - Single glass pane. stone. or metal pane - R25 Ins."  
 5131: "Aluminum w/ Thrml Break - Single glass pane. stone. or metal pane - R30 Ins."  
 5132: "Aluminum w/ Thrml Break - Double glass with no low e - No Ins."  
 5133: "Aluminum w/ Thrml Break - Double glass with no low e - R4 Ins."  
 5134: "Aluminum w/ Thrml Break - Double glass with no low e - R7 Ins."  
 5135: "Aluminum w/ Thrml Break - Double glass with no low e - R10 Ins."  
 5136: "Aluminum w/ Thrml Break - Double glass with no low e - R15 Ins."  
 5137: "Aluminum w/ Thrml Break - Double glass with no low e - R20 Ins."  
 5138: "Aluminum w/ Thrml Break - Double glass with no low e - R25 Ins."  
 5139: "Aluminum w/ Thrml Break - Double glass with no low e - R30 Ins."  
 5140: "Aluminum w/ Thrml Break - Triple or low e glass - No Ins."  
 5141: "Aluminum w/ Thrml Break - Triple or low e glass - R4 Ins."  
 5142: "Aluminum w/ Thrml Break - Triple or low e glass - R7 Ins."  
 5143: "Aluminum w/ Thrml Break - Triple or low e glass - R10 Ins."  
 5144: "Aluminum w/ Thrml Break - Triple or low e glass - R15 Ins."  
 5145: "Aluminum w/ Thrml Break - Triple or low e glass - R20 Ins."  
 5146: "Aluminum w/ Thrml Break - Triple or low e glass - R25 Ins."  
 5147: "Aluminum w/ Thrml Break - Triple or low e glass - R30 Ins."  
 5148: "Continuous Ins. - Single glass pane. stone. or metal pane - No Ins."  
 5149: "Continuous Ins. - Single glass pane. stone. or metal pane - R4 Ins."  
 5150: "Continuous Ins. - Single glass pane. stone. or metal pane - R7 Ins."  
 5151: "Continuous Ins. - Single glass pane. stone. or metal pane - R10 Ins."  
 5152: "Continuous Ins. - Single glass pane. stone. or metal pane - R15 Ins."  
 5153: "Continuous Ins. - Single glass pane. stone. or metal pane - R20 Ins."  
 5154: "Continuous Ins. - Single glass pane. stone. or metal pane - R25 Ins."  
 5155: "Continuous Ins. - Single glass pane. stone. or metal pane - R30 Ins."  
 5156: "Continuous Ins. - Double glass with no low e coatings - No Ins."  
 5157: "Continuous Ins. - Double glass with no low e coatings - R4 Ins."  
 5158: "Continuous Ins. - Double glass with no low e coatings - R7 Ins."

New Options

5159: "Continuous Ins. - Double glass with no low e coatings - R10 Ins." New Options  
 5160: "Continuous Ins. - Double glass with no low e coatings - R15 Ins."  
 5161: "Continuous Ins. - Double glass with no low e coatings - R20 Ins."  
 5162: "Continuous Ins. - Double glass with no low e coatings - R25 Ins."  
 5163: "Continuous Ins. - Double glass with no low e coatings - R30 Ins."  
 5164: "Continuous Ins. - Triple or low e glass - No Ins."  
 5165: "Continuous Ins. - Triple or low e glass - R4 Ins."  
 5166: "Continuous Ins. - Triple or low e glass - R7 Ins."  
 5167: "Continuous Ins. - Triple or low e glass - R10 Ins."  
 5168: "Continuous Ins. - Triple or low e glass - R15 Ins."  
 5169: "Continuous Ins. - Triple or low e glass - R20 Ins."  
 5170: "Continuous Ins. - Triple or low e glass - R25 Ins."  
 5171: "Continuous Ins. - Triple or low e glass - R30 Ins."  
 5172: "Structural Glazing - Single glass pane. stone. or metal pane - No Ins."  
 5173: "Structural Glazing - Single glass pane. stone. or metal pane - R4 Ins."  
 5174: "Structural Glazing - Single glass pane. stone. or metal pane - R7 Ins."  
 5175: "Structural Glazing - Single glass pane. stone. or metal pane - R10 Ins."  
 5176: "Structural Glazing - Single glass pane. stone. or metal pane - R15 Ins."  
 5177: "Structural Glazing - Single glass pane. stone. or metal pane - R20 Ins."  
 5178: "Structural Glazing - Single glass pane. stone. or metal pane - R25 Ins."  
 5179: "Structural Glazing - Single glass pane. stone. or metal pane - R30 Ins."  
 5180: "Structural Glazing - Double glass with no low e coatings - No Ins."  
 5181: "Structural Glazing - Double glass with no low e coatings - R4 Ins."  
 5182: "Structural Glazing - Double glass with no low e coatings - R7 Ins."  
 5183: "Structural Glazing - Double glass with no low e coatings - R10 Ins."  
 5184: "Structural Glazing - Double glass with no low e coatings - R15 Ins."  
 5185: "Structural Glazing - Double glass with no low e coatings - R20 Ins."  
 5186: "Structural Glazing - Double glass with no low e coatings - R25 Ins."  
 5187: "Structural Glazing - Double glass with no low e coatings - R30 Ins."  
 5188: "Structural Glazing - Triple or low e glass - No Ins."  
 5189: "Structural Glazing - Triple or low e glass - R4 Ins."  
 5190: "Structural Glazing - Triple or low e glass - R7 Ins."  
 5191: "Structural Glazing - Triple or low e glass - R10 Ins."  
 5192: "Structural Glazing - Triple or low e glass - R15 Ins."  
 5193: "Structural Glazing - Triple or low e glass - R20 Ins."  
 5194: "Structural Glazing - Triple or low e glass - R25 Ins."  
 5195: "Structural Glazing - Triple or low e glass - R30 Ins."

PVArray	PhotovoltaicArray	Children: PolyLp	New Object Type
<b>ADDED</b>			
SpecMthd	SpecificationMethod default: -1 1: "Simplified" 2: "Detailed"	Enumeration	- Defaulted input
DCSysSize	DirectCurrentSystemSize	Float	Units: kW - Defaulted input
ModuleType	ModuleType When: PVArray:SpecMthd = "Simplified" default: 1 1: "Standard" 2: "Premium" else:	Enumeration	- Defaulted input

	default: 1 1: "Standard" 2: "Premium" 3: "Thin Film"	Integer	-	Defaulted input	
CalFlexibleInstall	CaliforniaFlexibleInstall	Enumeration	-	Defaulted input	
GeomSpecMthd	GeometrySpecificationMethod				
	When: Proj:HavePVGeomObj = 0				
	default: 0				
	0: "azimuth and tilt"				
	else:				
	default: 0				
	0: "azimuth and tilt"				
	1: "reference PVArrayGeom object"				
PVArrayGeomRef	PhotovoltaicArrayGeometryReference	ObjectRef	-	Optional input	
	PVArrayGeom				
LctnSpecMthd	LocationSpecificationMethod	Enumeration	-	Defaulted input	
	default: -1				
	1: "- not specified -"				
	2: "X,Y,Z and height, width"				
RefX	ReferenceX	Float	Units: ft	- Optional input	
RefY	ReferenceY	Float	Units: ft	- Optional input	
RefZ	ReferenceZ	Float	Units: ft	- Optional input	
Hgt	Height	Float	Units: ft	- Optional input	Value >= 0.1
Wd	Width	Float	Units: ft	- Optional input	Value >= 0.1
Az	Azimuth	Float	Units: deg	- Defaulted	90 <= Value <= 300
TiltInp	TiltInput	Enumeration		- Defaulted input	
	default: -1				
	1: "deg"				
	2: "pitch"				
TiltPitch	TiltPitch	Float	Units: x in 12	- Optional input	Value >= 0
TiltAngle	TiltAngle	Float	Units: deg	- Optional	0 <= Value <= 90
ArrayType	ArrayType	Enumeration		- Defaulted input	
	default: -1				
	1: "Fixed (open rack)"				
	2: "Fixed (roof mount)"				
InverterEff	InverterEfficiency	Float	Units: %	- Optional input	

<b>Batt</b>	<b>Battery</b>				<b>New Object Type</b>
<b>ADDED</b>					
MaxCap	MaximumCapacity	Float	Units: kWh	- Defaulted input	Value >= 5
Ctrl	Control	Enumeration		- Defaulted input	
	default: -1				
	1: "Basic"				
	2: "Time of Use"				
	3: "Advanced DR Control"				
ChrgEff	ChargeEfficiency	Float	Units: frac	- Defaulted input	
DschrgEff	DischargeEfficiency	Float	Units: frac	- Defaulted input	



- 237: "Museum Area (Exhibition/Display)"
- 238: "Museum Area (Restoration Room)"
- 239: "Office Area (<250 square feet)"
- 240: "Office Area (>250 square feet)"
- 241: "Office Area (Open plan office)"
- 242: "Parking Garage Area (Daylight Adaptation Zones)"
- 243: "Parking Garage Area (Dedicated Ramps)"
- 244: "Parking Garage Area (Parking Zone)"
- 245: "Pharmacy Area"
- 246: "Religious Worship Area"
- 247: "Restrooms"
- 248: "Retail Sales Area (Fitting Room)"
- 249: "Retail Sales Area (Grocery Sales)"
- 250: "Retail Sales Area (Retail Merchandise Sales)"
- 251: "Scientific Laboratory Area"
- 252: "Sports Arena - Playing Area (> 5,000 Spectators)"
- 253: "Sports Arena - Playing Area (2,000 - 5,000 Spectators)"
- 254: "Sports Arena - Playing Area (< 2,000 Spectators)"
- 255: "Sports Arena - Playing Area (Recreational)"
- 256: "Stairwell"
- 257: "Theater Area (Motion Picture)"
- 258: "Theater Area (Performance)"
- 259: "Transportation Function (Baggage Area)"
- 260: "Transportation Function (Ticketing Area)"
- 261: "Unleased Tenant Area"
- 262: "Unoccupied-Exclude from Gross Floor Area"
- 263: "Unoccupied-Include in Gross Floor Area"
- 264: "Videoconferencing Studio"
- 269: "Aging Eye/Low-vision (Corridor Area)"
- 270: "Aging Eye/Low-vision (Dining)"
- 271: "Aging Eye/Low-vision (Lounge/Waiting Area)"
- 272: "Aging Eye/Low-vision (Main Entry Lobby)"
- 273: "Aging Eye/Low-vision (Multipurpose Room)"
- 274: "Aging Eye/Low-vision (Religious Worship Area)"
- 275: "Aging Eye/Low-vision (Restroom)"
- 276: "Aging Eye/Low-vision (Stairwell)"
- 201: "All other"

New Options

VentSpFunc

- VentilationSpaceFunction Enumeration - Defaulted input
- When: SpcFuncDefaults:SpcFunc = "All other" New Options
  - default: 58
  - 51: "General - Unoccupied"
  - 58: "Misc - All others"
- When: SpcFuncDefaults:SpcFunc = "Audience Seating Area"
  - default: 1
  - 1: "Assembly - Auditorium seating area"
  - 2: "Assembly - Courtrooms"
  - 3: "Assembly - Legislative chambers"
  - 25: "Exhaust - Arenas"
  - 58: "Misc - All others"
  - 85: "Sports/Entertainment - Bowling alley (seating)"
  - 92: "Sports/Entertainment - Spectator areas"
- When: SpcFuncDefaults:SpcFunc = "Auditorium Area"
  - default: 1
  - 1: "Assembly - Auditorium seating area"

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                2: "Assembly - Courtrooms"
                3: "Assembly - Legislative chambers"
                25: "Exhaust - Arenas"
                58: "Misc - All others"
When: SpcFuncDefaults:SpcFunc = "Auto Repair / Maintenance Area"
default: 26
                26: "Exhaust - Auto repair rooms"
When: SpcFuncDefaults:SpcFunc = "Beauty Salon Area"
default: 79
                78: "Retail - Barbershop"
                79: "Retail - Beauty and nail salons"
When: SpcFuncDefaults:SpcFunc = "Civic Meeting Place Area"
default: 3
                1: "Assembly - Auditorium seating area"
                2: "Assembly - Courtrooms"
                3: "Assembly - Legislative chambers"
                48: "General - Conference/meeting"
                58: "Misc - All others"
When: SpcFuncDefaults:SpcFunc = "Classroom, Lecture, Training, Vocational Areas"
default: 10
                9: "Education - Art classroom"
                10: "Education - Classrooms (ages 9-18)"
                11: "Education - Classrooms (ages 5-8)"
                12: "Education - Computer lab"
                13: "Education - Daycare (through age 4)"
                14: "Education - Daycare sickroom"
                15: "Education - Lecture hall (fixed seats)"
                16: "Education - Lecture/postsecondary classroom"
                17: "Education - Media center"
                19: "Education - Multiuse assembly"
                20: "Education - Music/theater/dance"
                23: "Education - Wood shop"
                26: "Exhaust - Auto repair rooms"
                41: "Exhaust - Woodwork shop/classrooms"
                58: "Misc - All others"
                78: "Retail - Barbershop"
                79: "Retail - Beauty and nail salons"
When: SpcFuncDefaults:SpcFunc = "Commercial/Industrial Storage (Refrigerated)"
default: 62
                35: "Exhaust - Refrigerating machinery rooms"
                58: "Misc - All others"
                62: "Misc - Freezer and refrigerated spaces (<50F)"
When: SpcFuncDefaults:SpcFunc = "Commercial/Industrial Storage (Shipping & Handling)"
default: 66
                66: "Misc - Shipping/receiving"
When: SpcFuncDefaults:SpcFunc = "Commercial/Industrial Storage (Warehouse)"
default: 70
                38: "Exhaust - Storage rooms, chemical"
                50: "General - Occupiable storage rooms for liquids or gels"
                58: "Misc - All others"
                70: "Misc - Warehouses"
                73: "Office - Occupiable storage rooms for dry materials"
When: SpcFuncDefaults:SpcFunc = "Computer Room"
default: 61

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New Options



12: "Education - Computer lab"  
17: "Education - Media center"  
58: "Misc - All others"  
61: "Misc - Computer (not printing)"  
76: "Office - Telephone/data entry"

When: SpcFuncDefaults:SpcFunc = "Concourse and Atria Area" New Options  
default: 81  
5: "Assembly - Lobbies"  
49: "General - Corridors"  
56: "Lodging - Lobbies/pre-function"  
58: "Misc - All others"  
69: "Misc - Transportation waiting"  
72: "Office - Main entry lobbies"  
81: "Retail - Mall common areas"

When: SpcFuncDefaults:SpcFunc = "Convention, Conference, Multipurpose and Meeting Area"  
default: 48  
2: "Assembly - Courtrooms"  
3: "Assembly - Legislative chambers"  
8: "Assembly - Places of religious worship"  
15: "Education - Lecture hall (fixed seats)"  
19: "Education - Multiuse assembly"  
48: "General - Conference/meeting"  
57: "Lodging - Multipurpose assembly"  
58: "Misc - All others"

When: SpcFuncDefaults:SpcFunc = "Copy Room"  
default: 28  
28: "Exhaust - Copy, printing rooms"

When: SpcFuncDefaults:SpcFunc = "Corridor Area"  
default: 49  
49: "General - Corridors"  
56: "Lodging - Lobbies/pre-function"  
69: "Misc - Transportation waiting"  
77: "Residential - Common corridors"  
81: "Retail - Mall common areas"

When: SpcFuncDefaults:SpcFunc = "Dining Area (Bar/Lounge and Fine Dining)"  
default: 45  
42: "Food Service - Bars, cocktail lounges"  
45: "Food Service - Restaurant dining rooms"

When: SpcFuncDefaults:SpcFunc = "Dining Area (Cafeteria/Fast Food)"  
default: 43  
43: "Food Service - Cafeteria/fast-food dining"

When: SpcFuncDefaults:SpcFunc = "Dining Area (Family and Leisure)"  
default: 43  
42: "Food Service - Bars, cocktail lounges"  
43: "Food Service - Cafeteria/fast-food dining"  
45: "Food Service - Restaurant dining rooms"

When: SpcFuncDefaults:SpcFunc = "Electrical, Mechanical, Telephone Rooms"  
default: 68  
35: "Exhaust - Refrigerating machinery rooms"  
51: "General - Unoccupied"  
58: "Misc - All others"  
68: "Misc - Telephone closets"

When: SpcFuncDefaults:SpcFunc = "Exercise/Fitness Center and Gymnasium Areas"  
default: 89

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19: "Education - Multiuse assembly"
20: "Education - Music/theater/dance"
86: "Sports/Entertainment - Disco/dance floors"
89: "Sports/Entertainment - Gym, sports arena (play area)"
90: "Sports/Entertainment - Health club/aerobics room"
91: "Sports/Entertainment - Health club/weight rooms"
94: "Sports/Entertainment - Swimming (deck)"
95: "Sports/Entertainment - Swimming (pool)"
When: SpcFuncDefaults:SpcFunc = "Financial Transaction Area"
default: 60
59: "Misc - Bank vaults/safe deposit"
60: "Misc - Banks or bank lobbies"
74: "Office - Office space"
When: SpcFuncDefaults:SpcFunc = "General/Commercial & Industrial Work Area (High Bay)"
default: 63
28: "Exhaust - Copy, printing rooms"
29: "Exhaust - Darkrooms"
33: "Exhaust - Paint spray booths"
41: "Exhaust - Woodwork shop/classrooms"
58: "Misc - All others"
63: "Misc - General manufacturing (excludes heavy industrial and process using chemicals)"
67: "Misc - Sorting, packing, light assembly"
When: SpcFuncDefaults:SpcFunc = "General/Commercial & Industrial Work Area (Low Bay)"
default: 63
28: "Exhaust - Copy, printing rooms"
29: "Exhaust - Darkrooms"
30: "Exhaust - Janitor closets, trash rooms, recycling"
33: "Exhaust - Paint spray booths"
41: "Exhaust - Woodwork shop/classrooms"
55: "Lodging - Laundry rooms, central"
58: "Misc - All others"
63: "Misc - General manufacturing (excludes heavy industrial and process using chemicals)"
67: "Misc - Sorting, packing, light assembly"
When: SpcFuncDefaults:SpcFunc = "General/Commercial & Industrial Work Area (Precision)"
default: 63
28: "Exhaust - Copy, printing rooms"
29: "Exhaust - Darkrooms"
33: "Exhaust - Paint spray booths"
41: "Exhaust - Woodwork shop/classrooms"
58: "Misc - All others"
63: "Misc - General manufacturing (excludes heavy industrial and process using chemicals)"
67: "Misc - Sorting, packing, light assembly"
When: SpcFuncDefaults:SpcFunc = "Healthcare Facility and Hospitals (Exam/Treatment Room)"
default: 58
58: "Misc - All others"
96: "NA"
When: SpcFuncDefaults:SpcFunc = "High-Rise Residential Living Spaces"
default: 96
96: "NA"
When: SpcFuncDefaults:SpcFunc = "Hotel Function Area"
default: 57
48: "General - Conference/meeting"
56: "Lodging - Lobbies/pre-function"
57: "Lodging - Multipurpose assembly"

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New Options

87: "Sports/Entertainment - Gambling casinos"  
 When: SpcFuncDefaults:SpcFunc = "Hotel/Motel Guest Room" New Options  
 default: 53  
 52: "Lodging - Barracks sleeping areas"  
 53: "Lodging - Bedroom/living room"  
 When: SpcFuncDefaults:SpcFunc = "Kitchen/Food Preparation Area"  
 default: 44  
 44: "Food Service - Kitchen (cooking)"  
 When: SpcFuncDefaults:SpcFunc = "Kitchenette or Residential Kitchen"  
 default: 31  
 31: "Exhaust - Kitchenettes"  
 When: SpcFuncDefaults:SpcFunc = "Laundry Area"  
 default: 55  
 37: "Exhaust - Soiled laundry storage rooms"  
 54: "Lodging - Laundry rooms within dwelling units"  
 55: "Lodging - Laundry rooms, central"  
 80: "Retail - Coin-operated laundries"  
 When: SpcFuncDefaults:SpcFunc = "Library (Reading Area)"  
 default: 4  
 4: "Assembly - Libraries (reading rooms and stack areas)"  
 When: SpcFuncDefaults:SpcFunc = "Library (Stacks Area)"  
 default: 4  
 4: "Assembly - Libraries (reading rooms and stack areas)"  
 When: SpcFuncDefaults:SpcFunc = "Locker Room"  
 default: 32  
 24: "Exhaust - All other locker rooms"  
 32: "Exhaust - Locker rooms for athletic or industrial facilities"  
 36: "Exhaust - Shower rooms"  
 When: SpcFuncDefaults:SpcFunc = "Lounge, Breakroom, or Waiting Area"  
 default: 46  
 46: "General - Break rooms"  
 47: "General - Coffee Stations"  
 58: "Misc - All others"  
 69: "Misc - Transportation waiting"  
 71: "Office - Breakrooms"  
 75: "Office - Reception areas"  
 When: SpcFuncDefaults:SpcFunc = "Main Entry Lobby"  
 default: 72  
 5: "Assembly - Lobbies"  
 56: "Lodging - Lobbies/pre-function"  
 60: "Misc - Banks or bank lobbies"  
 72: "Office - Main entry lobbies"  
 When: SpcFuncDefaults:SpcFunc = "Museum Area (Exhibition/Display)"  
 default: 7  
 6: "Assembly - Museums (childrens)"  
 7: "Assembly - Museums/galleries"  
 When: SpcFuncDefaults:SpcFunc = "Museum Area (Restoration Room)"  
 default: 63  
 9: "Education - Art classroom"  
 23: "Education - Wood shop"  
 28: "Exhaust - Copy, printing rooms"  
 29: "Exhaust - Darkrooms"  
 41: "Exhaust - Woodwork shop/classrooms"  
 50: "General - Occupiable storage rooms for liquids or gels"

```

58: "Misc - All others"
63: "Misc - General manufacturing (excludes heavy industrial and process using chemicals)"
65: "Misc - Photo studios"
67: "Misc - Sorting, packing, light assembly"
When: SpcFuncDefaults:SpcFunc = "Office Area (<250 square feet)"
default: 74
74: "Office - Office space"
When: SpcFuncDefaults:SpcFunc = "Office Area (>250 square feet)"
default: 74
74: "Office - Office space"
When: SpcFuncDefaults:SpcFunc = "Office Area (Open plan office)"
default: 74
74: "Office - Office space"
When: SpcFuncDefaults:SpcFunc = "Parking Garage Area (Daylight Adaptation Zones)"
default: 34
34: "Exhaust - Parking garages"
When: SpcFuncDefaults:SpcFunc = "Parking Garage Area (Dedicated Ramps)"
default: 34
34: "Exhaust - Parking garages"
When: SpcFuncDefaults:SpcFunc = "Parking Garage Area (Parking Zone)"
default: 34
34: "Exhaust - Parking garages"
When: SpcFuncDefaults:SpcFunc = "Pharmacy Area"
default: 64
64: "Misc - Pharmacy (preparation area)"
When: SpcFuncDefaults:SpcFunc = "Religious Worship Area"
default: 8
8: "Assembly - Places of religious worship"
When: SpcFuncDefaults:SpcFunc = "Restrooms"
default: 40
36: "Exhaust - Shower rooms"
39: "Exhaust - Toilets, private"
40: "Exhaust - Toilets, public"
When: SpcFuncDefaults:SpcFunc = "Retail Sales Area (Fitting Room)"
default: 83
83: "Retail - Sales"
58: "Misc - All others"
When: SpcFuncDefaults:SpcFunc = "Retail Sales Area (Grocery Sales)"
default: 84
84: "Retail - Supermarket"
When: SpcFuncDefaults:SpcFunc = "Retail Sales Area (Retail Merchandise Sales)"
default: 83
83: "Retail - Sales"
82: "Retail - Pet shops (animal areas)"
When: SpcFuncDefaults:SpcFunc = "Scientific Laboratory Area"
default: 22
21: "Education - Science laboratories"
22: "Education - University/college laboratories"
63: "Misc - General manufacturing (excludes heavy industrial and process using chemicals)"
64: "Misc - Pharmacy (preparation area)"
58: "Misc - All others"
When: SpcFuncDefaults:SpcFunc = "Sports Arena - Playing Area (> 5,000 Spectators)"
default: 89
25: "Exhaust - Arenas"

```

New Options

```

      89: "Sports/Entertainment - Gym, sports arena (play area)"
      94: "Sports/Entertainment - Swimming (deck)"
      95: "Sports/Entertainment - Swimming (pool)"
When: SpcFuncDefaults:SpcFunc = "Sports Arena - Playing Area (2,000 - 5,000 Spectators)" New Options
default: 89
      25: "Exhaust - Arenas"
      89: "Sports/Entertainment - Gym, sports arena (play area)"
      94: "Sports/Entertainment - Swimming (deck)"
      95: "Sports/Entertainment - Swimming (pool)"
When: SpcFuncDefaults:SpcFunc = "Sports Arena - Playing Area (< 2,000 Spectators)"
default: 89
      25: "Exhaust - Arenas"
      89: "Sports/Entertainment - Gym, sports arena (play area)"
      94: "Sports/Entertainment - Swimming (deck)"
      95: "Sports/Entertainment - Swimming (pool)"
When: SpcFuncDefaults:SpcFunc = "Sports Arena - Playing Area (Recreational)"
default: 89
      89: "Sports/Entertainment - Gym, sports arena (play area)"
      90: "Sports/Entertainment - Health club/aerobics room"
      91: "Sports/Entertainment - Health club/weight rooms"
      94: "Sports/Entertainment - Swimming (deck)"
      95: "Sports/Entertainment - Swimming (pool)"
When: SpcFuncDefaults:SpcFunc = "Stairwell"
default: 49
      49: "General - Corridors"
      51: "General - Unoccupied"
      77: "Residential - Common corridors"
When: SpcFuncDefaults:SpcFunc = "Theater Area (Motion Picture)"
default: 1
      1: "Assembly - Auditorium seating area"
When: SpcFuncDefaults:SpcFunc = "Theater Area (Performance)"
default: 93
      20: "Education - Music/theater/dance"
      58: "Misc - All others"
      93: "Sports/Entertainment - Stages, studios"
When: SpcFuncDefaults:SpcFunc = "Transportation Function (Baggage Area)"
default: 69
      67: "Misc - Sorting, packing, light assembly"
      69: "Misc - Transportation waiting"
When: SpcFuncDefaults:SpcFunc = "Transportation Function (Ticketing Area)"
default: 69
      5: "Assembly - Lobbies"
      69: "Misc - Transportation waiting"
When: SpcFuncDefaults:SpcFunc = "Unleased Tenant Area"
default: 74
      83: "Retail - Sales"
      43: "Food Service - Cafeteria/fast-food dining"
      45: "Food Service - Restaurant dining rooms"
      58: "Misc - All others"
      70: "Misc - Warehouses"
      74: "Office - Office space"
When: SpcFuncDefaults:SpcFunc = "Unoccupied-Exclude from Gross Floor Area"
default: 96
      96: "NA"

```

```

When: SpcFuncDefaults:SpcFunc = "Unoccupied-Include in Gross Floor Area" New Options
      default: 96
          96: "NA"
When: SpcFuncDefaults:SpcFunc = "Videoconferencing Studio"
      default: 48
          48: "General - Conference/meeting"
else:
      default: 96
          96: "NA"
    
```

**Spc**                      **Space**

ADDED

OccNumSim	OccupantNumberSimulated	Float	Units: people	- Defaulted input
IsHlthCare	IsHealthCare	Integer		- Optional input
VentFlow	VentilationFlow	Float	Units: cfm	- Defaulted input
PropMinVentFlow	ProposedMinimumVentilationFlow	Float	Units: cfm	- Defaulted input
PropMinVentACH	ProposedMinimumVentilationAirChangesPerHour	Float	Units: changes/hr	- Defaulted input
CodeOtherMinVentFlow	CodeOtherMinimumVentilationFlow	Float	Units: cfm	- Defaulted input
OccSensorCtrl	OccupancySensorControl	Integer		- CondRequired input
ExhContPerFixture	ExhaustContinuousPerFixture	Float	Units: cfm	- Optional input
ExhNumFixtures	ExhaustNumberFixtures	Integer		- Optional input
ExhFlow	ExhaustFlow	Float	Units: cfm	- Defaulted input
PropMinExhFlow	ProposedMinimumExhaustFlow	Float	Units: cfm	- Defaulted input
PropMinExhACH	ProposedMinimumExhaustAirChangesPerHour	Float	Units: changes/hr	- Defaulted Value >= 0
LabFumeHoodLen	LaboratoryFumeHoodLength	Float	Units: ft	- Optional Value >= 0
LabFumeHoodVertSashExhFlow	LaboratoryFumeHoodVerticalSashExhaustFlow	Float	Units: cfm	- Optional Value >= 0
LabFumeHoodVertAutoSashCtrlFrac	LaboratoryFumeHoodVerticalAutomaticSashControlFraction	Float		- Optional 0 <= Value <= 1
ResSpcDHWFeaturesRef	ResidentialSpaceDHWFeaturesReference	ObjectRef	#Vals: 6	- Optional input
	ResSpcDHWFeatures			

CHANGED

```

SpcFunc                      SpaceFunction                      Enumeration      -      Compulsory input
When: Spc:CondgType = "Plenum"
      default: 262
          262: "Unoccupied-Exclude from Gross Floor Area"
else:
      default: 0
          0: "- specify -"
          202: "Audience Seating Area" New Options
          203: "Auditorium Area"
          204: "Auto Repair / Maintenance Area"
          205: "Beauty Salon Area"
          206: "Civic Meeting Place Area"
          207: "Classroom, Lecture, Training, Vocational Areas"
          208: "Commercial/Industrial Storage (Refrigerated)"
          209: "Commercial/Industrial Storage (Shipping & Handling)"
          210: "Commercial/Industrial Storage (Warehouse)"
          211: "Computer Room"
          212: "Concourse and Atria Area"
          213: "Convention, Conference, Multipurpose and Meeting Area"
          214: "Copy Room"
    
```

215: "Corridor Area"  
216: "Dining Area (Bar/Lounge and Fine Dining)"  
217: "Dining Area (Cafeteria/Fast Food)"  
218: "Dining Area (Family and Leisure)"  
219: "Electrical, Mechanical, Telephone Rooms"  
220: "Exercise/Fitness Center and Gymnasium Areas"  
221: "Financial Transaction Area"  
222: "General/Commercial & Industrial Work Area (High Bay)"  
223: "General/Commercial & Industrial Work Area (Low Bay)"  
224: "General/Commercial & Industrial Work Area (Precision)"  
225: "Healthcare Facility and Hospitals (Exam/Treatment Room)"  
277: "Healthcare Facility and Hospitals (Imaging Room)"  
278: "Healthcare Facility and Hospitals (Medical Supply Room)"  
279: "Healthcare Facility and Hospitals (Nursery)"  
280: "Healthcare Facility and Hospitals (Nurse's Station)"  
281: "Healthcare Facility and Hospitals (Operating Room)"  
282: "Healthcare Facility and Hospitals (Patient Room)"  
283: "Healthcare Facility and Hospitals (Physical Therapy Room)"  
284: "Healthcare Facility and Hospitals (Recovery Room)"  
226: "High-Rise Residential Living Spaces"  
227: "Hotel Function Area"  
228: "Hotel/Motel Guest Room"  
229: "Kitchen/Food Preparation Area"  
230: "Kitchenette or Residential Kitchen"  
231: "Laundry Area"  
232: "Library (Reading Area)"  
233: "Library (Stacks Area)"  
234: "Locker Room"  
235: "Lounge, Breakroom, or Waiting Area"  
236: "Main Entry Lobby"  
237: "Museum Area (Exhibition/Display)"  
238: "Museum Area (Restoration Room)"  
239: "Office Area (<250 square feet)"  
240: "Office Area (>250 square feet)"  
241: "Office Area (Open plan office)"  
242: "Parking Garage Area (Daylight Adaptation Zones)"  
243: "Parking Garage Area (Dedicated Ramps)"  
244: "Parking Garage Area (Parking Zone)"  
245: "Pharmacy Area"  
246: "Religious Worship Area"  
247: "Restrooms"  
248: "Retail Sales Area (Fitting Room)"  
249: "Retail Sales Area (Grocery Sales)"  
250: "Retail Sales Area (Retail Merchandise Sales)"  
251: "Scientific Laboratory Area"  
252: "Sports Arena - Playing Area (> 5,000 Spectators)"  
253: "Sports Arena - Playing Area (2,000 - 5,000 Spectators)"  
254: "Sports Arena - Playing Area (< 2,000 Spectators)"  
255: "Sports Arena - Playing Area (Recreational)"  
256: "Stairwell"  
257: "Theater Area (Motion Picture)"  
258: "Theater Area (Performance)"  
259: "Transportation Function (Baggage Area)"  
260: "Transportation Function (Ticketing Area)"

New Options

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261: "Unleased Tenant Area"
262: "Unoccupied-Exclude from Gross Floor Area"
263: "Unoccupied-Include in Gross Floor Area"
264: "Videoconferencing Studio"
269: "Aging Eye/Low-vision (Corridor Area)"
270: "Aging Eye/Low-vision (Dining)"
271: "Aging Eye/Low-vision (Lounge/Waiting Area)"
272: "Aging Eye/Low-vision (Main Entry Lobby)"
273: "Aging Eye/Low-vision (Multipurpose Room)"
274: "Aging Eye/Low-vision (Religious Worship Area)"
275: "Aging Eye/Low-vision (Restroom)"
276: "Aging Eye/Low-vision (Stairwell)"
201: "All other"

VentSpcFunc      VentilationSpaceFunction      Enumeration      -      Defaulted input
When: Spc:SpcFunc = "All other"
    default: 58
    51: "General - Unoccupied"
    58: "Misc - All others"
    27: "Exhaust - Cells with toilet"
    88: "Sports/Entertainment - Game arcades"
When: Spc:SpcFunc = "Audience Seating Area"
    default: 1
    1: "Assembly - Auditorium seating area"
    2: "Assembly - Courtrooms"
    3: "Assembly - Legislative chambers"
    25: "Exhaust - Arenas"
    58: "Misc - All others"
    85: "Sports/Entertainment - Bowling alley (seating)"
    92: "Sports/Entertainment - Spectator areas"
When: Spc:SpcFunc = "Auditorium Area"
    default: 1
    1: "Assembly - Auditorium seating area"
    2: "Assembly - Courtrooms"
    3: "Assembly - Legislative chambers"
    25: "Exhaust - Arenas"
    58: "Misc - All others"
When: Spc:SpcFunc = "Auto Repair / Maintenance Area"
    default: 26
    26: "Exhaust - Auto repair rooms"
When: Spc:SpcFunc = "Beauty Salon Area"
    default: 79
    78: "Retail - Barbershop"
    79: "Retail - Beauty and nail salons"
When: Spc:SpcFunc = "Civic Meeting Place Area"
    default: 3
    1: "Assembly - Auditorium seating area"
    2: "Assembly - Courtrooms"
    3: "Assembly - Legislative chambers"
    48: "General - Conference/meeting"
    58: "Misc - All others"
When: Spc:SpcFunc = "Classroom, Lecture, Training, Vocational Areas"
    default: 10
    9: "Education - Art classroom"
    10: "Education - Classrooms (ages 9-18)"

```

New Options

New Options



New Options

```

11: "Education - Classrooms (ages 5-8)"
12: "Education - Computer lab"
13: "Education - Daycare (through age 4)"
14: "Education - Daycare sickroom"
15: "Education - Lecture hall (fixed seats)"
16: "Education - Lecture/postsecondary classroom"
17: "Education - Media center"
19: "Education - Multiuse assembly"
20: "Education - Music/theater/dance"
23: "Education - Wood shop"
18: "Education - Metal shop"
26: "Exhaust - Auto repair rooms"
41: "Exhaust - Woodwork shop/classrooms"
58: "Misc - All others"
78: "Retail - Barbershop"
79: "Retail - Beauty and nail salons"
When: Spc:SpcFunc = "Commercial/Industrial Storage (Refrigerated)"
default: 62
      35: "Exhaust - Refrigerating machinery rooms"
      58: "Misc - All others"
      62: "Misc - Freezer and refrigerated spaces (<50F)"
When: Spc:SpcFunc = "Commercial/Industrial Storage (Shipping & Handling)"
default: 66
      66: "Misc - Shipping/receiving"
When: Spc:SpcFunc = "Commercial/Industrial Storage (Warehouse)"
default: 70
      38: "Exhaust - Storage rooms, chemical"
      50: "General - Occupiable storage rooms for liquids or gels"
      58: "Misc - All others"
      70: "Misc - Warehouses"
      73: "Office - Occupiable storage rooms for dry materials"
When: Spc:SpcFunc = "Computer Room"
default: 61
      12: "Education - Computer lab"
      17: "Education - Media center"
      58: "Misc - All others"
      61: "Misc - Computer (not printing)"
      76: "Office - Telephone/data entry"
When: Spc:SpcFunc = "Concourse and Atria Area"
default: 81
      5: "Assembly - Lobbies"
      49: "General - Corridors"
      56: "Lodging - Lobbies/pre-function"
      58: "Misc - All others"
      69: "Misc - Transportation waiting"
      72: "Office - Main entry lobbies"
      81: "Retail - Mall common areas"
When: Spc:SpcFunc = "Convention, Conference, Multipurpose and Meeting Area"
default: 48
      2: "Assembly - Courtrooms"
      3: "Assembly - Legislative chambers"
      8: "Assembly - Places of religious worship"
      15: "Education - Lecture hall (fixed seats)"
      19: "Education - Multiuse assembly"

```

48: "General - Conference/meeting"  
 57: "Lodging - Multipurpose assembly"  
 58: "Misc - All others"

When: Spc:SpcFunc = "Copy Room" New Options  
 default: 28  
 28: "Exhaust - Copy, printing rooms"

When: Spc:SpcFunc = "Corridor Area"  
 default: 49  
 49: "General - Corridors"  
 56: "Lodging - Lobbies/pre-function"  
 69: "Misc - Transportation waiting"  
 77: "Residential - Common corridors"  
 81: "Retail - Mall common areas"

When: Spc:SpcFunc = "Dining Area (Bar/Lounge and Fine Dining)"  
 default: 45  
 42: "Food Service - Bars, cocktail lounges"  
 45: "Food Service - Restaurant dining rooms"

When: Spc:SpcFunc = "Dining Area (Cafeteria/Fast Food)"  
 default: 43  
 43: "Food Service - Cafeteria/fast-food dining"

When: Spc:SpcFunc = "Dining Area (Family and Leisure)"  
 default: 43  
 42: "Food Service - Bars, cocktail lounges"  
 43: "Food Service - Cafeteria/fast-food dining"  
 45: "Food Service - Restaurant dining rooms"

When: Spc:SpcFunc = "Electrical, Mechanical, Telephone Rooms"  
 default: 68  
 35: "Exhaust - Refrigerating machinery rooms"  
 51: "General - Unoccupied"  
 58: "Misc - All others"  
 68: "Misc - Telephone closets"

When: Spc:SpcFunc = "Exercise/Fitness Center and Gymnasium Areas"  
 default: 89  
 19: "Education - Multiuse assembly"  
 20: "Education - Music/theater/dance"  
 86: "Sports/Entertainment - Disco/dance floors"  
 89: "Sports/Entertainment - Gym, sports arena (play area)"  
 90: "Sports/Entertainment - Health club/aerobics room"  
 91: "Sports/Entertainment - Health club/weight rooms"  
 94: "Sports/Entertainment - Swimming (deck)"  
 95: "Sports/Entertainment - Swimming (pool)"

When: Spc:SpcFunc = "Financial Transaction Area"  
 default: 60  
 59: "Misc - Bank vaults/safe deposit"  
 60: "Misc - Banks or bank lobbies"  
 74: "Office - Office space"

When: Spc:SpcFunc = "General/Commercial & Industrial Work Area (High Bay)"  
 default: 63  
 28: "Exhaust - Copy, printing rooms"  
 29: "Exhaust - Darkrooms"  
 33: "Exhaust - Paint spray booths"  
 41: "Exhaust - Woodwork shop/classrooms"  
 58: "Misc - All others"  
 63: "Misc - General manufacturing (excludes heavy industrial and process using chemicals)"

```

        67: "Misc - Sorting, packing, light assembly"
When: Spc:SpcFunc = "General/Commercial & Industrial Work Area (Low Bay)" New Options
default: 63
        28: "Exhaust - Copy, printing rooms"
        29: "Exhaust - Darkrooms"
        30: "Exhaust - Janitor closets, trash rooms, recycling"
        33: "Exhaust - Paint spray booths"
        41: "Exhaust - Woodwork shop/classrooms"
        55: "Lodging - Laundry rooms, central"
        58: "Misc - All others"
        63: "Misc - General manufacturing (excludes heavy industrial and process using chemicals)"
        67: "Misc - Sorting, packing, light assembly"
When: Spc:SpcFunc = "General/Commercial & Industrial Work Area (Precision)"
default: 63
        28: "Exhaust - Copy, printing rooms"
        29: "Exhaust - Darkrooms"
        33: "Exhaust - Paint spray booths"
        41: "Exhaust - Woodwork shop/classrooms"
        58: "Misc - All others"
        63: "Misc - General manufacturing (excludes heavy industrial and process using chemicals)"
        67: "Misc - Sorting, packing, light assembly"
When: Spc:SpcFunc = "Healthcare Facility and Hospitals (Exam/Treatment Room)"
default: 58
        58: "Misc - All others"
When: Spc:SpcFunc = "Healthcare Facility and Hospitals (Imaging Room)"
default: 58
        58: "Misc - All others"
When: Spc:SpcFunc = "Healthcare Facility and Hospitals (Medical Supply Room)"
default: 58
        58: "Misc - All others"
When: Spc:SpcFunc = "Healthcare Facility and Hospitals (Nursery)"
default: 58
        58: "Misc - All others"
When: Spc:SpcFunc = "Healthcare Facility and Hospitals (Nurse's Station)"
default: 58
        58: "Misc - All others"
When: Spc:SpcFunc = "Healthcare Facility and Hospitals (Imaging Room)"
default: 58
        58: "Misc - All others"
When: Spc:SpcFunc = "Healthcare Facility and Hospitals (Operating Room)"
default: 58
        58: "Misc - All others"
When: Spc:SpcFunc = "Healthcare Facility and Hospitals (Patient Room)"
default: 58
        58: "Misc - All others"
When: Spc:SpcFunc = "Healthcare Facility and Hospitals (Physical Therapy Room)"
default: 58
        58: "Misc - All others"
When: Spc:SpcFunc = "Healthcare Facility and Hospitals (Recovery Room)"
default: 58
        58: "Misc - All others"
When: Spc:SpcFunc = "High-Rise Residential Living Spaces"
default: 96
        96: "NA"

```

When: Spc:SpcFunc = "Hotel Function Area" New Options  
 default: 57  
     48: "General - Conference/meeting"  
     56: "Lodging - Lobbies/pre-function"  
     57: "Lodging - Multipurpose assembly"  
     87: "Sports/Entertainment - Gambling casinos"

When: Spc:SpcFunc = "Hotel/Motel Guest Room"  
 default: 53  
     52: "Lodging - Barracks sleeping areas"  
     53: "Lodging - Bedroom/living room"

When: Spc:SpcFunc = "Kitchen/Food Preparation Area"  
 default: 44  
     44: "Food Service - Kitchen (cooking)"

When: Spc:SpcFunc = "Kitchenette or Residential Kitchen"  
 default: 31  
     31: "Exhaust - Kitchenettes"

When: Spc:SpcFunc = "Laundry Area"  
 default: 55  
     37: "Exhaust - Soiled laundry storage rooms"  
     54: "Lodging - Laundry rooms within dwelling units"  
     55: "Lodging - Laundry rooms, central"  
     80: "Retail - Coin-operated laundries"

When: Spc:SpcFunc = "Library (Reading Area)"  
 default: 4  
     4: "Assembly - Libraries (reading rooms and stack areas)"

When: Spc:SpcFunc = "Library (Stacks Area)"  
 default: 4  
     4: "Assembly - Libraries (reading rooms and stack areas)"

When: Spc:SpcFunc = "Locker Room"  
 default: 32  
     24: "Exhaust - All other locker rooms"  
     32: "Exhaust - Locker rooms for athletic or industrial facilities"  
     36: "Exhaust - Shower rooms"

When: Spc:SpcFunc = "Lounge, Breakroom, or Waiting Area"  
 default: 46  
     46: "General - Break rooms"  
     47: "General - Coffee Stations"  
     58: "Misc - All others"  
     69: "Misc - Transportation waiting"  
     71: "Office - Breakrooms"  
     75: "Office - Reception areas"

When: Spc:SpcFunc = "Main Entry Lobby"  
 default: 72  
     5: "Assembly - Lobbies"  
     56: "Lodging - Lobbies/pre-function"  
     60: "Misc - Banks or bank lobbies"  
     72: "Office - Main entry lobbies"

When: Spc:SpcFunc = "Museum Area (Exhibition/Display)"  
 default: 7  
     6: "Assembly - Museums (childrens)"  
     7: "Assembly - Museums/galleries"

When: Spc:SpcFunc = "Museum Area (Restoration Room)"  
 default: 63  
     9: "Education - Art classroom"

23: "Education - Wood shop"  
 28: "Exhaust - Copy, printing rooms" New Options  
 29: "Exhaust - Darkrooms"  
 41: "Exhaust - Woodwork shop/classrooms"  
 50: "General - Occupiable storage rooms for liquids or gels"  
 58: "Misc - All others"  
 63: "Misc - General manufacturing (excludes heavy industrial and process using chemicals)"  
 65: "Misc - Photo studios"  
 67: "Misc - Sorting, packing, light assembly"  
 When: Spc:SpcFunc = "Office Area (<250 square feet)"  
 default: 74  
 74: "Office - Office space"  
 When: Spc:SpcFunc = "Office Area (>250 square feet)"  
 default: 74  
 74: "Office - Office space"  
 When: Spc:SpcFunc = "Office Area (Open plan office)"  
 default: 74  
 74: "Office - Office space"  
 When: Spc:SpcFunc = "Parking Garage Area (Daylight Adaptation Zones)"  
 default: 34  
 34: "Exhaust - Parking garages"  
 When: Spc:SpcFunc = "Parking Garage Area (Dedicated Ramps)"  
 default: 34  
 34: "Exhaust - Parking garages"  
 When: Spc:SpcFunc = "Parking Garage Area (Parking Zone)"  
 default: 34  
 34: "Exhaust - Parking garages"  
 When: Spc:SpcFunc = "Pharmacy Area"  
 default: 64  
 64: "Misc - Pharmacy (preparation area)"  
 When: Spc:SpcFunc = "Religious Worship Area"  
 default: 8  
 8: "Assembly - Places of religious worship"  
 When: Spc:SpcFunc = "Restrooms"  
 default: 40  
 36: "Exhaust - Shower rooms"  
 39: "Exhaust - Toilets, private"  
 40: "Exhaust - Toilets, public"  
 When: Spc:SpcFunc = "Retail Sales Area (Fitting Room)"  
 default: 83  
 83: "Retail - Sales"  
 58: "Misc - All others"  
 When: Spc:SpcFunc = "Retail Sales Area (Grocery Sales)"  
 default: 84  
 84: "Retail - Supermarket"  
 When: Spc:SpcFunc = "Retail Sales Area (Retail Merchandise Sales)"  
 default: 83  
 83: "Retail - Sales"  
 82: "Retail - Pet shops (animal areas)"  
 When: Spc:SpcFunc = "Scientific Laboratory Area"  
 default: 22  
 21: "Education - Science laboratories"  
 22: "Education - University/college laboratories"  
 58: "Misc - All others"

63: "Misc - General manufacturing (excludes heavy industrial and process using chemicals)"  
64: "Misc - Pharmacy (preparation area)"

When: Spc:SpcFunc = "Sports Arena - Playing Area (> 5,000 Spectators)" New Options  
default: 89  
25: "Exhaust - Arenas"  
89: "Sports/Entertainment - Gym, sports arena (play area)"  
94: "Sports/Entertainment - Swimming (deck)"  
95: "Sports/Entertainment - Swimming (pool)"

When: Spc:SpcFunc = "Sports Arena - Playing Area (2,000 - 5,000 Spectators)"  
default: 89  
25: "Exhaust - Arenas"  
89: "Sports/Entertainment - Gym, sports arena (play area)"  
94: "Sports/Entertainment - Swimming (deck)"  
95: "Sports/Entertainment - Swimming (pool)"

When: Spc:SpcFunc = "Sports Arena - Playing Area (< 2,000 Spectators)"  
default: 89  
25: "Exhaust - Arenas"  
89: "Sports/Entertainment - Gym, sports arena (play area)"  
94: "Sports/Entertainment - Swimming (deck)"  
95: "Sports/Entertainment - Swimming (pool)"

When: Spc:SpcFunc = "Sports Arena - Playing Area (Recreational)"  
default: 89  
89: "Sports/Entertainment - Gym, sports arena (play area)"  
90: "Sports/Entertainment - Health club/aerobics room"  
91: "Sports/Entertainment - Health club/weight rooms"  
94: "Sports/Entertainment - Swimming (deck)"  
95: "Sports/Entertainment - Swimming (pool)"

When: Spc:SpcFunc = "Stairwell"  
default: 49  
49: "General - Corridors"  
51: "General - Unoccupied"  
77: "Residential - Common corridors"

When: Spc:SpcFunc = "Theater Area (Motion Picture)"  
default: 1  
1: "Assembly - Auditorium seating area"

When: Spc:SpcFunc = "Theater Area (Performance)"  
default: 93  
20: "Education - Music/theater/dance"  
58: "Misc - All others"  
93: "Sports/Entertainment - Stages, studios"

When: Spc:SpcFunc = "Transportation Function (Baggage Area)"  
default: 69  
67: "Misc - Sorting, packing, light assembly"  
69: "Misc - Transportation waiting"

When: Spc:SpcFunc = "Transportation Function (Ticketing Area)"  
default: 69  
5: "Assembly - Lobbies"  
69: "Misc - Transportation waiting"

When: Spc:SpcFunc = "Unleased Tenant Area"  
default: 74  
83: "Retail - Sales"  
43: "Food Service - Cafeteria/fast-food dining"  
45: "Food Service - Restaurant dining rooms"  
58: "Misc - All others"

```

    70: "Misc - Warehouses"
    74: "Office - Office space"
When: Spc:SpcFunc = "Unoccupied-Exclude from Gross Floor Area"
    default: 96
    96: "NA"
When: Spc:SpcFunc = "Unoccupied-Include in Gross Floor Area"
    default: 96
    96: "NA"
When: Spc:SpcFunc = "Videoconferencing Studio"
    default: 48
    48: "General - Conference/meeting"
When: Spc:SpcFunc = "Aging Eye/Low-vision (Corridor Area)"
    default: 49
    49: "General - Corridors"
When: Spc:SpcFunc = "Aging Eye/Low-vision (Dining)"
    default: 43
    43: "Food Service - Cafeteria/fast-food dining"
When: Spc:SpcFunc = "Aging Eye/Low-vision (Lounge/Waiting Area)"
    default: 46
    46: "General - Break rooms"
When: Spc:SpcFunc = "Aging Eye/Low-vision (Main Entry Lobby)"
    default: 72
    72: "Office - Main entry lobbies"
When: Spc:SpcFunc = "Aging Eye/Low-vision (Multipurpose Room)"
    default: 48
    48: "General - Conference/meeting"
When: Spc:SpcFunc = "Aging Eye/Low-vision (Religious Worship Area)"
    default: 8
    8: "Assembly - Places of religious worship"
When: Spc:SpcFunc = "Aging Eye/Low-vision (Restroom)"
    default: 40
    40: "Exhaust - Toilets, public"
When: Spc:SpcFunc = "Aging Eye/Low-vision (Stairwell)"
    default: 49
    49: "General - Corridors"
else:
    default: 96
    96: "NA"

```

**REMOVED**

```

LabExhRtType      LaboratoryExhaustRateType      Enumeration - Defaulted input
    default: -1
    1: "HoodDominated"
    2: "LoadDominated"

```

**IntLtgsys InteriorLightingSystem**

**CHANGED**

```

AllowType      AllowanceType      Enumeration - Conditional Enums Based on Spc:IntLtgspecMthd
When: IntLtgsys:IntLtgspecMthd = "AreaCategoryMethod"
and: IntLtgsys:ParentSpcFunc = "Audience Seating Area"
    default: 0

```

**Many Changed Dependencies & Options**

```

        0: "- none specified -"
        3: "Ornamental"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = "Auditorium Area"
default: 0
        0: "- none specified -"
        3: "Ornamental"
        6: "AccentDisplayFeature"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = "Auto Repair / Maintenance Area"
default: 0
        0: "- none specified -"
        1: "DetailedTaskWork"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = "Beauty Salon Area"
default: 0
        0: "- none specified -"
        1: "DetailedTaskWork"
        3: "Ornamental"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = "Civic Meeting Place Area"
default: 0
        0: "- none specified -"
        3: "Ornamental"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = "Classroom, Lecture, Training, Vocational Areas"
default: 0
        0: "- none specified -"
        5: "WhiteOrChalkBoard"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = "Concourse and Atria Area"
default: 0
        0: "- none specified -"
        3: "Ornamental"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = "Convention, Conference, Multipurpose and Meeting Area"
default: 0
        0: "- none specified -"
        3: "Ornamental"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = "Dining Area (Bar/Lounge and Fine Dining)"
default: 0
        0: "- none specified -"
        3: "Ornamental"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = "Dining Area (Cafeteria/Fast Food)"
default: 0
        0: "- none specified -"
        3: "Ornamental"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = "Dining Area (Family and Leisure)"
default: 0
        0: "- none specified -"
        3: "Ornamental"

```

Many Changed Dependencies & Options



```

When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = "Electrical, Mechanical, Telephone Rooms"
default: 0
      0: "- none specified -"
      1: "DetailedTaskWork"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = "Financial Transaction Area"
default: 0
      0: "- none specified -"
      3: "Ornamental"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = "General/Commercial & Industrial Work Area (High Bay)"
default: 0
      0: "- none specified -"
      1: "DetailedTaskWork"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = "General/Commercial & Industrial Work Area (Low Bay)"
default: 0
      0: "- none specified -"
      1: "DetailedTaskWork"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = "General/Commercial & Industrial Work Area (Precision)"
default: 0
      0: "- none specified -"
      4: "PrecisionWork"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = "Hotel Function Area"
default: 0
      0: "- none specified -"
      3: "Ornamental"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = "Library (Reading Area)"
default: 0
      0: "- none specified -"
      3: "Ornamental"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = "Lounge, Breakroom, or Waiting Area"
default: 0
      0: "- none specified -"
      3: "Ornamental"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = "Main Entry Lobby"
default: 0
      0: "- none specified -"
      3: "Ornamental"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = "Office Area (<250 square feet)"
default: 0
      0: "- none specified -"
      10: "PortableLightingForOffice"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = "Office Area (>250 square feet)"
default: 0
      0: "- none specified -"

```

```

    10: "PortableLightingForOffice"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = "Office Area (Open plan office)"
default: 0
    0: "- none specified -"
    10: "PortableLightingForOffice"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = "Parking Garage Area (Parking Zone)"
default: 0
    0: "- none specified -"
    9: "ParkingGarageATMLighting"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = "Pharmacy Area"
default: 0
    0: "- none specified -"
    2: "SpecializedTaskWork"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = "Religious Worship Area"
default: 0
    0: "- none specified -"
    3: "Ornamental"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = "Restrooms"
default: 0
    0: "- none specified -"
    6: "AccentDisplayFeature"
    7: "Decorative"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = "Retail Sales Area (Fitting Room)"
default: 0
    0: "- none specified -"
    11: "ExternalIlluminatedMirror"
    12: "InternalIlluminatedMirror"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = "Retail Sales Area (Grocery Sales)"
default: 0
    0: "- none specified -"
    6: "AccentDisplayFeature"
    7: "Decorative"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = "Retail Sales Area (Retail Merchandise Sales)"
default: 0
    0: "- none specified -"
    6: "AccentDisplayFeature"
    7: "Decorative"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = "Scientific Laboratory Area"
default: 0
    0: "- none specified -"
    2: "SpecializedTaskWork"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = "Stairwell"
default: 0
    0: "- none specified -"

```

Many Changed Dependencies & Options

```

        6: "AccentDisplayFeature"
        7: "Decorative"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = "Theater Area (Motion Picture)"
default: 0
        0: "- none specified -"
        3: "Ornamental"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = "Theater Area (Performance)"
default: 0
        0: "- none specified -"
        3: "Ornamental"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = "Transportation Function (Baggage Area)"
default: 0
        0: "- none specified -"
        6: "AccentDisplayFeature"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = "Transportation Function (Ticketing Area)"
default: 0
        0: "- none specified -"
        6: "AccentDisplayFeature"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = "Videoconferencing Studio"
default: 0
        0: "- none specified -"
        8: "VideoconferencingStudioLighting"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = 269
default: 0
        0: "- none specified -"
        7: "Decorative"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = 270
default: 0
        0: "- none specified -"
        3: "Ornamental"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = 271
default: 0
        0: "- none specified -"
        3: "Ornamental"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = 272
default: 0
        0: "- none specified -"
        3: "Ornamental"
        9: "TransitionLightingOffAtNight"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = 273
default: 0
        0: "- none specified -"
        3: "Ornamental"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"

```

Many Changed Dependencies & Options

```

and: IntLtgSys:ParentSpFunc = 274
    default: 0
           0: "- none specified -"
           3: "Ornamental"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = 275
    default: 0
           0: "- none specified -"
           6: "AccentDisplayFeature"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = 279
    default: 0
           0: "- none specified -"
           10: "TunableWhiteOrDimToWarm"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = 280
    default: 0
           0: "- none specified -"
           10: "TunableWhiteOrDimToWarm"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = 282
    default: 0
           0: "- none specified -"
           7: "Decorative"
           10: "TunableWhiteOrDimToWarm"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = 283
    default: 0
           0: "- none specified -"
           10: "TunableWhiteOrDimToWarm"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = 284
    default: 0
           0: "- none specified -"
           10: "TunableWhiteOrDimToWarm"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
    default: 0
           0: "- none specified -"
When: IntLtgSys:IntLtgSpecMthd = "TailoredMethod"
and: IntLtgSys:ParentSpFunc = "Auditorium Area"
    default: 0
           0: "- none specified -"
           111: "TailoredWallDisplayAllowance"
           112: "TailoredFloorDisplayAllowance"
           113: "TailoredTaskAllowance"
           114: "TailoredOrnamentalAndSpecialEffectAllowance"
           115: "TailoredVeryValuableDisplayCaseAllowance"
When: IntLtgSys:IntLtgSpecMthd = "TailoredMethod"
and: IntLtgSys:ParentSpFunc = "Convention, Conference, Multipurpose and Meeting Area"
    default: 0
           0: "- none specified -"
           111: "TailoredWallDisplayAllowance"
           112: "TailoredFloorDisplayAllowance"
           113: "TailoredTaskAllowance"

```

Many Changed Dependencies & Options

```

    114: "TailoredOrnamentalAndSpecialEffectAllowance"
    115: "TailoredVeryValuableDisplayCaseAllowance"
When: IntLtgSys:IntLtgSpecMthd = "TailoredMethod"
and: IntLtgSys:ParentSpFunc = "Dining Area (Bar/Lounge and Fine Dining)"
default: 0
    0: "- none specified -"
    111: "TailoredWallDisplayAllowance"
    112: "TailoredFloorDisplayAllowance"
    113: "TailoredTaskAllowance"
    114: "TailoredOrnamentalAndSpecialEffectAllowance"
    115: "TailoredVeryValuableDisplayCaseAllowance"
When: IntLtgSys:IntLtgSpecMthd = "TailoredMethod"
and: IntLtgSys:ParentSpFunc = "Dining Area (Cafeteria/Fast Food)"
default: 0
    0: "- none specified -"
    111: "TailoredWallDisplayAllowance"
    112: "TailoredFloorDisplayAllowance"
    113: "TailoredTaskAllowance"
    114: "TailoredOrnamentalAndSpecialEffectAllowance"
    115: "TailoredVeryValuableDisplayCaseAllowance"
When: IntLtgSys:IntLtgSpecMthd = "TailoredMethod"
and: IntLtgSys:ParentSpFunc = "Dining Area (Family and Leisure)"
default: 0
    0: "- none specified -"
    111: "TailoredWallDisplayAllowance"
    112: "TailoredFloorDisplayAllowance"
    113: "TailoredTaskAllowance"
    114: "TailoredOrnamentalAndSpecialEffectAllowance"
    115: "TailoredVeryValuableDisplayCaseAllowance"
When: IntLtgSys:IntLtgSpecMthd = "TailoredMethod"
and: IntLtgSys:ParentSpFunc = "Hotel Function Area"
default: 0
    0: "- none specified -"
    111: "TailoredWallDisplayAllowance"
    112: "TailoredFloorDisplayAllowance"
    113: "TailoredTaskAllowance"
    114: "TailoredOrnamentalAndSpecialEffectAllowance"
    115: "TailoredVeryValuableDisplayCaseAllowance"
When: IntLtgSys:IntLtgSpecMthd = "TailoredMethod"
and: IntLtgSys:ParentSpFunc = "Main Entry Lobby"
default: 0
    0: "- none specified -"
    111: "TailoredWallDisplayAllowance"
    112: "TailoredFloorDisplayAllowance"
    113: "TailoredTaskAllowance"
    114: "TailoredOrnamentalAndSpecialEffectAllowance"
    115: "TailoredVeryValuableDisplayCaseAllowance"
When: IntLtgSys:IntLtgSpecMthd = "TailoredMethod"
and: IntLtgSys:ParentSpFunc = "Hotel Function Area"
default: 0
    0: "- none specified -"
    111: "TailoredWallDisplayAllowance"
    112: "TailoredFloorDisplayAllowance"
    113: "TailoredTaskAllowance"

```

```

    114: "TailoredOrnamentalAndSpecialEffectAllowance"
    115: "TailoredVeryValuableDisplayCaseAllowance"
When: IntLtgSys:IntLtgSpecMthd = "TailoredMethod"
and: IntLtgSys:ParentSpcFunc = "Main Entry Lobby"
default: 0
    0: "- none specified -"
    111: "TailoredWallDisplayAllowance"
    112: "TailoredFloorDisplayAllowance"
    113: "TailoredTaskAllowance"
    114: "TailoredOrnamentalAndSpecialEffectAllowance"
    115: "TailoredVeryValuableDisplayCaseAllowance"
When: IntLtgSys:IntLtgSpecMthd = "TailoredMethod"
and: IntLtgSys:ParentSpcFunc = "Museum Area (Exhibition/Display)"
default: 0
    0: "- none specified -"
    111: "TailoredWallDisplayAllowance"
    112: "TailoredFloorDisplayAllowance"
    113: "TailoredTaskAllowance"
    114: "TailoredOrnamentalAndSpecialEffectAllowance"
    115: "TailoredVeryValuableDisplayCaseAllowance"
When: IntLtgSys:IntLtgSpecMthd = "TailoredMethod"
and: IntLtgSys:ParentSpcFunc = "Religious Worship Area"
default: 0
    0: "- none specified -"
    111: "TailoredWallDisplayAllowance"
    112: "TailoredFloorDisplayAllowance"
    113: "TailoredTaskAllowance"
    114: "TailoredOrnamentalAndSpecialEffectAllowance"
    115: "TailoredVeryValuableDisplayCaseAllowance"
When: IntLtgSys:IntLtgSpecMthd = "TailoredMethod"
and: IntLtgSys:ParentSpcFunc = "Retail Sales Area (Grocery Sales)"
default: 0
    0: "- none specified -"
    111: "TailoredWallDisplayAllowance"
    112: "TailoredFloorDisplayAllowance"
    113: "TailoredTaskAllowance"
    114: "TailoredOrnamentalAndSpecialEffectAllowance"
    115: "TailoredVeryValuableDisplayCaseAllowance"
When: IntLtgSys:IntLtgSpecMthd = "TailoredMethod"
and: IntLtgSys:ParentSpcFunc = "Retail Sales Area (Retail Merchandise Sales)"
default: 0
    0: "- none specified -"
    111: "TailoredWallDisplayAllowance"
    112: "TailoredFloorDisplayAllowance"
    113: "TailoredTaskAllowance"
    114: "TailoredOrnamentalAndSpecialEffectAllowance"
    115: "TailoredVeryValuableDisplayCaseAllowance"
When: IntLtgSys:IntLtgSpecMthd = "TailoredMethod"
and: IntLtgSys:ParentSpcFunc = "Theater Area (Motion Picture)"
default: 0
    0: "- none specified -"
    111: "TailoredWallDisplayAllowance"
    112: "TailoredFloorDisplayAllowance"
    113: "TailoredTaskAllowance"

```

Many Changed Dependencies & Options

	114: "TailoredOrnamentalAndSpecialEffectAllowance"		
	115: "TailoredVeryValuableDisplayCaseAllowance"		
When:	IntLtgSys:IntLtgSpecMthd = "TailoredMethod"		
and:	IntLtgSys:ParentSpFunc = "Theater Area (Performance)"		Many Changed Dependencies & Options
	default: 0		
	0: "- none specified -"		
	111: "TailoredWallDisplayAllowance"		
	112: "TailoredFloorDisplayAllowance"		
	113: "TailoredTaskAllowance"		
	114: "TailoredOrnamentalAndSpecialEffectAllowance"		
	115: "TailoredVeryValuableDisplayCaseAllowance"		
When:	IntLtgSys:IntLtgSpecMthd = "TailoredMethod"		
	default: 0		
	0: "- none specified -"		
PAFCredType	PowerAdjustmentFactorCreditType	Enumeration	#Vals: 5 (array length 1 for 2016)
	default: -1		
	1: "- none specified -"		
	2: "DaylightDimmingPlusOff"		
	3: "OccupantSensingControls-1to125SF"		
	4: "OccupantSensingControls-126to250SF"		
	5: "OccupantSensingControls-251to500SF"		
	6: "InstitutionalTuning"		
	7: "DemandResponsiveControl"		
	8: "Clerestories"	New Option	
	9: "HorizontalSlats"	New Option	
	10: "LightShelves"	New Option	
IsAcceptanceTestReqdRpt	IsAcceptanceTestRequiredReport	Integer	#Vals: 5 (array length 1 for 2016)
LtgCtrlCntRpt	LightingControlCountReport	Integer	#Vals: 5 (array length 1 for 2016)

ResSpcDHWFeatures	ResidentialSpaceDHWFeatures	Parent(s):	SpC		New Object Type
<b>ADDED</b>					
NumFlrServedByResDHWSys	NumberFloorsServedByResidentialDHWSys		Integer		- CondRequired input
MasterBathFxtrDistance	MasterBathFixtureDistance		Float	Units: ft	- CondRequired input
KitFxtrDistance	KitchenFixtureDistance		Float	Units: ft	- CondRequired input
ThirdRoomFxtrDistance	ThirdRoomFixtureDistance		Float	Units: ft	- CondRequired input
TotShowersServed	TotalShowersServed		Integer		- Defaulted input
TotBathsServed	TotalBathsServed		Integer		- Defaulted input
ResDWHRSysRef	ResidentialDWHRSysRef		ObjectRef	#Vals: 6	- Optional input
	ResDWHRSys				
ResDWHRSysShowers	ResidentialDWHRSysShowers		Integer	#Vals: 6	- Optional input
ResDWHRSysTakeCold	ResidentialDWHRSysTakeCold		Integer	#Vals: 6	- Optional input
ResDWHRSysFeedHeater	ResidentialDWHRSysFeedHeater		Integer	#Vals: 6	- Optional input

IntWall InteriorWall child types: Win / Dr / PolyLp

<b>Win</b>	<b>Window</b>	<b>parent types:</b> ExtWall / <b>IntWall</b>		
<b>ADDED</b>	IsClerestory	IsClerestory	Integer	- Defaulted input
<b>PVArrayGeom</b>	<b>PhotovoltaicArrayGeometry</b>	<b>Children:</b> PolyLp	<b>New Object Type</b>	
<b>ADDED</b>	IsBldgAttached	IsBldgAttached	Integer	- Optional input
<b>PVArrayShade</b>	<b>PhotovoltaicArrayShade</b>	<b>Children:</b> PolyLp	<b>New Object Type</b>	
<b>ADDED</b>	Type	Type default: 0 0: "- select type -" 1: "Site Shade" 2: "Building Shade"	Enumeration	- Defaulted input
<b>ThrmZn</b>	<b>ThermalZone</b>			
<b>ADDED</b>	VentByPriAirCondgSys	VentilationByPrimaryAirConditioningSystem	Integer #Vals: 2	- Optional input
	ZnSysVentConnectionType	ZoneSystemVentilationConnectionType default: -1 1: "Inlet"	Enumeration	- Optional input
	SizeForDOAS	SizeForDedicatedOutdoorAirSystem	Integer	- Optional input
	SizeForDOASCtrl	SizeForDedicatedOutdoorAirSystemControl default: -1 1: "Neutral" 2: "NeutralDehumidified" 3: "Cold"	Enumeration	- Optional input
	SizeForDOASTempLow	SizeForDedicatedOutdoorAirSystemTemperatureLow	Float Units: °F	- Optional input
	SizeForDOASTempHi	SizeForDedicatedOutdoorAirSystemTemperatureHigh	Float Units: °F	- Optional input
	ExhSrc	ExhaustSource default: -1 1: "None" 2: "VentilationSystem" 3: "TransferFromAdjacentZones" 4: "BothVentilationAndTransfer" 5: "DirectOutsideAir"	Enumeration	- Defaulted input
<b>CHANGED</b>	VentStd	VentilationStandard default: -1 1: <del>"T24-2013"</del> 2: <del>"T24-2016"</del> 1: "T24-2019" 2: "Other"	Enumeration	- Defaulted input



VentSpecMthd	VentilationSpecificationMethod	Enumeration	- Defaulted input
	default: -1		
	1: "NoVentilation"		
	2: "Maximum"		
	3: "Sum"		
	4: "FlowPerPerson"	Removed	
	5: "FlowPerArea"	Removed	
	6: "AirChangesPerHour"	Removed	
	7: "FlowPerZone"	Removed	

**AirSys                      AirSystem**

<b>ADDED</b>				
LabExhHasAnemometerCtrl	LaboratoryExhaustHasAnemometerControl	Integer	-	Optional input
LabExhHasContaminantCtrl	LaboratoryExhaustHasContaminantControl	Integer	-	Optional input
FullyDuctedExhFlag	FullyDuctedExhaustFlag	Integer	-	Defaulted input
ExhFiltersFlag	ExhaustFiltersFlag	Integer	-	Defaulted input
BiosftyCabExhFlag	BiosafetyCabinetFlag	Integer	-	Defaulted input
FullyDuctedRetFlag	FullyDuctedReturnFlag	Integer	-	Defaulted input
MERVGTE16Flag	MERVGreaterThanOrEqualTol6Flag	Integer	-	Defaulted input
GasPhaseAirCleanersFlag	GasPhaseAirCleanersFlag	Integer	-	Defaulted input
FullyDuctedExhDevFlow	FullyDuctedExhaustDeviceFlow	Float	Units: cfm	- Defaulted input
ExhFiltersDevFlow	ExhaustFiltersDeviceFlow	Float	Units: cfm	- Defaulted input
BiosftyCabExhDevFlow	BiosafetyCabinetDeviceFlow	Float	Units: cfm	- Defaulted input
FullyDuctedRetDevFlow	FullyDuctedReturnDeviceFlow	Float	Units: cfm	- Defaulted input
MERVGTE16DevFlow	MERVGreaterThanOrEqualTol6DeviceFlow	Float	Units: cfm	- Defaulted input
GasPhaseAirCleanersDevFlow	GasPhaseAirCleanersDeviceFlow	Float	Units: cfm	- Defaulted input
ExhFiltersDsgnPD	ExhaustFiltersDesignPressureDrop	Float	Units: inH20	- Defaulted input
BiosftyCabExhDsgnPD	BiosafetyCabinetDesignPressureDrop	Float	Units: inH20	- Defaulted input
MERVGTE16DsgnPD	MERVGreaterThanOrEqualTol6DesignPressureDrop	Float	Units: inH20	- Defaulted input
GasPhaseAirCleanersDsgnPD	GasPhaseAirCleanersDesignPressureDrop	Float	Units: inH20	- Defaulted input
NRCAMch19A	NRCAMch19A	Integer	-	Defaulted input

<b>CHANGED</b>				
NightCycleFanCtrl	NightCycleFanControl	Enumeration	-	Defaulted input
	When: AirSys:Type = "PVAV"			
	default: 3			
	1: "StaysOff"			
	3: "CycleOnCallAnyZone"			
	4: "CycleZoneFansOnly"			
	5: "CycleOnAnyCooling"	New Option		
	6: "CycleOnAnyHeating"	New Option		
	When: AirSys:Type = "VAV"			
	default: 3			
	1: "StaysOff"			
	3: "CycleOnCallAnyZone"			
	4: "CycleZoneFansOnly"			
	5: "CycleOnAnyCooling"	New Option		
	6: "CycleOnAnyHeating"	New Option		
	When: AirSys:Type = "SZAC"			
	default: 2			
	1: "StaysOff"			

```

                2: "CycleOnCallPrimaryZone"
                3: "CycleOnCallAnyZone"
                5: "CycleOnAnyCooling"           New Option
                6: "CycleOnAnyHeating"         New Option
When: AirSys:Type = "SZHP"
  default: 2
        1: "StaysOff"
        2: "CycleOnCallPrimaryZone"
        3: "CycleOnCallAnyZone"
        5: "CycleOnAnyCooling"           New Option
        6: "CycleOnAnyHeating"         New Option
When: AirSys:Type = "SZVAVAC"
  default: 2
        1: "StaysOff"
        2: "CycleOnCallPrimaryZone"
        3: "CycleOnCallAnyZone"
        5: "CycleOnAnyCooling"           New Option
        6: "CycleOnAnyHeating"         New Option
When: AirSys:Type = "SZVAVHP"
  default: 2
        1: "StaysOff"
        2: "CycleOnCallPrimaryZone"
        3: "CycleOnCallAnyZone"
        5: "CycleOnAnyCooling"           New Option
        6: "CycleOnAnyHeating"         New Option
When: AirSys:Type = "HV"
  default: 2
        1: "StaysOff"
        2: "CycleOnCallPrimaryZone"
        3: "CycleOnCallAnyZone"
        5: "CycleOnAnyCooling"           New Option
        6: "CycleOnAnyHeating"         New Option
else:
  default: 3
        1: "StaysOff"
        2: "CycleOnCallPrimaryZone"
        3: "CycleOnCallAnyZone"
        4: "CycleZoneFansOnly"
        5: "CycleOnAnyCooling"           New Option
        6: "CycleOnAnyHeating"         New Option

```

ZnSys	ZoneSystem	ObjectRef	
<b>ADDED</b>			
VRFSysRef	VariableRefrigerantFlowSystemReference	ObjectRef	- CondRequired (if ZnSys:Type = VRF)
	VRFSys		
IndoorType	IndoorType	Enumeration	- Defaulted input
	default: -1		
	1: "Ducted"		
	2: "NonDucted"		
AuxPwrOn	AuxiliaryPowerOn	Float	Units: W - Defaulted input
AuxPwrOff	AuxiliaryPowerOff	Float	Units: W - Defaulted input

HtgToClgSizingRatio	HeatingToCoolingSizingRatio	Float	Units: frac	- Optional input
LabExhHasAnemometerCtrl	LaboratoryExhaustHasAnemometerControl	Integer		- Optional input
LabExhHasContaminantCtrl	LaboratoryExhaustHasContaminantControl	Integer		- Optional input
RtdFlowCap	RatedFlowCapacity	Float	Units: cfm	- Defaulted input
RtdPwr	RatedPower	Float	Units: W	- Defaulted input
RtdHtRcvryEff	RatedHeatRecoveryEffectiveness	Float		- Defaulted input 0 <= Value <= 1
FullyDuctedExhFlag	FullyDuctedExhaustFlag	Integer		- Defaulted input
ExhFiltersFlag	ExhaustFiltersFlag	Integer		- Defaulted input
BiosftyCabExhFlag	BiosafetyCabinetFlag	Integer		- Defaulted input
MERVGT16Flag	MERVGreaterThanOrEqualTo16Flag	Integer		- Defaulted input
GasPhaseAirCleanersFlag	GasPhaseAirCleanersFlag	Integer		- Defaulted input
FullyDuctedExhDevFlow	FullyDuctedExhaustDeviceFlow	Float	Units: cfm	- Defaulted input
ExhFiltersDevFlow	ExhaustFiltersDeviceFlow	Float	Units: cfm	- Defaulted input
BiosftyCabExhDevFlow	BiosafetyCabinetDeviceFlow	Float	Units: cfm	- Defaulted input
MERVGT16DevFlow	MERVGreaterThanOrEqualTo16DeviceFlow	Float	Units: cfm	- Defaulted input
GasPhaseAirCleanersDevFlow	GasPhaseAirCleanersDeviceFlow	Float	Units: cfm	- Defaulted input
ExhFiltersDsgnPD	ExhaustFiltersDesignPressureDrop	Float	Units: inH2O	- Defaulted input
BiosftyCabExhDsgnPD	BiosafetyCabinetDesignPressureDrop	Float	Units: inH2O	- Defaulted input
MERVGT16DsgnPD	MERVGreaterThanOrEqualTo16DesignPressureDrop	Float	Units: inH2O	- Defaulted input
GasPhaseAirCleanersDsgnPD	GasPhaseAirCleanersDesignPressureDrop	Float	Units: inH2O	- Defaulted input
NRCAMch19A	NRCAMch19A	Integer		- Defaulted input

**CHANGED**

Type	Type	Enumeration	- Compulsory input
	default: -1		
	0: "- specify -"		
	1: "SZAC"		
	2: "SZHP"		
	9: "SPVAC"		
	10: "SPVHP"		
	3: "FPFC"		
	4: "WSHP"		
	5: "PTAC"		
	6: "PTHP"		
	14: "Furnace"		
	20: "VentilationOnly"	New Option	
	21: "Exhaust"		
	22: "Baseboard"		
	23: "PassiveBeam"		
	11: "VRF"	New Option	
	12: "MiniSplitAC"		
	13: "MiniSplitHP"		
ExhSysType	ExhaustSystemType	Enumeration	- Defaulted input
	When: ZnSys:Type = "Exhaust"	New Option List	
	default: 10		
	1: "General"		
	2: "Laboratory"		
	3: "CommercialKitchen"		
	4: "ParkingGarage"		
	When: ZnSys:Type = "VentilationOnly"	New Option List	
	default: 10		
	11: "ExhaustOnly"		
	12: "SupplyOnly"		

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13: "Balanced"
14: "HeatRecovery"
else:
  default: 1
  1: "General"
  2: "Laboratory"
  3: "CommercialKitchen"
  4: "ParkingGarage"
  11: "ExhaustOnly"
  12: "SupplyOnly"
  13: "Balanced"
  14: "HeatRecovery"

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New Option  
New Option  
New Option  
New Option

VRFSys	VariableRefrigerantFlowSystem	Parent: Bldg	New Object Type
<b>ADDED</b>			
Desc	Description		String - Optional input
Status	Status		Enumeration - Defaulted input
	default: -1		
	1: "New"		
	2: "Existing"		
	3: "Altered"		
Cnt	Count		Integer - Defaulted input
HtRcvry	HeatRecovery		Enumeration - Defaulted input
	default: -1		
	1: "Yes"		
	2: "No"		
PLRMin	PartLoadRatioMinimum		Float Units: frac - Defaulted input
CtrlPriority	ControlPriority		Enumeration - Defaulted input
	default: -1		
	1: "MasterThermostatPriority"		
	2: "LoadPriority"		
CtrlZnRef	ControlZoneReference		ObjectRef - Req'd if CtrlPriority =
	ThrmlZn (ThrmlZn:Type = "Conditioned")		MasterThermostatPriority, otherwise Optional
IndoorTypeRtd	IndoorTypeRated		Enumeration - Defaulted input
	default: -1		
	1: "Ducted"		
	2: "NonDucted"		
ClgCapNetRtd	CoolingCapacityNetRated		Float Units: Btu/h - Required input
EER	EER		Float - Required input
HtgCapNetRtd	HeatingCapacityNetRated		Float Units: Btu/h - Required input
COP	COP		Float - Required input
DefHtSrc	DefrostHeatSource		Enumeration - Defaulted input
	default: -1		
	1: "HotGas"		
	2: "Electric"		
DefCtrlTemp	DefrostControlTemperature		Float Units: °F - Defaulted input
CprsrCrankcaseHtrCap	CompressorCrankcaseHeatCapacity		Float Units: W/Compressor - Defaulted input
CprsrQty	CompressorQuantity		Integer - Defaulted input
CrankcaseCtrlTemp	CrankcaseControlTemperature		Float Units: °F - Defaulted input
EquivalentPipeLen	EquivalentPipeLength		Float Units: ft - Defaulted Value >= 10
MaxDeltaHgt	MaximumDeltaHeight		Float Units: ft - Defaulted input

ClgPipeLoss_fPipeHgtCoeff	CoolingPipeLoss_fHeightCoefficient	Float	Units: 1/ft	- Defaulted input
HtgPipeLoss_fPipeHgtCoeff	HeatingPipeLoss_fHeightCoefficient	Float	Units: 1/ft	- Defaulted input
AcceptanceTestReq	AcceptanceTestRequired	Integer		- Defaulted input
NRCAMch02A	NRCAMch02A	Integer		- Defaulted input
NRCAMch03A	NRCAMch03A	Integer		- Defaulted input
NRCAMch04H	NRCAMch04H	Integer		- Defaulted input
NRCAMch05A	NRCAMch05A	Integer		- Defaulted input
NRCAMch06A	NRCAMch06A	Integer		- Defaulted input
NRCAMch07A	NRCAMch07A	Integer		- Defaulted input
NRCAMch08A	NRCAMch08A	Integer		- Defaulted input
NRCAMch09A	NRCAMch09A	Integer		- Defaulted input
NRCAMch10A	NRCAMch10A	Integer		- Defaulted input
NRCAMch11A	NRCAMch11A	Integer		- Defaulted input
NRCAMch12A	NRCAMch12A	Integer		- Defaulted input
NRCAMch13A	NRCAMch13A	Integer		- Defaulted input
NRCAMch14A	NRCAMch14A	Integer		- Defaulted input
NRCAMch15A	NRCAMch15A	Integer		- Defaulted input
NRCAMch16A	NRCAMch16A	Integer		- Defaulted input
NRCAMch17A	NRCAMch17A	Integer		- Defaulted input
NRCAMch18A	NRCAMch18A	Integer		- Defaulted input
NRCAMch19A	NRCAMch19A	Integer		- Defaulted input
CombRat	CombinationRatio	Float		- Defaulted input

**AirSeg                      AirSegment**

**CHANGED**

Type	Type	Enumeration	- Compulsory input
	default: 0		
	0: "- specify -"		
	1: "Supply"		
	2: "Return"		
	3: "Relief"		
	4: "Exhaust"		
	5: "OutsideAir"		
	6: "Connector"		
	7: "None"		<b>New Option</b>

**CoilClg                      CoilCooling**

**CHANGED**

Type	Type	Enumeration	- Compulsory input
	default: 0		
	0: "- specify -"		
	1: "ChilledWater"		
	2: "DirectExpansion"		
	4: "VRF"		<b>New Option</b>

<b>CoilHtg</b>	<b>CoilHeating</b>			
<b>CHANGED</b>	Type	Type	Enumeration	- Compulsory input
		default: 0		
		0: "- specify -"		
		1: "Resistance"		
		2: "Furnace"		
		3: "HeatPump"		
		4: "HotWater"		
		6: "VRF"	<b>New Option</b>	

<b>Fan</b>	<b>Fan</b>			
<b>ADDED</b>	PwrIdx	PowerIndex	Float	Units: W/cfm - Defaulted input Value >= 0
	PwrRpt	PowerReport	Float	Units: W - Optional input

<b>FluidSys</b>	<b>FluidSystem</b>			
<b>ADDED</b>	NRCAMch19A	NRCAMch19A	Integer	- Defaulted input
<b>REMOVED</b>	AnnualSolFrac	AnnualSolarFraction	Float	
	Manufacturer	Manufacturer	String	
	Brand	Brand	String	
	ModelNum	ModelNumber	String	
	SRRCertNum	SRRCertificationNumber	String	
	CollectorType	CollectorType	String	
	Area	Area	Float	
	RatedEffCurveSlope	RatedEfficiencyCurveSlope	Float	
	RatedEffCurveIntercept	RatedEfficiencyCurveIntercept	Float	
	SolCollectorCnt	SolarCollectorCount	Integer	
	Fluid	Fluid	String	
	AngleFromTrueNorth	AngleFromTrueNorth	Float	
	SlopeFromHorizontal	SlopeFromHorizontal	Float	
	NameOfProgramUsed	NameOfProgramUsed	String	
	Version	Version	String	
	SecondaryTankVol	SecondaryTankVolume	Float	
	NumOfIdenticalDwellingUnits	NumberOfIdenticalDwellingUnits	Integer	

<b>WtrHtr</b>	<b>WaterHeater</b>			
<b>REMOVED</b>	FluidSysCnt	FluidSystemCount	Integer	

**ResDHWSys**

**ResidentialDHWSys**

**ADDED**

CompactDist	CompactDistribution	Enumeration	- Required input
	default: -1		
	1: "not compact"		
	2: "Basic Credit"		
	3: "Expanded Credit (HERS req'd)"		
HaveShowerDrainHtRcvry	HaveShowerDrainHeatRecovery	Integer	- Optional input
ShowerDrainHtRcvryEff	ShowerDrainHeatRecoveryEfficiency	Float	- Optional input

**CHANGED**

Type	Type	Enumeration	- Required input
	When: ResDHWSys:CentralSys = 1		
	default: 3840		
	0: "- specify -"		
	3840: "Standard"		
	8392704: "(HERS req'd) Pipe Insulation, All Lines"		
	else:		
	default: 3840		
	0: "- specify -"		
	3840: "Standard"		
	4608: "Parallel Piping"		
	4609: "Point of use"		
	4992: "Recirculation, Non-Demand Control"		
	5248: "Recirculation, Demand Control Push Button"		
	5504: "Recirculation, Demand Control Occupancy/Motion"		
	8392704: "(HERS req'd) Pipe Insulation, All Lines"		
	8393216: "(HERS req'd) Parallel Piping"		
	8393856: "(HERS req'd) Recirculation, Demand Control Push Button"		
	8394112: "(HERS req'd) Recirculation, Demand Control Occupancy/Motion"		
	8394496: <del>"(HERS req'd) Compact Distribution System"</del>		<b>Removed</b>

**ResDWHRSys**

**ResidentialDrainWaterHeatRecoverySystem**

**New Object Type**

**ADDED**

CSARTdEff	CSARatedEfficiency	Float	Units: %	- Required input	1 <= Value <= 99
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**ResWtrHtr**

**ResidentialWaterHeater**

**CHANGED**

HPWHBrand	HeatPumpWaterHeaterBrand	Enumeration	- CondRequired input
	When: ResWtrHtr:ElementType = "Heat Pump"		
	and: ResWtrHtr:HtPumpWtrHtrNEEARtd = 1		
	default: 1		
	1: "- select Brand -"		
	11: "A. O. Smith"		
	12: "American"		
	13: "Bradford White"		
	14: "EcoSense"		

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15: "GE"
16: "Kenmore"
17: "Lochinvar"
18: "Reliance"
19: "Rheem"
20: "Richmond"
21: "Ruud"
22: "Sanden"
23: "State"
24: "Stiebel Eltron"
25: "US Craftmaster"
26: "Whirlpool"
27: "(generic)"
else:
  default: 0
  0: "n/a"
HPWHModel HeatPumpWaterHeaterModel Enumeration - CondRequired input
When: ... All Prior Conditional Lists Unchanged ...
When: ResWtrHtr:HPWHBrand = "(generic)" New Option List
  default: 1
  1: "- select Model -"
  990138: "UEF 2 (50 gal)"
else:
  default: 0
  0: "n/a"

```