

CBECC-Com Input Data Model changes from 2019.1.0 (5962, May 2019) to 2019.1.2 (6206, Feb 2020):

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		
REMOVED			
CompPathEnv	CompliancePathEnvelope default: 1 1: "Performance" 2: "Prescriptive" 3: "NA"	Enumeration	- Defaulted input
CompPathMech	CompliancePathMechanical default: 1 1: "Performance" 2: "Prescriptive" 3: "NA"	Enumeration	- Defaulted input
CompPathDHW	CompliancePathDomesticHotWater default: 1 1: "Performance" 2: "Prescriptive" 3: "NA"	Enumeration	- Defaulted input
CompPathLtg	CompliancePathLighting default: 1 1: "Performance" 2: "Prescriptive" 3: "NA"	Enumeration	- Defaulted input
CompPathKit	CompliancePathKitchen default: 3 1: "Performance" 2: "Prescriptive" 3: "NA"	Enumeration	- Defaulted input
CompPathComputerRm	CompliancePathComputerRoom default: 3 1: "Performance" 2: "Prescriptive" 3: "NA"	Enumeration	- Defaulted input
CompPathLab	CompliancePathLaboratory default: 3 1: "Performance" 2: "Prescriptive" 3: "NA"	Enumeration	- Defaulted input
SolThrm1Comp	SolarThermalCompliance default: 2 1: "Yes" 2: "NA"	Enumeration	- Defaulted input

ADDED

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ResBaseSysChange      ResidentialBaselineSystemChange      Integer      - Optional input
NRCAMch20H            NRCAMch20H                            Integer      - Defaulted input
NRCAMch21H            NRCAMch21H                            Integer      - Defaulted input
MandatoryLtgCtrlIsBldgDemandResponseCtrlRpt MandatoryLightingControlIsBuildingDemandResponseControlRe... Enumeration - Defaulted input
    default: 0
    1: "NA"
    2: "Required"
    3: "Exempt"
MandatoryLtgCtrlIsBldgShutOffCtrlRpt MandatoryLightingControlIsBuildingShutOffControlReport      Enumeration - - - - Defaulted input
    default: 0
    1: "NA"
    2: "Required"
    3: "Exempt"
MandatoryLtgCtrlDescRpt MandatoryLightingControlDescriptionReport      String      #Vals: 10 - Optional input
MandatoryLtgCtrlSpcFunctRpt MandatoryLightingControlSpaceFunctionReport      Enumeration #Vals: 10 - Defaulted input
    When: Spc:CondgType = "Plenum"
    default: 262
    262: "Unoccupied-Exclude from Gross Floor Area"
    else:
    default: 0
    0: "- specify -"
    202: "Audience Seating Area"
    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)"

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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)"
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"
265: "_Invalid from 2016 - Corridors, Restrooms, Stairs, and Support Areas"
266: "_Invalid from 2016 - Police Station and Fire Station"
267: "_Invalid from 2016 - Housing, Public and Common Areas: Multi-family, Dormitory"
268: "_Invalid from 2016 - Housing, Public and Common Areas: Senior Housing"

MandatoryLtgCtrlIsAreaCtrlRpt	MandatoryLightingControlIsAreaControlReport	Enumeration	#Vals: 10	-	Defaulted input
	default: 0				
	1: "NA"				
	2: "Required"				
	3: "Exempt"				
MandatoryLtgCtrlIsMultiLvlCtrlRpt	MandatoryLightingControlIsMultiLevelControlReport	Enumeration	#Vals: 10	-	Defaulted input
	default: 0				
	1: "NA"				
	2: "Required"				
	3: "Exempt"				
MandatoryLtgCtrlIsShutOffCtrlRpt	MandatoryLightingControlIsShutOffControlReport	Enumeration	#Vals: 10	-	Defaulted input
	default: 0				
	1: "NA"				
	2: "Required"				
	3: "Exempt"				
MandatoryLtgCtrlIsPriDayltgCtrlRpt	MandatoryLightingControlIsPrimaryDaylightingControlReport	Enumeration	#Vals: 10	-	Defaulted input
	default: 0				
	1: "NA"				
	2: "Required"				
	3: "Exempt"				
MandatoryLtgCtrlIsSecDayltgCtrlRpt	MandatoryLightingControlIsSecondaryDaylightingControlReport	Enumeration	#Vals: 10	-	Defaulted input
	default: 0				
	1: "NA"				
	2: "Required"				
	3: "Exempt"				

Mat Material

CHANGED

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. - CW"			Renamed Options
	5101: "Aluminum w/out Thrml Break - Single glass pane. stone. or metal pane - R4 Ins. - CW"			
	5102: "Aluminum w/out Thrml Break - Single glass pane. stone. or metal pane - R7 Ins. - CW"			
	5103: "Aluminum w/out Thrml Break - Single glass pane. stone. or metal pane - R10 Ins. - CW"			
	5104: "Aluminum w/out Thrml Break - Single glass pane. stone. or metal pane - R15 Ins. - CW"			
	5105: "Aluminum w/out Thrml Break - Single glass pane. stone. or metal pane - R20 Ins. - CW"			
	5106: "Aluminum w/out Thrml Break - Single glass pane. stone. or metal pane - R25 Ins. - CW"			
	5107: "Aluminum w/out Thrml Break - Single glass pane. stone. or metal pane - R30 Ins. - CW"			
	5108: "Aluminum w/out Thrml Break - Double glass with no low e coatings - No Ins. - CW"			
	5109: "Aluminum w/out Thrml Break - Double glass with no low e coatings - R4 Ins. - CW"			
	5110: "Aluminum w/out Thrml Break - Double glass with no low e coatings - R7 Ins. - CW"			
	5111: "Aluminum w/out Thrml Break - Double glass with no low e coatings - R10 Ins. - CW"			
	5112: "Aluminum w/out Thrml Break - Double glass with no low e coatings - R15 Ins. - CW"			
	5113: "Aluminum w/out Thrml Break - Double glass with no low e coatings - R20 Ins. - CW"			
	5114: "Aluminum w/out Thrml Break - Double glass with no low e coatings - R25 Ins. - CW"			
	5115: "Aluminum w/out Thrml Break - Double glass with no low e coatings - R30 Ins. - CW"			
	5116: "Aluminum w/out Thrml Break - Triple or low e glass - No Ins. - CW"			
	5117: "Aluminum w/out Thrml Break - Triple or low e glass - R4 Ins. - CW"			
	5118: "Aluminum w/out Thrml Break - Triple or low e glass - R7 Ins. - CW"			

5119: "Aluminum w/out Thrml Break - Triple or low e glass - R10 Ins. - CW"
 5120: "Aluminum w/out Thrml Break - Triple or low e glass - R15 Ins. - CW"
 5121: "Aluminum w/out Thrml Break - Triple or low e glass - R20 Ins. - CW"
 5122: "Aluminum w/out Thrml Break - Triple or low e glass - R25 Ins. - CW"
 5123: "Aluminum w/out Thrml Break - Triple or low e glass - R30 Ins. - CW"
 5124: "Aluminum w/ Thrml Break - Single glass pane. stone. or metal pane - No Ins. - CW"
 5125: "Aluminum w/ Thrml Break - Single glass pane. stone. or metal pane - R4 Ins. - CW"
 5126: "Aluminum w/ Thrml Break - Single glass pane. stone. or metal pane - R7 Ins. - CW"
 5127: "Aluminum w/ Thrml Break - Single glass pane. stone. or metal pane - R10 Ins. - CW"
 5128: "Aluminum w/ Thrml Break - Single glass pane. stone. or metal pane - R15 Ins. - CW"
 5129: "Aluminum w/ Thrml Break - Single glass pane. stone. or metal pane - R20 Ins. - CW"
 5130: "Aluminum w/ Thrml Break - Single glass pane. stone. or metal pane - R25 Ins. - CW"
 5131: "Aluminum w/ Thrml Break - Single glass pane. stone. or metal pane - R30 Ins. - CW"
 5132: "Aluminum w/ Thrml Break - Double glass with no low e - No Ins. - CW"
 5133: "Aluminum w/ Thrml Break - Double glass with no low e - R4 Ins. - CW"
 5134: "Aluminum w/ Thrml Break - Double glass with no low e - R7 Ins. - CW"
 5135: "Aluminum w/ Thrml Break - Double glass with no low e - R10 Ins. - CW"
 5136: "Aluminum w/ Thrml Break - Double glass with no low e - R15 Ins. - CW"
 5137: "Aluminum w/ Thrml Break - Double glass with no low e - R20 Ins. - CW"
 5138: "Aluminum w/ Thrml Break - Double glass with no low e - R25 Ins. - CW"
 5139: "Aluminum w/ Thrml Break - Double glass with no low e - R30 Ins. - CW"
 5140: "Aluminum w/ Thrml Break - Triple or low e glass - No Ins. - CW"
 5141: "Aluminum w/ Thrml Break - Triple or low e glass - R4 Ins. - CW"
 5142: "Aluminum w/ Thrml Break - Triple or low e glass - R7 Ins. - CW"
 5143: "Aluminum w/ Thrml Break - Triple or low e glass - R10 Ins. - CW"
 5144: "Aluminum w/ Thrml Break - Triple or low e glass - R15 Ins. - CW"
 5145: "Aluminum w/ Thrml Break - Triple or low e glass - R20 Ins. - CW"
 5146: "Aluminum w/ Thrml Break - Triple or low e glass - R25 Ins. - CW"
 5147: "Aluminum w/ Thrml Break - Triple or low e glass - R30 Ins. - CW"
 5148: "Continuous Ins. - Single glass pane. stone. or metal pane - No Ins. - CW"
 5149: "Continuous Ins. - Single glass pane. stone. or metal pane - R4 Ins. - CW"
 5150: "Continuous Ins. - Single glass pane. stone. or metal pane - R7 Ins. - CW"
 5151: "Continuous Ins. - Single glass pane. stone. or metal pane - R10 Ins. - CW"
 5152: "Continuous Ins. - Single glass pane. stone. or metal pane - R15 Ins. - CW"
 5153: "Continuous Ins. - Single glass pane. stone. or metal pane - R20 Ins. - CW"
 5154: "Continuous Ins. - Single glass pane. stone. or metal pane - R25 Ins. - CW"
 5155: "Continuous Ins. - Single glass pane. stone. or metal pane - R30 Ins. - CW"
 5156: "Continuous Ins. - Double glass with no low e coatings - No Ins. - CW"
 5157: "Continuous Ins. - Double glass with no low e coatings - R4 Ins. - CW"
 5158: "Continuous Ins. - Double glass with no low e coatings - R7 Ins. - CW"
 5159: "Continuous Ins. - Double glass with no low e coatings - R10 Ins. - CW"
 5160: "Continuous Ins. - Double glass with no low e coatings - R15 Ins. - CW"
 5161: "Continuous Ins. - Double glass with no low e coatings - R20 Ins. - CW"
 5162: "Continuous Ins. - Double glass with no low e coatings - R25 Ins. - CW"
 5163: "Continuous Ins. - Double glass with no low e coatings - R30 Ins. - CW"
 5164: "Continuous Ins. - Triple or low e glass - No Ins. - CW"
 5165: "Continuous Ins. - Triple or low e glass - R4 Ins. - CW"
 5166: "Continuous Ins. - Triple or low e glass - R7 Ins. - CW"
 5167: "Continuous Ins. - Triple or low e glass - R10 Ins. - CW"
 5168: "Continuous Ins. - Triple or low e glass - R15 Ins. - CW"
 5169: "Continuous Ins. - Triple or low e glass - R20 Ins. - CW"
 5170: "Continuous Ins. - Triple or low e glass - R25 Ins. - CW"
 5171: "Continuous Ins. - Triple or low e glass - R30 Ins. - CW"
 5172: "Structural Glazing - Single glass pane. stone. or metal pane - No Ins. - CW"

5173: "Structural Glazing - Single glass pane. stone. or metal pane - R4 Ins. - CW"
 5174: "Structural Glazing - Single glass pane. stone. or metal pane - R7 Ins. - CW"
 5175: "Structural Glazing - Single glass pane. stone. or metal pane - R10 Ins. - CW"
 5176: "Structural Glazing - Single glass pane. stone. or metal pane - R15 Ins. - CW"
 5177: "Structural Glazing - Single glass pane. stone. or metal pane - R20 Ins. - CW"
 5178: "Structural Glazing - Single glass pane. stone. or metal pane - R25 Ins. - CW"
 5179: "Structural Glazing - Single glass pane. stone. or metal pane - R30 Ins. - CW"
 5180: "Structural Glazing - Double glass with no low e coatings - No Ins. - CW"
 5181: "Structural Glazing - Double glass with no low e coatings - R4 Ins. - CW"
 5182: "Structural Glazing - Double glass with no low e coatings - R7 Ins. - CW"
 5183: "Structural Glazing - Double glass with no low e coatings - R10 Ins. - CW"
 5184: "Structural Glazing - Double glass with no low e coatings - R15 Ins. - CW"
 5185: "Structural Glazing - Double glass with no low e coatings - R20 Ins. - CW"
 5186: "Structural Glazing - Double glass with no low e coatings - R25 Ins. - CW"
 5187: "Structural Glazing - Double glass with no low e coatings - R30 Ins. - CW"
 5188: "Structural Glazing - Triple or low e glass - No Ins. - CW"
 5189: "Structural Glazing - Triple or low e glass - R4 Ins. - CW"
 5190: "Structural Glazing - Triple or low e glass - R7 Ins. - CW"
 5191: "Structural Glazing - Triple or low e glass - R10 Ins. - CW"
 5192: "Structural Glazing - Triple or low e glass - R15 Ins. - CW"
 5193: "Structural Glazing - Triple or low e glass - R20 Ins. - CW"
 5194: "Structural Glazing - Triple or low e glass - R25 Ins. - CW"
 5195: "Structural Glazing - Triple or low e glass - R30 Ins. - CW"

Spc Space

REMOVED

MandatoryLtgCtrlCntRpt MandatoryLightingControlCountReport Integer #Vals: 5 - Defaulted input
 MandatoryLtgCtrlIsAcceptanceTestReqdRpt MandatoryLightingControlIsAcceptanceTestRequiredReport Enumeration #Vals: 5 - Defaulted input
 default: -1
 1: "No"
 2: "Yes"

ADDED

BypassOccSensorCtrl BypassOccupancySensorControl Integer - - - - CondRequired input

IntLtgSys InteriorLightingSystem

CHANGED

AllowType AllowanceType Enumeration - - - (see next line)
 For T-24, Conditional Enums Based on Spc:IntLtgSpecMthd
 When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
 and: IntLtgSys:ParentSpcFunc = "Audience Seating Area"
 default: 0
 0: "- none specified -"
 3: "Ornamental"
 When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
 and: IntLtgSys:ParentSpcFunc = "Auditorium Area"
 default: 0
 0: "- none specified -"
 3: "Ornamental"

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        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"
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"
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        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 = "Museum Area (Exhibition/Display)"
default: 0
            0: "- none specified -"
            7: "AccentDisplayFeature-Museum"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = "Museum Area (Restoration Room)"
default: 0
            0: "- none specified -"
            1: "DetailedTaskWork"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = "Office Area (<250 square feet)"
default: 0
            0: "- none specified -"
            11: "PortableLightingForOffice"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"

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New Options


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and: IntLtgSys:ParentSpFunc = "Office Area (>250 square feet)"
default: 0
0: "- none specified -"
11: "PortableLightingForOffice"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = "Office Area (Open plan office)"
default: 0
0: "- none specified -"
11: "PortableLightingForOffice"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = "Parking Garage Area (Parking Zone)"
default: 0
0: "- none specified -"
10: "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"
8: "Decorative"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = "Retail Sales Area (Fitting Room)"
default: 0
0: "- none specified -"
12: "ExternalIlluminatedMirror"
13: "InternalIlluminatedMirror"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = "Retail Sales Area (Grocery Sales)"
default: 0
0: "- none specified -"
6: "AccentDisplayFeature"
8: "Decorative"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = "Retail Sales Area (Retail Merchandise Sales)"
default: 0
0: "- none specified -"
6: "AccentDisplayFeature"
8: "Decorative"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = "Scientific Laboratory Area"
default: 0
0: "- none specified -"
2: "SpecializedTaskWork"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
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and: IntLtgSys:ParentSpFunc = "Stairwell"
default: 0
      0: "- none specified -"
      6: "AccentDisplayFeature"
      8: "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 -"
      9: "VideoconferencingStudioLighting"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = 269
default: 0
      0: "- none specified -"
      8: "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"
      14: "TransitionLightingOffAtNight"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = 273
default: 0

```

Removed options

```

        0: "- none specified -"
        3: "Ornamental"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
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 -"
        15: "TunableWhiteOrDimToWarm"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = 280
default: 0
        0: "- none specified -"
        15: "TunableWhiteOrDimToWarm"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = 282
default: 0
        0: "- none specified -"
        8: "Decorative"
        15: "TunableWhiteOrDimToWarm"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = 283
default: 0
        0: "- none specified -"
        15: "TunableWhiteOrDimToWarm"
When: IntLtgSys:IntLtgSpecMthd = "AreaCategoryMethod"
and: IntLtgSys:ParentSpFunc = 284
default: 0
        0: "- none specified -"
        15: "TunableWhiteOrDimToWarm"
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"
```

```

    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: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 = "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:ParentSpFunc = "Religious Worship Area"
default: 0
    0: "- none specified -"
    111: "TailoredWallDisplayAllowance"
    112: "TailoredFloorDisplayAllowance"
    113: "TailoredTaskAllowance"
    114: "TailoredOrnamentalAndSpecialEffectAllowance"
    115: "TailoredVeryValuableDisplayCaseAllowance"
When: IntLtgSys:IntLtgSpecMthd = "TailoredMethod"
and: IntLtgSys:ParentSpFunc = "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:ParentSpFunc = "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:ParentSpFunc = "Theater Area (Motion Picture)"
default: 0
    0: "- none specified -"
    111: "TailoredWallDisplayAllowance"
    112: "TailoredFloorDisplayAllowance"
    113: "TailoredTaskAllowance"

```

```

114: "TailoredOrnamentalAndSpecialEffectAllowance"
115: "TailoredVeryValuableDisplayCaseAllowance"
When: IntLtgSys:IntLtgSpecMthd = "TailoredMethod"
and: IntLtgSys:ParentSpcFunc = "Theater Area (Performance)"
default: 0
0: "- none specified -"
111: "TailoredWallDisplayAllowance"
112: "TailoredFloorDisplayAllowance"
113: "TailoredTaskAllowance"
114: "TailoredOrnamentalAndSpecialEffectAllowance"
115: "TailoredVeryValuableDisplayCaseAllowance"
When: IntLtgSys:IntLtgSpecMthd = "TailoredMethod"
default: 0
0: "- none specified -"

```

Win	Window	parent types: ExtWall / IntWall		
REMOVED	OverhangTransOption	OverhangTransmittanceOption default: -1 1: "Constant" 2: "Scheduled"	Enumeration	- Optional input
	OverhangTransSchRef	OverhangTransmittanceScheduleReference	ObjectRef	- Optional input
	LeftFinTransOption	LeftFinTransmittanceOption default: -1 1: "Constant" 2: "Scheduled"	Enumeration	- Optional input
	LeftFinTransSchRef	LeftFinTransmittanceScheduleReference	ObjectRef	- Optional input
	RightFinTransOption	RightFinTransmittanceOption default: -1 1: "Constant" 2: "Scheduled"	Enumeration	- Optional input
	RightFinTransSchRef	RightFinTransmittanceScheduleReference	ObjectRef	- Optional input

ExtShdgObj	ExternalShadingObject	Children: PolyLp		
REMOVED	TransOption	TransmittanceOption default: -1 1: "Constant" 2: "Scheduled"	Enumeration	- Defaulted input

Thrm1Zn	ThermalZone				
ADDED					
ClgDsgnFlow	CoolingDesignFlow	Float	- Units: cfm	Optional input	
ClgDsgnSizingFac	CoolingDesignSizingFactor	Float	-	Optional input	
		Error if not:	Value >= 1,	Warning if not:	Value <= 1.5
HtgDsgnFlow	HeatingDesignFlow	Float	- Units: cfm	Optional input	
HtgDsgnSizingFac	HeatingDesignSizingFactor	Float	-	Optional input	
		Error if not:	Value >= 1,	Warning if not:	Value <= 1.5

AirSys	AirSystem				
ADDED					
ClgSizingRat	CoolingSizingRatio	Float	- - - -	Optional input	
				Warning if not:	1 <= Value <= 1.25
HtgSizingRat	HeatingSizingRatio	Float	- - - -	Optional input	
				Warning if not:	1 <= Value <= 1.5
DsgnAirFlowMinRat	DesignAirFlowMinimumRatio	Float	- - - -	Optional input	
DsgnPrehtTemp	DesignPreheatTemperature	Float	- Units: °F	Optional input	
DsgnPrehtHumidityRat	DesignPreheatHumidityRatio	Float	- -	Optional input	
DsgnPreclTemp	DesignPrecoolTemperature	Float	- Units: °F	Optional input	
DsgnPreclHumidityRat	DesignPrecoolHumidityRatio	Float	- -	Optional input	
SizingOption	SizingOption	Enumeration	- -	Optional input	
	default: -1				
	1: "Coincident"				
	2: "NonCoincident"				
ClgAllOutsdAir	CoolingAllOutsideAir	Enumeration	- - - -	Optional input	
	default: -1				
	1: "Yes"				
	2: "No"				
HtgAllOutsdAir	HeatingAllOutsideAir	Enumeration	- - - -	Optional input	
	default: -1				
	1: "Yes"				
	2: "No"				
ClgDsgnHumidityRat	CoolingDesignHumidityRatio	Float	- - - -	Optional input	
HtgDsgnHumidityRat	HeatingDesignHumidityRatio	Float	- - - -	Optional input	

ZnSys	ZoneSystem				
ADDED					
OptStart	OptimumStart	Integer	-	Defaulted input	
ClgSizingRat	CoolingSizingRatio	Float	-	Optional input	
				Warning if not:	1 <= Value <= 1.25
HtgSizingRat	HeatingSizingRatio	Float	-	Optional input	
				Warning if not:	1 <= Value <= 1.5

HtRej		HeatRejection			
ADDED	BypassClosedTowerChecks	BypassClosedTowerChecks	Integer	-	Defaulted input

WtrHtr		WaterHeater			
ADDED	COP	COP	Float	-	CondRequired input

ResDHWSys		ResidentialDHWSystem			
REMOVED	PumpPwr	PumpPower	Float	-	Units: kW Optional input
	PumpBHP	PumpBrakeHorsepower	Float	-	Units: bhp CondRequired input
	PumpEff	PumpEfficiency	Float	-	Units: frac Optional input
	BaseResWtrHtrRef	BaselineResidentialWaterHeaterReference	ObjectRef	-	Optional input
		ResWtrHtr			
	AnnualSolFrac	AnnualSolarFraction	Float	-	Units: frac Optional input
	Manufacturer	Manufacturer	String	-	Optional input
	SolFracFluidSysName	SolarFractionFluidSystemName	String	-	Optional input
	Brand	Brand	String	-	Optional input
	ModelNum	ModelNumber	String	-	Optional input
	SRRCertNum	SRRCertificationNumber	String	-	Optional input
	CollectorType	CollectorType	String	-	Optional input
	Area	Area	Float	-	Units: ft2 Optional input
	RatedEffCurveSlope	RatedEfficiencyCurveSlope	Float	-	Optional input
	RatedEffCurveIntercept	RatedEfficiencyCurveIntercept	Float	-	Optional input
	SolCollectorCnt	SolarCollectorCount	Integer	-	Optional input
	Fluid	Fluid	String	-	Optional input
	AngleFromTrueNorth	AngleFromTrueNorth	Float	-	Units: deg Optional input
	SlopeFromHorizontal	SlopeFromHorizontal	Float	-	Units: deg Optional input
	NameOfProgramUsed	NameOfProgramUsed	String	-	Optional input
	Version	Version	String	-	Optional input
	WtrHtrTankVol	WaterHeaterTankVolume	Float	-	Units: gal Optional input
	SecondaryTankVol	SecondaryTankVolume	Float	-	Units: gal Optional input
	NumOfIdenticalDwellingUnits	NumberOfIdenticalDwellingUnits	Integer	-	Optional input
	SolFracRpt	SolarFractionReport	Float	-	Optional input
	PlenumReport	PlenumReport	Float	-	Optional input
	OutsideReport	OutsideReport	Float	-	Optional input
	BuriedReport	BuriedReport	Float	-	Optional input
	SuppStorTankVol	SupplementalStorageTankVolume	Float	-	Units: gal Optional input
ADDED	CentralSysType	CentralSystemType default: -1 2: "HPWH" 1: "Other"	Enumeration	-	Optional input
	CentralHPWHCprsrType	CentralHPWHCompressorType default: -1	Enumeration	-	Optional input

	1: "Sanden"			
CentralHPWHLpTankVol	CentralHPWHLoopTankVolume	Float	- Units: gal	Optional input
CentralHPWHCprsrCnt	CentralHPWHCompressorCount	Integer	-	Optional input
CentralHPWHPriTankVol	CentralHPWHPrimaryTankVolume	Float	- Units: gal	Optional input
RecircPumpPwr	RecirculationPumpPower	Float	- Units: Watts	CondRequired input
DHWSolarSysRef	DHWSolarSystemReference	ObjectRef	-	Optional input
	DHWSolarSys			

CHANGED

DistType	DistributionType	Enumeration	-	CondRequired input
	default: 0			
	0: "No loops or central system pump"			
	5056: "No Control (continuous pumping)"			
	6336: "Demand Control"	Changed		
	6592: "Temperature modulation"			
	6848: "Temperature modulation and monitoring"			

ResWtrHtr ResidentialWaterHeater

ADDED

NonStdTankVol	NonStandardTankVolume	Float	- Units: gal	Optional input
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CHANGED

TankCat	TankCategory	Enumeration	-	Required input
	When: ResWtrHtr:ElementType = "Electric Resistance"			
	default: 3			
	2: "Instantaneous"			
	3: "Storage"			
	4: "Commercial Instantaneous (TE)"			
	5: "Commercial Storage (TE & SBL)"			
	When: ResWtrHtr:ElementType = "Heat Pump"			
	default: 3			
	3: "Storage"			
	else:			
	default: 3			
	0: "Boiler"			
	16: "Commercial Packaged Boiler"	New Option		
	1: "Indirect"			
	2: "Instantaneous"			
	3: "Storage"			
	4: "Commercial Instantaneous (TE)"			
	5: "Commercial Storage (TE & SBL)"			

DHWSolarSys

DHW Solar System

New Object Type

ADDED

Manufacturer

Manufacturer

Enumeration - Required input

default: 0

- 0: "- specify -"
- 1: "1st Sunflower Renewable Energy Co., Ltd"
- 2: "ACR Solar International"
- 3: "Advanced Thermal Solar, LLC"
- 4: "Agua Del Sol"
- 5: "Alternate Energy Technologies"
- 6: "Apricus Inc."
- 7: "Artic Solar, Inc."
- 8: "Bach Khoa Investment And Development Of Solar Energy Corporation"
- 9: "Baymak Group"
- 10: "Beijing Sunda Solar Energy Technology Co Ltd"
- 11: "Beijing Tianpu Solar Energy Industry Co."
- 12: "Bosch Thermotechnology Corp."
- 13: "Bronx Recycling Center Inc."
- 14: "Butler Sun Solutions, Inc."
- 15: "Caleffi Solar"
- 16: "Changzhou HE Jia Solar Energy Co., Ltd."
- 17: "China Hitek Solar Co., Ltd."
- 18: "Chromagen"
- 19: "Commercial Energy Savings Plus"
- 20: "Dehlsen Associates LLC."
- 21: "Dimas SA"
- 22: "Dimplex North America Ltd."
- 23: "Duda Energy"
- 24: "EarthNet Energy"
- 25: "EchoFirst Inc."
- 26: "Energetyka Solarna Ensol Sp. z O.O."
- 27: "Energy Conservation Products and Services"
- 28: "EnerWorks, Inc."
- 29: "Environmental Solar Systems"
- 30: "ergSol, Inc."
- 31: "Ezinc Metal Sanayi ve Ticaret A.S."
- 32: "First Solar Products, Inc."
- 33: "Gear Solar"
- 34: "GreenBase Inc"
- 35: "GREENoneTEC Solarindustrie GmbH"
- 36: "Guangdong Fivestar Solar Energy Co., Ltd"
- 37: "Gull Industries"
- 38: "Haining Meilu Solar Energy Water Heater Co., Ltd."
- 39: "Haining Oupairineng Solar Water Heater Co., Ltd"
- 40: "Haining Xianke Solar Energy Technology Co., Ltd."
- 41: "Heliokmi S.A."
- 42: "Heliodyne, Inc."
- 43: "HEWALEX Sp.z o.o. Sp.k."
- 44: "HTP, Inc."
- 45: "HUCU Solar Espana SL"
- 46: "Innosolar Energy Co., Ltd."
- 47: "Integrated Solar LLC"

48: "IREX Energy Stock Joint Company"
49: "Jiangsu Micoe Solar Energy Co., Ltd."
50: "Jiangsu Sunpower Solar Technology Co., Ltd"
51: "Jiangsu Sunrain Solar Energy Co. Ltd."
52: "Jiaxing Tjsun New Energy Co., Ltd."
53: "Kangnam Co., Ltd."
54: "KBB Kollektorbau"
55: "K-Cor, Inc."
56: "Kingspan Environmental Ltd."
57: "Kingspan Solar Inc."
58: "KIOTO Clear Energy S.A. de C.V."
59: "Kloben Sud S.r.l."
60: "Lochinvar, LLC"
61: "Magen Eco-Energy"
62: "Modern Market Inc."
63: "Modulo Solar SA de CV"
64: "Next Generation Energy, LLC"
65: "Nimrod Industries Ltd."
66: "NY Thermal Inc. (NTI)"
67: "Oventrop Corporation"
68: "Pacific West Solar"
69: "Papaemmanouel S.A."
70: "Photonomi Global Group"
71: "PIEP Solar Technology Co., Ltd."
72: "Power Panel Inc."
73: "R&R Solar Supply"
74: "Rheem Water Heaters"
75: "Ritter Energie - und Umwelttechnik GmbH & Co. KG"
76: "Roth Industries, Inc."
77: "Rural Renewable Energy Alliance"
78: "SAMMLER B MICHALOPOULOS AEBE"
79: "SEA Group Ltd."
80: "Shandong Linuo New Material Co. Ltd."
81: "Sichuan PiEP Solar Technology Co., Ltd."
82: "Silk Road Solar"
83: "SINSANE Co., Ltd."
84: "Solahart Industries"
85: "SolAqua, Inc."
86: "Solar America Solutions"
87: "Solar Coil, LLC"
88: "Solar Panels Plus"
89: "Solar Power Formulators"
90: "Solargenix Energy, LLC"
91: "Solarhot"
92: "Solcan / 174945 Ontario Inc."
93: "Sole S.A."
94: "Solene"
95: "Solight Solar Inc"
96: "Solimpeks Solar Energy Corp"
97: "Stiebel Eltron"
98: "Sun Freedom America, LLC"
99: "Sun Light & Power"
100: "SunEarth, Inc."
101: "SunMaxx Solar LLC"

- 102: "SunQest, Inc."
- 103: "Sunsiaray Solar Manufacturing, Inc."
- 104: "SunTrac Solar Inc."
- 105: "SunUP Solar Systems, Inc"
- 106: "Sunvapor, Inc."
- 107: "Sunvelope Solar"
- 108: "Surface Power"
- 109: "Tec-Solar Energy Industry Co., Ltd."
- 110: "Thermo Dynamics, Ltd."
- 111: "TIGI Ltd."
- 112: "Trigo Energies Inc."
- 113: "Tsinghua Solar Systems, Ltd."
- 114: "TSW Holding Corp."
- 115: "TVP Solar"
- 116: "UMA Solar"
- 117: "Universal Solar Products, Inc."
- 118: "Viessmann Manufacturing Company (US) Inc."
- 119: "Wagner Solar Inc."
- 120: "Westech Solar Technology Wuxi Co., Ltd."
- 121: "Your Home Tech., Ltd."
- 122: "Your Solar Home, Inc."
- 123: "Zhejiang Jiadele Solar Energy Co., Ltd."
- 124: "Zhejiang Shende New Energy Co.,Ltd."
- 125: "Zhejiang Shentai Solar Energy Co., Ltd."
- 126: "Zhejiang Sidite New Energy Co., Ltd."
- 127: "Zhejiang Yuanneng New Energy Co., Ltd."

Brand

Brand

Enumeration - Required input

- When: DHWSolarSys:Manufacturer = "- specify -"
 default: 0
 0: "- specify -"
- When: DHWSolarSys:Manufacturer = "1st Sunflower Renewable Energy Co., Ltd"
 default: 101
 101: "Soflower"
- When: DHWSolarSys:Manufacturer = "ACR Solar International"
 default: 201
 201: "Skyline"
- When: DHWSolarSys:Manufacturer = "Advanced Thermal Solar, LLC"
 default: 301
 301: "ATS"
- When: DHWSolarSys:Manufacturer = "Agua Del Sol"
 default: 401
 401: "Radco"
- When: DHWSolarSys:Manufacturer = "Alternate Energy Technologies"
 default: 0
 0: "- specify -"
 501: "AE Commercial"
 502: "Alternate Energy"
 503: "MorningStar"
- When: DHWSolarSys:Manufacturer = "Apricus Inc."
 default: 601
 601: "Apricus"
- When: DHWSolarSys:Manufacturer = "Artic Solar, Inc."
 default: 701
 701: "Emperor"

When: DHWSolarSys:Manufacturer = "Bach Khoa Investment And Development Of Solar Energy Corporation"
default: 801
801: "SolarBK"

When: DHWSolarSys:Manufacturer = "Baymak Group"
default: 901
901: "Baymak"

When: DHWSolarSys:Manufacturer = "Beijing Sunda Solar Energy Technology Co Ltd"
default: 0
0: "- specify -"
1001: "PG2.0-F/S"
1002: "SUNDA"

When: DHWSolarSys:Manufacturer = "Beijing Tianpu Solar Energy Industry Co."
default: 1101
1101: "Tianpu"

When: DHWSolarSys:Manufacturer = "Bosch Thermotechnology Corp."
default: 0
0: "- specify -"
1201: "Bosch"
1202: "Buderus"

When: DHWSolarSys:Manufacturer = "Bronx Recycling Center Inc."
default: 1301
1301: "PYROPEG"

When: DHWSolarSys:Manufacturer = "Butler Sun Solutions, Inc."
default: 1401
1401: "Butler"

When: DHWSolarSys:Manufacturer = "Caleffi Solar"
default: 0
0: "- specify -"
1501: "SolarFlat"
1502: "StarMax IV"
1503: "StarMax V"

When: DHWSolarSys:Manufacturer = "Changzhou HE Jia Solar Energy Co., Ltd."
default: 1601
1601: "HEJIASUN"

When: DHWSolarSys:Manufacturer = "China Hitek Solar Co., Ltd."
default: 0
0: "- specify -"
1701: "HITEK"
1702: "Hitek Solar"

When: DHWSolarSys:Manufacturer = "Chromagen"
default: 1801
1801: "Chromagen"

When: DHWSolarSys:Manufacturer = "Commercial Energy Savings Plus"
default: 1901
1901: "STC"

When: DHWSolarSys:Manufacturer = "Dehlsen Associates LLC."
default: 2001
2001: "ZLUZ"

When: DHWSolarSys:Manufacturer = "Dimas SA"
default: 2101
2101: "Dimas SA"

When: DHWSolarSys:Manufacturer = "Dimplex North America Ltd."
default: 2201
2201: "Dimplex"

When: DHWSolarSys:Manufacturer = "Duda Energy"
default: 2301
2301: "Duda Solar"

When: DHWSolarSys:Manufacturer = "EarthNet Energy"
default: 2401
2401: "EarthNet Energy"

When: DHWSolarSys:Manufacturer = "EchoFirst Inc."
default: 0
0: "- specify -"
2501: "Cleanline-Thermal"
2502: "Echo Building Integrated"
2503: "Echo Stanchioned"

When: DHWSolarSys:Manufacturer = "Energetyka Solarna Ensol Sp. z O.O."
default: 2601
2601: "Ensol Flat Plate Solar Collector"

When: DHWSolarSys:Manufacturer = "Energy Conservation Products and Services"
default: 2701
2701: "Solarway"

When: DHWSolarSys:Manufacturer = "EnerWorks, Inc."
default: 0
0: "- specify -"
2801: "Commercial Collector"
2802: "EnerWorks"
2803: "Residential Collector"
2804: "S-Power"

When: DHWSolarSys:Manufacturer = "Environmental Solar Systems"
default: 2901
2901: "Sun Mate"

When: DHWSolarSys:Manufacturer = "ergSol, Inc."
default: 3001
3001: "ergSol"

When: DHWSolarSys:Manufacturer = "Ezinc Metal Sanayi ve Ticaret A.S."
default: 3101
3101: "EZINC"

When: DHWSolarSys:Manufacturer = "First Solar Products, Inc."
default: 3201
3201: "SUNCHASER"

When: DHWSolarSys:Manufacturer = "Gear Solar"
default: 3301
3301: "GEAR Solar"

When: DHWSolarSys:Manufacturer = "GreenBase Inc"
default: 3401
3401: "GreenBase"

When: DHWSolarSys:Manufacturer = "GREENoneTEC Solarindustrie GmbH"
default: 0
0: "- specify -"
3501: "FK8209 TSA"
3502: "GREENoneTEC"

When: DHWSolarSys:Manufacturer = "Guangdong Fivestar Solar Energy Co., Ltd"
default: 3601
3601: "Fivestar"

When: DHWSolarSys:Manufacturer = "Gull Industries"
default: 3701
3701: "Gull"

When: DHWSolarSys:Manufacturer = "Haining Meilu Solar Energy Water Heater Co., Ltd."
default: 3801
3801: "HSMSC"

When: DHWSolarSys:Manufacturer = "Haining Oupairineng Solar Water Heater Co., Ltd"
default: 3901
3901: "ONOSI"

When: DHWSolarSys:Manufacturer = "Haining Xianke Solar Energy Technology Co., Ltd."
default: 4001
4001: "Xianke"

When: DHWSolarSys:Manufacturer = "Helioakmi S.A."
default: 4101
4101: "Megasun"

When: DHWSolarSys:Manufacturer = "Heliodyne, Inc."
default: 0
0: "- specify -"
4201: "GOBI"
4202: "GOBI HT"
4203: "VELUX"

When: DHWSolarSys:Manufacturer = "HEWALEX Sp.z o.o. Sp.k."
default: 4301
4301: "Hewalex"

When: DHWSolarSys:Manufacturer = "HTP, Inc."
default: 0
0: "- specify -"
4401: "HTP Evacuated Tube"
4402: "North Star"
4403: "Solar Skies"
4404: "Solar Spectrum"
4405: "SS Series"

When: DHWSolarSys:Manufacturer = "HUCU Solar Espana SL"
default: 4501
4501: "HUCUSOL"

When: DHWSolarSys:Manufacturer = "Innosolar Energy Co., Ltd."
default: 4601
4601: "Innosolar"

When: DHWSolarSys:Manufacturer = "Integrated Solar LLC"
default: 4701
4701: "Architectural Series"

When: DHWSolarSys:Manufacturer = "IREX Energy Stock Joint Company"
default: 4801
4801: "SolarBK"

When: DHWSolarSys:Manufacturer = "Jiangsu Micoe Solar Energy Co., Ltd."
default: 4901
4901: "Micoe"

When: DHWSolarSys:Manufacturer = "Jiangsu Sunpower Solar Technology Co., Ltd"
default: 5001
5001: "Sunpower"

When: DHWSolarSys:Manufacturer = "Jiangsu Sunrain Solar Energy Co. Ltd."
default: 5101
5101: "Sunrain"

When: DHWSolarSys:Manufacturer = "Jiaxing Tjsun New Energy Co., Ltd."
default: 5201
5201: "Tjsun"

When: DHWSolarSys:Manufacturer = "Kangnam Co., Ltd."

```
    default: 5301
    5301: "Kangnam"
When: DHWSolarSys:Manufacturer = "KBB Kollektorbau"
    default: 0
    0: "- specify -"
    5401: "KBB"
    5402: "KBB Kollektorbau"
When: DHWSolarSys:Manufacturer = "K-Cor, Inc."
    default: 5501
    5501: "K-cor Rocket Dome"
When: DHWSolarSys:Manufacturer = "Kingspan Environmental Ltd."
    default: 0
    0: "- specify -"
    5601: "Kingspan Solar"
    5602: "Kinspan Solar Flat Plate"
    5603: "Solamax"
    5604: "Thermomax"
When: DHWSolarSys:Manufacturer = "Kingspan Solar Inc."
    default: 0
    0: "- specify -"
    5701: "Flat Plate"
    5702: "KINGSPAN SOLAR"
    5703: "Kingspan Solar"
    5704: "Thermomax"
    5705: "Varisol"
When: DHWSolarSys:Manufacturer = "KIOTO Clear Energy S.A. de C.V."
    default: 0
    0: "- specify -"
    5801: "KIOTO Clear Energy"
    5802: "Kioto Clear Energy"
When: DHWSolarSys:Manufacturer = "Kloben Sud S.r.l."
    default: 0
    0: "- specify -"
    5901: "Solar Collectors Sky Pro 1500"
    5902: "Solar Collectors Sky Pro 1800"
When: DHWSolarSys:Manufacturer = "Lochinvar, LLC"
    default: 6001
    6001: "Lochinvar/TiSun"
When: DHWSolarSys:Manufacturer = "Magen Eco-Energy"
    default: 0
    0: "- specify -"
    6101: "eco - Flare PRO"
    6102: "eco - Spark"
    6103: "eco FLARE"
When: DHWSolarSys:Manufacturer = "Modern Market Inc."
    default: 6201
    6201: "Good Friend Solar Water Heater"
When: DHWSolarSys:Manufacturer = "Modulo Solar SA de CV"
    default: 0
    0: "- specify -"
    6301: "MAXOL FULL PLATE 2.0"
    6302: "Modulo Solar"
When: DHWSolarSys:Manufacturer = "Next Generation Energy, LLC"
    default: 6401
```


6401: "Next Generation Energy, LLC"
When: DHWSolarSys:Manufacturer = "Nimrod Industries Ltd."
default: 6501
6501: "Nimrod Industries Ltd."
When: DHWSolarSys:Manufacturer = "NY Thermal Inc. (NTI)"
default: 6601
6601: "NTI"
When: DHWSolarSys:Manufacturer = "Oventrop Corporation"
default: 0
0: "- specify -"
6701: "OKP"
6702: "Oventrop Corporation"
6703: "Oventrop Solar"
6704: "OVF-21"
6705: "OVF-32"
6706: "OVF-40"
When: DHWSolarSys:Manufacturer = "Pacific West Solar"
default: 6801
6801: "Freeze Safe"
When: DHWSolarSys:Manufacturer = "Papaemmanouel S.A."
default: 0
0: "- specify -"
6901: "Solar Flame"
6902: "SOLAR FLAME"
When: DHWSolarSys:Manufacturer = "Photonomi Global Group"
default: 7001
7001: "HONE"
When: DHWSolarSys:Manufacturer = "PIEP Solar Technology Co., Ltd."
default: 7101
7101: "PIEP"
When: DHWSolarSys:Manufacturer = "Power Panel Inc."
default: 7201
7201: "Power Panel"
When: DHWSolarSys:Manufacturer = "R&R Solar Supply"
default: 0
0: "- specify -"
7301: "SunPro"
7302: "SunStar"
When: DHWSolarSys:Manufacturer = "Rheem Water Heaters"
default: 7401
7401: "Rheem"
When: DHWSolarSys:Manufacturer = "Ritter Energie - und Umwelttechnik GmbH & Co. KG"
default: 7501
7501: "Ritter Solar"
When: DHWSolarSys:Manufacturer = "Roth Industries, Inc."
default: 0
0: "- specify -"
7601: "Roth"
7602: "Roth Heliostar"
7603: "ROTH R1"
When: DHWSolarSys:Manufacturer = "Rural Renewable Energy Alliance"
default: 7701
7701: "RREAL Solar Powered Furnace (SPF)"
When: DHWSolarSys:Manufacturer = "SAMMLER B MICHALOPOULOS AEBE"

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    default: 7801
    7801: "SAMMLER"
When: DHWSolarSys:Manufacturer = "SEA Group Ltd."
    default: 7901
    7901: "SEA"
When: DHWSolarSys:Manufacturer = "Shandong Linuo New Material Co. Ltd."
    default: 0
    0: "- specify -"
    8001: "LINUO SOLAR"
    8002: "Shandong Linuo New Material Co. Ltd."
When: DHWSolarSys:Manufacturer = "Sichuan PiEP Solar Technology Co., Ltd."
    default: 8101
    8101: "PIEP"
When: DHWSolarSys:Manufacturer = "Silk Road Solar"
    default: 8201
    8201: "Silk Road Solar"
When: DHWSolarSys:Manufacturer = "SINSANE Co., Ltd."
    default: 8301
    8301: "I-solar"
When: DHWSolarSys:Manufacturer = "Solahart Industries"
    default: 8401
    8401: "Solahart"
When: DHWSolarSys:Manufacturer = "SolAqua, Inc."
    default: 8501
    8501: "SHT"
When: DHWSolarSys:Manufacturer = "Solar America Solutions"
    default: 8601
    8601: "Solar America Solutions"
When: DHWSolarSys:Manufacturer = "Solar Coil, LLC"
    default: 8701
    8701: "Solar Coil (ICS)"
When: DHWSolarSys:Manufacturer = "Solar Panels Plus"
    default: 0
    0: "- specify -"
    8801: "Solar Panels Plus"
    8802: "Solar Panels Plus - Monarch 32"
    8803: "Solar Panels Plus - Monarch 40"
    8804: "Solar Panels Plus - Spartan 32"
    8805: "Solar Panels Plus - Spartan 40"
When: DHWSolarSys:Manufacturer = "Solar Power Formulators"
    default: 8901
    8901: "SPF"
When: DHWSolarSys:Manufacturer = "Solargenix Energy, LLC"
    default: 0
    0: "- specify -"
    9001: "NT-FLEX"
    9002: "Solargenix NT-24"
    9003: "Solargenix NT-48"
    9004: "Winston Series CPC"
When: DHWSolarSys:Manufacturer = "Solarhot"
    default: 0
    0: "- specify -"
    9101: "SOLARHOT"
    9102: "SOLARHOT Solstice"
```

When: DHWSolarSys:Manufacturer = "Solcan / 174945 Ontario Inc."
default: 9201
9201: "Solcan"

When: DHWSolarSys:Manufacturer = "Sole S.A."
default: 9301
9301: "Climasol"

When: DHWSolarSys:Manufacturer = "Solene"
default: 0
0: "- specify -"
9401: "AURORA"
9402: "Solene"
9403: "Solene EcoFLARE"
9404: "Solene-Corona"

When: DHWSolarSys:Manufacturer = "Solight Solar Inc"
default: 9501
9501: "Solight"

When: DHWSolarSys:Manufacturer = "Solimpeks Solar Energy Corp"
default: 0
0: "- specify -"
9601: "Marvel"
9602: "Wunder ALS"
9603: "Wunder CLSF"

When: DHWSolarSys:Manufacturer = "Stiebel Eltron"
default: 0
0: "- specify -"
9701: "Stiebel Eltron"
9702: "Stiebel Eltron, Inc"

When: DHWSolarSys:Manufacturer = "Sun Freedom America, LLC"
default: 9801
9801: "Sun Freedom America-SFA-4"

When: DHWSolarSys:Manufacturer = "Sun Light & Power"
default: 9901
9901: "Sol Vario"

When: DHWSolarSys:Manufacturer = "SunEarth, Inc."
default: 0
0: "- specify -"
10001: "Empire"
10002: "Imperial"
10003: "SunBelt"
10004: "ThermoRay"

When: DHWSolarSys:Manufacturer = "SunMaxx Solar LLC"
default: 0
0: "- specify -"
10101: "SunMaxx"
10102: "ThermoPower"
10103: "TitanPower"
10104: "TitanPowerPlus"

When: DHWSolarSys:Manufacturer = "SunQest, Inc."
default: 10201
10201: "Fresource"

When: DHWSolarSys:Manufacturer = "Sunsiaray Solar Manufacturing, Inc."
default: 10301
10301: "Northern Comfort"

When: DHWSolarSys:Manufacturer = "SunTrac Solar Inc."

```
    default: 10401
    10401: "SunTrac"
When: DHWSolarSys:Manufacturer = "SunUP Solar Systems, Inc"
    default: 10501
    10501: "SunUp"
When: DHWSolarSys:Manufacturer = "Sunvapor, Inc."
    default: 10601
    10601: "SUNVAPOR"
When: DHWSolarSys:Manufacturer = "Sunvelope Solar"
    default: 0
    0: "- specify -"
    10701: "SUNVELOPE SOLAR"
    10702: "Sunvelope Solar"
When: DHWSolarSys:Manufacturer = "Surface Power"
    default: 10801
    10801: "Surface Power"
When: DHWSolarSys:Manufacturer = "Tec-Solar Energy Industry Co., Ltd."
    default: 10901
    10901: "TecSolar"
When: DHWSolarSys:Manufacturer = "Thermo Dynamics, Ltd."
    default: 0
    0: "- specify -"
    11001: "Micro-Flo"
    11002: "Thermo Dynamics G Series"
When: DHWSolarSys:Manufacturer = "TIGI Ltd."
    default: 11101
    11101: "Honeycomb Collector"
When: DHWSolarSys:Manufacturer = "Trigo Energies Inc."
    default: 11201
    11201: "Trigo"
When: DHWSolarSys:Manufacturer = "Tsinghua Solar Systems, Ltd."
    default: 11301
    11301: "Tsinghua Solar"
When: DHWSolarSys:Manufacturer = "TSW Holding Corp."
    default: 11401
    11401: "TiSUN"
When: DHWSolarSys:Manufacturer = "TVP Solar"
    default: 11501
    11501: "MT-Power"
When: DHWSolarSys:Manufacturer = "UMA Solar"
    default: 11601
    11601: "Eco Spark"
When: DHWSolarSys:Manufacturer = "Universal Solar Products, Inc."
    default: 11701
    11701: "Universal Solar Products, Inc."
When: DHWSolarSys:Manufacturer = "Viessmann Manufacturing Company (US) Inc."
    default: 11801
    11801: "Vitosol"
When: DHWSolarSys:Manufacturer = "Wagner Solar Inc."
    default: 0
    0: "- specify -"
    11901: "Euro"
    11902: "EURO L20 AR"
    11903: "EURO L20 MQ AR"
```

```

When: DHWSolarSys:Manufacturer = "Westech Solar Technology Wuxi Co., Ltd."
      default: 12001
           12001: "Westech"
When: DHWSolarSys:Manufacturer = "Your Home Tech., Ltd."
      default: 12101
           12101: "YUHO"
When: DHWSolarSys:Manufacturer = "Your Solar Home, Inc."
      default: 12201
           12201: "SolarSheat"
When: DHWSolarSys:Manufacturer = "Zhejiang Jiadele Solar Energy Co., Ltd."
      default: 12301
           12301: "JIADELE"
When: DHWSolarSys:Manufacturer = "Zhejiang Shende New Energy Co.,Ltd."
      default: 12401
           12401: "DLL"
When: DHWSolarSys:Manufacturer = "Zhejiang Shentai Solar Energy Co., Ltd."
      default: 12501
           12501: "Suntask"
When: DHWSolarSys:Manufacturer = "Zhejiang Sidite New Energy Co., Ltd."
      default: 12601
           12601: "Sidite"
When: DHWSolarSys:Manufacturer = "Zhejiang Yuanneng New Energy Co., Ltd."
      default: 12701
           12701: "Younn"

```

Model

```

Model
When: DHWSolarSys:Brand = "- specify -"
      default: 0
           0: "- specify -"
When: DHWSolarSys:Brand = 101
      default: 0
           0: "- specify -"
           10101: "SF-B155818"
           10102: "SF-B185818"
           10103: "SF-B205818"
           10104: "SF-B225818"
           10105: "SF-B245818"
           10106: "SF-B305818"
When: DHWSolarSys:Brand = 201
      default: 0
           0: "- specify -"
           20101: "10-01"
           20102: "20-01"
When: DHWSolarSys:Brand = 301
      default: 0
           0: "- specify -"
           30101: "ATS-10"
           30102: "ATS-20"
           30103: "ATS-30"
When: DHWSolarSys:Brand = 401
      default: 0
           0: "- specify -"
           40101: "308C-HP"
           40102: "308P-HP"
           40103: "405C-HP"

```

Enumeration - Required input

```
40104: "405P-HP"
40105: "408C-HP"
40106: "408P-HP"
40107: "410C-HP"
40108: "410P-HP"
When: DHWSolarSys:Brand = 501
      default: 50101
          50101: "AEC-40"
When: DHWSolarSys:Brand = 502
      default: 0
          0: "- specify -"
          50201: "AE-18"
          50202: "AE-21"
          50203: "AE-24"
          50204: "AE-26"
          50205: "AE-32"
          50206: "AE-40T"
          50207: "AE-56"
When: DHWSolarSys:Brand = 503
      default: 0
          0: "- specify -"
          50301: "MS-21"
          50302: "MS-24"
          50303: "MS-26"
          50304: "MS-28"
          50305: "MS-32"
          50306: "MS-40"
          50307: "MSC-20"
          50308: "MSC-21"
          50309: "MSC-24"
          50310: "MSC-26"
          50311: "MSC-28"
          50312: "MSC-32"
          50313: "MSC-40"
When: DHWSolarSys:Brand = 601
      default: 0
          0: "- specify -"
          60101: "AP-10"
          60102: "AP-20"
          60103: "AP-30"
          60104: "AP-30C"
          60105: "ETC-10"
          60106: "ETC-20"
          60107: "ETC-30 / ETC-30C"
          60108: "FPC-A26"
          60109: "FPC-A32"
          60110: "FPC-A40"
When: DHWSolarSys:Brand = 701
      default: 70101
          70101: "LH-3-2M"
When: DHWSolarSys:Brand = 801
      default: 80101
          80101: "CFP-C-200"
When: DHWSolarSys:Brand = 901
```

```
    default: 0
      0: "- specify -"
      90101: "Advanced X"
      90102: "Advanced XL"
      90103: "Essential X"
      90104: "Essential XL"
When: DHWSolarSys:Brand = 1001
  default: 100101
  100101: "PG-F/S"
When: DHWSolarSys:Brand = 1002
  default: 0
    0: "- specify -"
    100201: "SEIDO 10-10AS/AB"
    100202: "SEIDO 10-20AS/AB"
    100203: "SEIDO 1-16"
    100204: "SEIDO 1-8"
    100205: "SEIDO 2-16"
    100206: "SEIDO 2-8"
    100207: "SEIDO 5-16 AS/AB"
    100208: "SEIDO 5-8 AS/AB"
    100209: "SEIDO1-16"
    100210: "SEIDO8-16"
When: DHWSolarSys:Brand = 1101
  default: 0
    0: "- specify -"
    110101: "TPH-15/18"
    110102: "TPH-20/18"
    110103: "TPH-24/18"
    110104: "TPH-25/18"
    110105: "TPH-28/18"
    110106: "TPH-30/18"
    110107: "TPH-36/18"
    110108: "TPU-10/18"
    110109: "TPU-12/18"
    110110: "TPU-14/18"
    110111: "TPU-15/18"
    110112: "TPU-16/18"
    110113: "TPU-18/18"
    110114: "TPU-20/18"
    110115: "TPU-24/18"
    110116: "TPU-25/18"
    110117: "TPU-28/18"
    110118: "TPU-30/18"
When: DHWSolarSys:Brand = 1201
  default: 0
    0: "- specify -"
    120101: "Bosch FKB-1 (Vert.)"
    120102: "Bosch FKC-1 s+w (Vert. & Horiz.)"
    120103: "Bosch FKT-1 s+w (Vert. & Horiz.)"
    120104: "FCC-1S"
When: DHWSolarSys:Brand = 1202
  default: 0
    0: "- specify -"
    120201: "Buderus SKN 3.0-s+w (Vert. & Horiz.)"
```

```
120202: "Buderus SKS 4.0-s+w (Vert. & Horiz.)"
When: DHWSolarSys:Brand = 1301
      default: 130101
           130101: "P-100"
When: DHWSolarSys:Brand = 1401
      default: 140101
           140101: "BT1"
When: DHWSolarSys:Brand = 1501
      default: 0
           0: "- specify -"
           150101: "NAS10406"
           150102: "NAS10406A"
           150103: "NAS10408"
           150104: "NAS10408A"
           150105: "NAS10410"
           150106: "NAS10410A"
When: DHWSolarSys:Brand = 1502
      default: 0
           0: "- specify -"
           150201: "NAS14406"
           150202: "NAS14408"
           150203: "NAS14410"
When: DHWSolarSys:Brand = 1503
      default: 0
           0: "- specify -"
           150301: "NAS15406"
           150302: "NAS15408"
           150303: "NAS15410"
When: DHWSolarSys:Brand = 1601
      default: 0
           0: "- specify -"
           160101: "HCA-58-18"
           160102: "HCA-58-20"
           160103: "HCA-58-24"
           160104: "HCA-58-30"
           160105: "HFC-2-S"
When: DHWSolarSys:Brand = 1701
      default: 0
           0: "- specify -"
           170101: "NSC-70-10"
           170102: "NSC-70-12"
           170103: "NSC-70-15"
           170104: "NSC-70-20"
When: DHWSolarSys:Brand = 1702
      default: 0
           0: "- specify -"
           170201: "NSC-58-10"
           170202: "NSC-58-12"
           170203: "NSC-58-16"
           170204: "NSC-58-20"
           170205: "NSC-58-22"
           170206: "NSC-58-24"
           170207: "NSC-58-30"
When: DHWSolarSys:Brand = 1801
```



```
default: 0
0: "- specify -"
180101: "CR-100-A-P"
180102: "CR-100-A-SP"
180103: "CR-100-BC"
180104: "CR-110-A-P"
180105: "CR-110-A-SP"
180106: "CR-110-BC"
180107: "CR-120-A-P"
180108: "CR-120-A-SP"
180109: "CR-120-BC"
180110: "CR-130-A-P"
180111: "CR-130-A-SP"
180112: "CR-130-BC"
180113: "CR-130-P"
180114: "CR-130-SP"
180115: "CR-140-A-P"
180116: "CR-140-BC"
180117: "CR-140-P"
180118: "CR-140-SP"
When: DHWSolarSys:Brand = 1901
default: 190101
190101: "STC100"
When: DHWSolarSys:Brand = 2001
default: 200101
200101: "1.0"
When: DHWSolarSys:Brand = 2101
default: 0
0: "- specify -"
210101: "Energy + ECO 15"
210102: "Energy + ECO 17"
210103: "Energy + ECO 19"
210104: "Energy + ECO 20"
210105: "Energy + ECO 23"
210106: "Energy + ECO 25"
210107: "Energy + EVO 15"
210108: "Energy + EVO 17"
210109: "Energy + EVO 19"
210110: "Energy + EVO 20"
210111: "Energy + EVO 23"
210112: "Energy + EVO 25"
210113: "ENERGY+ARGO 15"
210114: "ENERGY+ARGO 17"
210115: "ENERGY+ARGO 19"
210116: "ENERGY+ARGO 20"
210117: "ENERGY+ARGO 23"
210118: "ENERGY+ARGO 25"
210119: "SOL+20"
210120: "SOL+23"
210121: "SOL+25"
210122: "SOL+29"
When: DHWSolarSys:Brand = 2201
default: 220101
220101: "DSCA-2M"
```

```
When: DHWSolarSys:Brand = 2301
      default: 0
          0: "- specify -"
          230101: "SC5815"
          230102: "SC5820"
          230103: "SC5825"
          230104: "SC5830"
When: DHWSolarSys:Brand = 2401
      default: 0
          0: "- specify -"
          240101: "ENE 16"
          240102: "ENE 24"
When: DHWSolarSys:Brand = 2501
      default: 250101
          250101: "CL-T-370"
When: DHWSolarSys:Brand = 2502
      default: 0
          0: "- specify -"
          250201: "ECHO BI 2PV1T"
          250202: "ECHO BI 4PV2T"
When: DHWSolarSys:Brand = 2503
      default: 0
          0: "- specify -"
          250301: "ECHO SM 2PV1T"
          250302: "ECHO SM 4PV2T"
When: DHWSolarSys:Brand = 2601
      default: 0
          0: "- specify -"
          260101: "ES2V/2,65 Cu-Al"
          260102: "ES2V/2,65 Cu-Al"
When: DHWSolarSys:Brand = 2701
      default: 270101
          270101: "6000"
When: DHWSolarSys:Brand = 2801
      default: 280101
          280101: "COL-4X8-NL-SG1-SH10US"
When: DHWSolarSys:Brand = 2802
      default: 280201
          280201: "FH2500"
When: DHWSolarSys:Brand = 2803
      default: 280301
          280301: "COL-4x8-TL-SG1-SD10US"
When: DHWSolarSys:Brand = 2804
      default: 0
          0: "- specify -"
          280401: "HP 30/3000/R"
          280402: "S-Power 10/1000 TPS Inside"
          280403: "S-Power 20/2000 TPS Inside"
          280404: "S-Power 30/3000 TPS Inside"
When: DHWSolarSys:Brand = 2901
      default: 290101
          290101: "SM-14"
When: DHWSolarSys:Brand = 3001
      default: 0
```

```

0: "- specify -"
300101: "ergSol 100-6 df"
300102: "ergSol 202 df"
300103: "ergSol 202 hp"
300104: "ergSol 303 Dhp"
300105: "ergSol 303 hp"
300106: "ergSol 303df"
When: DHWSolarSys:Brand = 3101
default: 0
0: "- specify -"
310101: "Superline 3XL USB"
310102: "Superline 3XL USB-1"
310103: "Superline L USB"
310104: "Superline L USB-1"
310105: "Superline XXL USB"
310106: "Superline XXL USB-1"
When: DHWSolarSys:Brand = 3201
default: 0
0: "- specify -"
320101: "FSC016B"
320102: "FSC020B"
320103: "FSC030B"
When: DHWSolarSys:Brand = 3301
default: 0
0: "- specify -"
330101: "Solarpac TP12"
330102: "Solarpac TP24"
When: DHWSolarSys:Brand = 3401
default: 340101
340101: "SMP 2.1"
When: DHWSolarSys:Brand = 3501
default: 0
0: "- specify -"
350101: "FK8209N 3H TSA , FK8209N 4H TSA"
350102: "FK8209N 3H TSA , FK8209N 4H TSA"
When: DHWSolarSys:Brand = 3502
default: 0
0: "- specify -"
350201: "FK 9251 N / L"
350202: "FK7250L"
350203: "FK7250N"
350204: "GK 3102 FL"
350205: "GK 3102 FL-AR"
350206: "GK 3133"
350207: "GK 3133 S"
350208: "GK 3502 FL"
350209: "GK 3502 FL-AR"
350210: "GK 3803"
350211: "GK 3803 S"
When: DHWSolarSys:Brand = 3601
default: 0
0: "- specify -"
360101: "FP3.0-E"
360102: "FS-PTY95-2.0"

```

```
When: DHWSolarSys:Brand = 3701
      default: 370101
          370101: "5000"
When: DHWSolarSys:Brand = 3801
      default: 0
          0: "- specify -"
          380101: "HSMSC58/1800-15"
          380102: "HSMSC58/1800-18"
          380103: "HSMSC58/1800-20"
          380104: "HSMSC58/1800-24"
          380105: "HSMSC58/1800-30"
When: DHWSolarSys:Brand = 3901
      default: 0
          0: "- specify -"
          390101: "ONS58-15"
          390102: "ONS58-18"
          390103: "ONS58-20"
          390104: "ONS58-24"
When: DHWSolarSys:Brand = 4001
      default: 0
          0: "- specify -"
          400101: "XKPH58-15"
          400102: "XKPH58-20"
          400103: "XKPH58-25"
          400104: "XKPH58-30"
When: DHWSolarSys:Brand = 4101
      default: 0
          0: "- specify -"
          410101: "ST 2000 SELECTIVE"
          410102: "ST 2500 SELECTIVE"
When: DHWSolarSys:Brand = 4201
      default: 0
          0: "- specify -"
          420101: "336 001"
          420102: "404 001"
          420103: "406 001"
          420104: "406 002"
          420105: "408 001"
          420106: "408 002"
          420107: "410 001"
          420108: "410 001 Plus"
          420109: "410 002"
When: DHWSolarSys:Brand = 4202
      default: 0
          0: "- specify -"
          420201: "406 003"
          420202: "410 003"
When: DHWSolarSys:Brand = 4203
      default: 0
          0: "- specify -"
          420301: "CLI M08 5000"
          420302: "CLI S06 5000"
          420303: "CLI U12 5000"
When: DHWSolarSys:Brand = 4301
```

```
    default: 0
      0: "- specify -"
      430101: "KS2000 TP AC / TLP AC"
      430102: "KS2300 TP AC / TLP AC"
      430103: "KS2500 TP AC / TLP AC"
When: DHWSolarSys:Brand = 4401
    default: 440101
      440101: "HP-30SC"
When: DHWSolarSys:Brand = 4402
    default: 0
      0: "- specify -"
      440201: "NSC-21"
      440202: "NSC-24"
      440203: "NSC-26"
      440204: "NSC-26"
      440205: "NSC-28"
      440206: "NSC-32"
      440207: "NSC-32"
      440208: "NSC-40"
      440209: "NSC-40"
When: DHWSolarSys:Brand = 4403
    default: 0
      0: "- specify -"
      440301: "SS-21"
      440302: "SS-24"
      440303: "SS-26"
      440304: "SS-26"
      440305: "SS-26-FP"
      440306: "SS-28"
      440307: "SS-32"
      440308: "SS-32"
      440309: "SS-32-FP"
      440310: "SS-40"
      440311: "SS-40"
      440312: "SS-40-FP"
      440313: "SS-50"
When: DHWSolarSys:Brand = 4404
    default: 0
      0: "- specify -"
      440401: "FP-26SC"
      440402: "FP-32SC"
      440403: "FP-40SC"
When: DHWSolarSys:Brand = 4405
    default: 0
      0: "- specify -"
      440501: "SS-16"
      440502: "SS-18"
When: DHWSolarSys:Brand = 4501
    default: 450101
      450101: "10844 VP"
When: DHWSolarSys:Brand = 4601
    default: 460101
      460101: "CT Black"
When: DHWSolarSys:Brand = 4701
```

```
default: 0
0: "- specify -"
470101: "AS406C"
470102: "AS406P"
470103: "AS408C"
470104: "AS408P"
470105: "AS410C"
470106: "AS410P"
470107: "AS412C"
470108: "AS412P"
When: DHWSolarSys:Brand = 4801
default: 480101
480101: "CFP-C-200"
When: DHWSolarSys:Brand = 4901
default: 0
0: "- specify -"
490101: "FPC1200A"
490102: "FPC1200D"
490103: "SMG100-10"
490104: "SMG100-12"
490105: "SMG100-16"
490106: "SMG100-8"
490107: "SZ58/1800-10HA"
490108: "SZ58/1800-15HA"
490109: "SZ58/1800-20HA"
490110: "SZ58/1800-25HA"
490111: "SZ58/1800-30HA"
When: DHWSolarSys:Brand = 5001
default: 0
0: "- specify -"
500101: "SPA-58/1800-12"
500102: "SPA-58/1800-15"
500103: "SPA-58/1800-18"
500104: "SPA-58/1800-20"
500105: "SPA-58/1800-24"
500106: "SPA-58/1800-30"
When: DHWSolarSys:Brand = 5101
default: 0
0: "- specify -"
510101: "FPC1200D"
510102: "TZ47/1500-10U"
510103: "TZ47/1500-12U"
510104: "TZ47/1500-15U"
510105: "TZ47/1500-16U"
510106: "TZ47/1500-18U"
510107: "TZ47/1500-20U"
510108: "TZ47/1500-25U"
510109: "TZ47/1500-30U"
510110: "TZ58/1800-10R"
510111: "TZ58/1800-10R2"
510112: "TZ58/1800-15R"
510113: "TZ58/1800-15R2"
510114: "TZ58/1800-20R"
510115: "TZ58/1800-20R2"
```

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510116: "TZ58/1800-25R"  
510117: "TZ58/1800-25R2"  
510118: "TZ58/1800-30R"  
510119: "TZ58/1800-30R2"  
When: DHWSolarSys:Brand = 5201  
default: 0  
0: "- specify -"  
520101: "TJ-ZRG58/18A-12"  
520102: "TJ-ZRG58/18A-15"  
520103: "TJ-ZRG58/18A-18"  
520104: "TJ-ZRG58/18A-20"  
520105: "TJ-ZRG58/18A-24"  
520106: "TJ-ZRG58/18A-30"  
When: DHWSolarSys:Brand = 5301  
default: 530101  
530101: "KNSC-003.1"  
When: DHWSolarSys:Brand = 5401  
default: 0  
0: "- specify -"  
540101: "K420-MS-AL"  
540102: "K420-MS-A1"  
540103: "K423-MS-AL"  
540104: "K423-MS-A1"  
540105: "K425-MS-A1"  
540106: "K5-3Giga"  
540107: "K5-3Giga+"  
When: DHWSolarSys:Brand = 5402  
default: 540201  
540201: "K423-DH"  
When: DHWSolarSys:Brand = 5501  
default: 550101  
550101: "6-stc"  
When: DHWSolarSys:Brand = 5601  
default: 0  
0: "- specify -"  
560101: "FPW18U"  
560102: "FPW25U"  
When: DHWSolarSys:Brand = 5602  
default: 0  
0: "- specify -"  
560201: "FP200"  
560202: "FP240"  
When: DHWSolarSys:Brand = 5603  
default: 0  
0: "- specify -"  
560301: "AST20"  
560302: "AST30"  
560303: "AST50"  
560304: "AST70"  
560305: "AST80"  
When: DHWSolarSys:Brand = 5604  
default: 0  
0: "- specify -"  
560401: "CS-40"
```

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560402: "DF100-10"  
560403: "DF100-20"  
560404: "DF100-30"  
560405: "DF400-20"  
560406: "DF400-30"  
560407: "HP250-10"  
560408: "HP250-20"  
560409: "HP250-30"  
560410: "HP250-50"  
560411: "HP250-70"  
560412: "HP250-80"  
560413: "HP450RF-20"  
When: DHWSolarSys:Brand = 5701  
default: 570101  
570101: "FPW30U"  
When: DHWSolarSys:Brand = 5702  
default: 0  
0: "- specify -"  
570201: "FP200H"  
570202: "FP240H"  
When: DHWSolarSys:Brand = 5703  
default: 0  
0: "- specify -"  
570301: "FPW18"  
570302: "FPW25"  
570303: "FPW30"  
When: DHWSolarSys:Brand = 5704  
default: 0  
0: "- specify -"  
570401: "HP450-20"  
570402: "HP450-30"  
When: DHWSolarSys:Brand = 5705  
default: 570501  
570501: "Varisol DF"  
When: DHWSolarSys:Brand = 5801  
default: 0  
0: "- specify -"  
580101: "FP 1.20.0 HE sc"  
580102: "FP 1.20.0 LE sc"  
When: DHWSolarSys:Brand = 5802  
default: 0  
0: "- specify -"  
580201: "FP 7.25.0 H"  
580202: "FP 7.25.0 V"  
When: DHWSolarSys:Brand = 5901  
default: 0  
0: "- specify -"  
590101: "SKY PRO 10L CPC 58"  
590102: "SKY PRO 12L CPC 58"  
590103: "SKY PRO 14L CPC 58"  
590104: "SKY PRO 16L CPC 58"  
590105: "SKY PRO 18L CPC 58"  
590106: "SKY PRO 20L CPC 58"  
590107: "SKY PRO 8L CPC 58"
```



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When: DHWSolarSys:Brand = 5902
default: 0
0: "- specify -"
590201: "SKY PRO 10 CPC 58"
590202: "SKY PRO 12 CPC 58"
590203: "SKY PRO 14 CPC 58"
590204: "SKY PRO 16 CPC 58"
590205: "SKY PRO 18 CPC 58"
590206: "SKY PRO 20 CPC 58"
590207: "SKY PRO 22 CPC 58"
When: DHWSolarSys:Brand = 6001
default: 0
0: "- specify -"
600101: "SCH065"
600102: "SCH090"
600103: "SCH110"
600104: "SCH130"
600105: "SLV030 / SLH030"
When: DHWSolarSys:Brand = 6101
default: 610101
610101: "eco - Flare PRO"
When: DHWSolarSys:Brand = 6102
default: 0
0: "- specify -"
610201: "Spark 30"
610202: "Spark 40"
When: DHWSolarSys:Brand = 6103
default: 610301
610301: "3M"
When: DHWSolarSys:Brand = 6201
default: 620101
620101: "GD150-25"
When: DHWSolarSys:Brand = 6301
default: 630101
630101: "FP 1.20.0 LE sc"
When: DHWSolarSys:Brand = 6302
default: 630201
630201: "Maxol MS 2.5"
When: DHWSolarSys:Brand = 6401
default: 0
0: "- specify -"
640101: "NGE-216-TU"
640102: "NGE-224-TU"
When: DHWSolarSys:Brand = 6501
default: 0
0: "- specify -"
650101: "NIM15"
650102: "NIM21"
650103: "NIM23"
650104: "NIM25"
When: DHWSolarSys:Brand = 6601
default: 660101
660101: "SRT-215"
When: DHWSolarSys:Brand = 6701
```

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        default: 0
        0: "- specify -"
        670101: "OKP-10"
        670102: "OKP-20"
When: DHWSolarSys:Brand = 6702
        default: 0
        0: "- specify -"
        670201: "540 00 18-LI"
        670202: "540 00 18-TT"
When: DHWSolarSys:Brand = 6703
        default: 0
        0: "- specify -"
        670301: "OV 10-10 AS/AB"
        670302: "OV 10-20 AS/AB"
        670303: "OV 5-16 AS/AB"
        670304: "OV 5-24 AS/AB"
        670305: "OV 5-8 AS/AB"
When: DHWSolarSys:Brand = 6704
        default: 670401
        670401: "5400307"
When: DHWSolarSys:Brand = 6705
        default: 670501
        670501: "5400408"
When: DHWSolarSys:Brand = 6706
        default: 670601
        670601: "5400410"
When: DHWSolarSys:Brand = 6801
        default: 680101
        680101: "FS410"
When: DHWSolarSys:Brand = 6901
        default: 0
        0: "- specify -"
        690101: "ASL0580.S86RS-1.5m2"
        690102: "ASL0580.S86RS-1.82m2"
        690103: "ASL0580.S86RS-2.0m2"
        690104: "ASL0580.S86RS-2.37m2"
        690105: "ASL0580.S86RS-2.72m2"
When: DHWSolarSys:Brand = 6902
        default: 0
        0: "- specify -"
        690201: "US-SOL_2.72m2"
        690202: "US-SOL_2.72m2 HORIZONTAL"
When: DHWSolarSys:Brand = 7001
        default: 700101
        700101: "501 Gen 5"
When: DHWSolarSys:Brand = 7101
        default: 710101
        710101: "PIEP1020-N01A"
When: DHWSolarSys:Brand = 7201
        default: 0
        0: "- specify -"
        720101: "MODEL T1"
        720102: "PVT1"
When: DHWSolarSys:Brand = 7301
    
```

```
    default: 0
      0: "- specify -"
      730101: "SunPro21"
      730102: "SunPro24"
      730103: "SunPro40"
When: DHWSolarSys:Brand = 7302
    default: 730201
      730201: "SS-40T"
When: DHWSolarSys:Brand = 7401
    default: 0
      0: "- specify -"
      740101: "RS21-BC"
      740102: "RS21-BP"
      740103: "RS21-SC"
      740104: "RS24-BC"
      740105: "RS24-BP"
      740106: "RS32-BC"
      740107: "RS32-BP"
      740108: "RS40-BC"
      740109: "RS40-BP"
When: DHWSolarSys:Brand = 7501
    default: 0
      0: "- specify -"
      750101: "CPC 12 INOX"
      750102: "CPC 12 OEM"
      750103: "CPC 12 XL INOX"
      750104: "CPC 14 Star Azzurro / CPC 14 OEM MONO"
      750105: "CPC 16 w INOX"
      750106: "CPC 18 INOX"
      750107: "CPC 18 OEM"
      750108: "CPC 20 w INOX"
      750109: "CPC 21 Star Azzurro / CPC 21 OEM MONO"
      750110: "CPC 30 Star Azzurro / CPC 30 OEM MONO"
      750111: "CPC 32 Allstar"
      750112: "CPC 40 Allstar"
      750113: "CPC 45 Star Azzurro / CPC 45 OEM MONO"
      750114: "CPC 6 INOX"
      750115: "CPC 6 OEM"
      750116: "CPC 6 XL INOX"
      750117: "OEM 21"
When: DHWSolarSys:Brand = 7601
    default: 760101
      760101: "Heliostar 252"
When: DHWSolarSys:Brand = 7602
    default: 760201
      760201: "252 S4"
When: DHWSolarSys:Brand = 7603
    default: 760301
      760301: "ROTH R1"
When: DHWSolarSys:Brand = 7701
    default: 0
      0: "- specify -"
      770101: "SPF 26"
      770102: "SPF 32"
```

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770103: "SPF 40"
When: DHWSolarSys:Brand = 7801
      default: 0
          0: "- specify -"
          780101: "ARIS2004"
          780102: "ARIS2504"
When: DHWSolarSys:Brand = 7901
      default: 790101
          790101: "SEA-FZ58-18"
When: DHWSolarSys:Brand = 8001
      default: 0
          0: "- specify -"
          800101: "LN-RG-WF-1.0/10-58/1800-B1"
          800102: "LN-RG-WF-1.8/18-58/1800-B1"
          800103: "LN-RG-WF-2.0/20-58/1800-B1"
          800104: "LN-RG-WF-2.4/24-58/1800-B1"
          800105: "LN-RG-WF-2.5/25-58/1800-B1"
          800106: "LN-RG-WF-3.0/30-58/1800-B1"
When: DHWSolarSys:Brand = 8002
      default: 800201
          800201: "LN-RG-WF-1.6/16-47-1500-A"
When: DHWSolarSys:Brand = 8101
      default: 810101
          810101: "PIEP4896-S01A"
When: DHWSolarSys:Brand = 8201
      default: 0
          0: "- specify -"
          820101: "Sapphire"
          820102: "Sol Duc"
When: DHWSolarSys:Brand = 8301
      default: 830101
          830101: "SSN65-12"
When: DHWSolarSys:Brand = 8401
      default: 0
          0: "- specify -"
          840101: "APA2007"
          840102: "Bt"
          840103: "Bt (laser welded)"
          840104: "Bt, ( laser welded )"
          840105: "CSA2007"
          840106: "CSA2010"
          840107: "CSA2013"
          840108: "J"
          840109: "Kf"
          840110: "L"
          840111: "LC"
          840112: "LCS"
          840113: "SCA2000"
          840114: "SPA2000"
When: DHWSolarSys:Brand = 8501
      default: 0
          0: "- specify -"
          850101: "2000A"
          850102: "2000B"
```

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      850103: "2000H"
      850104: "4X10A"
      850105: "4X10B"
      850106: "4X10H"
When: DHWSolarSys:Brand = 8601
      default: 860101
      860101: "SunQuest 250"
When: DHWSolarSys:Brand = 8701
      default: 870101
      870101: "SC092809BK"
When: DHWSolarSys:Brand = 8801
      default: 0
      0: "- specify -"
      880101: "SPP-22"
      880102: "SPP-25"
      880103: "SPP-30"
      880104: "SPP-30A"
When: DHWSolarSys:Brand = 8802
      default: 880201
      880201: "SPP-Monarch-32"
When: DHWSolarSys:Brand = 8803
      default: 880301
      880301: "SPP-Monarch-40"
When: DHWSolarSys:Brand = 8804
      default: 880401
      880401: "SPP-Spartan-32"
When: DHWSolarSys:Brand = 8805
      default: 880501
      880501: "SPP-Spartan-40"
When: DHWSolarSys:Brand = 8901
      default: 890101
      890101: "SPF-ET20HP"
When: DHWSolarSys:Brand = 9001
      default: 900101
      900101: "NTFLEX10"
When: DHWSolarSys:Brand = 9002
      default: 900201
      900201: "NT-24-10"
When: DHWSolarSys:Brand = 9003
      default: 900301
      900301: "NT-48-10"
When: DHWSolarSys:Brand = 9004
      default: 900401
      900401: "WS0503"
When: DHWSolarSys:Brand = 9101
      default: 0
      0: "- specify -"
      910101: "S-C-771D26"
      910102: "S-C-771D32"
      910103: "S-C-771D40"
When: DHWSolarSys:Brand = 9102
      default: 0
      0: "- specify -"
      910201: "S-SC-126S26"
```

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910202: "S-SC-126S32"
910203: "S-SC-126S40"
When: DHWSolarSys:Brand = 9201
      default: 920101
          920101: "2101"
When: DHWSolarSys:Brand = 9301
      default: 0
          0: "- specify -"
          930101: "Climasol 1.75"
          930102: "Climasol 2.00"
          930103: "Climasol 2.50"
          930104: "Climasol 2.70"
When: DHWSolarSys:Brand = 9401
      default: 0
          0: "- specify -"
          940101: "SLAR-24"
          940102: "SLAR-24SPA"
          940103: "SLAR-32"
          940104: "SLAR-32P"
          940105: "SLAR-32SPA"
          940106: "SLAR-40"
          940107: "SLAR-40P"
          940108: "SLAR-40SPA"
When: DHWSolarSys:Brand = 9402
      default: 0
          0: "- specify -"
          940201: "SLAR-24"
          940202: "SLAR-32"
          940203: "SLAR-40"
          940204: "SLSG-40"
          940205: "SLSG-40 PLUS"
When: DHWSolarSys:Brand = 9403
      default: 940301
          940301: "SLEF-24"
When: DHWSolarSys:Brand = 9404
      default: 0
          0: "- specify -"
          940401: "SLCO-30"
          940402: "SLCO-32"
          940403: "SLCO-32P"
          940404: "SLCO-40"
          940405: "SLCO-40P"
When: DHWSolarSys:Brand = 9501
      default: 950101
          950101: "44"
When: DHWSolarSys:Brand = 9601
      default: 0
          0: "- specify -"
          960101: "CLS 1808"
          960102: "CLS 2510"
When: DHWSolarSys:Brand = 9602
      default: 0
          0: "- specify -"
          960201: "1809"
```

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960202: "2110"  
960203: "2512"  
960204: "3010"  
When: DHWSolarSys:Brand = 9603  
default: 0  
0: "- specify -"  
960301: "1808"  
960302: "2108"  
960303: "2510"  
960304: "3010"  
When: DHWSolarSys:Brand = 9701  
default: 0  
0: "- specify -"  
970101: "Sol 25 Plus"  
970102: "SOL 27 Premium S"  
970103: "SOL 27 Premium W"  
When: DHWSolarSys:Brand = 9702  
default: 970201  
970201: "Sol 29 Premium S/W"  
When: DHWSolarSys:Brand = 9801  
default: 980101  
980101: "TAL 4 S"  
When: DHWSolarSys:Brand = 9901  
default: 0  
0: "- specify -"  
990101: "1000 DF"  
990102: "2000 DF"  
990103: "3000 DF"  
When: DHWSolarSys:Brand = "Empire"  
default: 0  
0: "- specify -"  
1000101: "EC-21"  
1000102: "EC-24 / EC-24-0.75"  
1000103: "EC-32 / EC-32-0.75"  
1000104: "EC-32-1.5"  
1000105: "EC-40 / EC-40-0.75"  
1000106: "EC-40-1.5"  
1000107: "EP-21"  
1000108: "EP-24 / EP-24-0.75"  
1000109: "EP-32 / EP-32-0.75"  
1000110: "EP-32-1.5"  
1000111: "EP-40 / EP-40-0.75"  
1000112: "EP-40-1.5"  
When: DHWSolarSys:Brand = "Imperial"  
default: 0  
0: "- specify -"  
1000201: "IC-32"  
1000202: "IC-40"  
1000203: "IS-32"  
1000204: "IS-40"  
When: DHWSolarSys:Brand = "SunBelt"  
default: 0  
0: "- specify -"  
1000301: "SB-24-0.75"
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1000302: "SB-32-0.75"
1000303: "SB-40-0.75"
When: DHWSolarSys:Brand = "ThermoRay"
default: 0
0: "- specify -"
1000401: "TRB-26"
1000402: "TRB-32"
1000403: "TRB-40"
When: DHWSolarSys:Brand = 10101
default: 1010101
1010101: "TitanPower-AL2"
When: DHWSolarSys:Brand = 10102
default: 0
0: "- specify -"
1010201: "ThermoPower UDF10"
1010202: "ThermoPower UDF20"
1010203: "ThermoPower UDF30"
1010204: "ThermoPower VHP20"
1010205: "ThermoPower VHP30"
When: DHWSolarSys:Brand = 10103
default: 0
0: "- specify -"
1010301: "TitanPower-ALDH29"
1010302: "TitanPower-ALDH29-27A"
1010303: "TitanPower-ALDH29-A"
1010304: "TitanPower-ALDH40-PS"
When: DHWSolarSys:Brand = 10104
default: 0
0: "- specify -"
1010401: "TitanPowerPlus-ALDH29P"
1010402: "TitanPowerPlus-ALDH29-V3"
When: DHWSolarSys:Brand = 10201
default: 0
0: "- specify -"
1020101: "G32"
1020102: "G40"
1020103: "T32"
1020104: "T40"
1020105: "T48"
1020106: "T56"
When: DHWSolarSys:Brand = 10301
default: 1030101
1030101: "NC-32"
When: DHWSolarSys:Brand = 10401
default: 1040101
1040101: "SunTrac27"
When: DHWSolarSys:Brand = 10501
default: 0
0: "- specify -"
1050101: "HP408"
1050102: "HP408C"
1050103: "HP408Cu"
1050104: "HP410"
1050105: "HP410C"

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1050106: "HP410Cu"
When: DHWSolarSys:Brand = 10601
default: 1060101
1060101: "SRT-13S"
When: DHWSolarSys:Brand = 10701
default: 1070101
1070101: "FPE-17"
When: DHWSolarSys:Brand = 10702
default: 0
0: "- specify -"
1070201: "FPE-21"
1070202: "FPE-30"
When: DHWSolarSys:Brand = 10801
default: 1080101
1080101: "SP501"
When: DHWSolarSys:Brand = 10901
default: 0
0: "- specify -"
1090101: "TS-10-58PA"
1090102: "TS-10-70PA"
1090103: "TS-20-58PA"
1090104: "TS-20-70PA"
1090105: "TS-22-58PA"
1090106: "TS-24-58PA"
1090107: "TS-30-58PA"
When: DHWSolarSys:Brand = 11001
default: 1100101
1100101: "S32-P"
When: DHWSolarSys:Brand = 11002
default: 1100201
1100201: "G32-P"
When: DHWSolarSys:Brand = 11101
default: 1110101
1110101: "HCl-A"
When: DHWSolarSys:Brand = 11201
default: 0
0: "- specify -"
1120101: "Acero"
1120102: "Acero GL"
1120103: "Fresco"
1120104: "Fresco GL"
When: DHWSolarSys:Brand = 11301
default: 0
0: "- specify -"
1130101: "SLU-1500/12"
1130102: "SLU-1800/24"
When: DHWSolarSys:Brand = 11401
default: 0
0: "- specify -"
1140101: "FA 2/3"
1140102: "FA 2/4"
1140103: "FA 2/5"
1140104: "FA 2/6"
1140105: "FM-W/S 4"
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When: DHWSolarSys:Brand = 11501
      default: 1150101
           1150101: "v4"
When: DHWSolarSys:Brand = 11601
      default: 0
           0: "- specify -"
           1160101: "SLES-30"
           1160102: "SLES-40"
When: DHWSolarSys:Brand = 11701
      default: 1170101
           1170101: "USP-519"
When: DHWSolarSys:Brand = 11801
      default: 0
           0: "- specify -"
           1180101: "100-F, SV1/SH1"
           1180102: "100-FM SH1F"
           1180103: "100-FM SV1F"
           1180104: "100-FM SVKF"
           1180105: "200-F Sv2C/SH2C"
           1180106: "200-F SVK"
           1180107: "200-FM SH2F"
           1180108: "200-FM SV2F"
           1180109: "200-T SP2A - 1.26"
           1180110: "200-T SP2A - 1.51"
           1180111: "200-T SP2A - 3.03"
           1180112: "200-T SPE - 1.63"
           1180113: "200-T SPE - 3.26"
           1180114: "300-T, SP3 -2m2"
           1180115: "300-T, SP3 -3m2"
When: DHWSolarSys:Brand = 11901
      default: 1190101
           1190101: "Euro L42 HTF"
When: DHWSolarSys:Brand = 11902
      default: 1190201
           1190201: "EURO L20 AR"
When: DHWSolarSys:Brand = 11903
      default: 1190301
           1190301: "L20 MQ AR"
When: DHWSolarSys:Brand = 12001
      default: 0
           0: "- specify -"
           1200101: "WT-B58-10"
           1200102: "WT-B58-15"
           1200103: "WT-B58-20"
           1200104: "WT-B58-24"
           1200105: "WT-B58-30"
When: DHWSolarSys:Brand = 12101
      default: 0
           0: "- specify -"
           1210101: "HP-2010"
           1210102: "HP-2012"
           1210103: "HP-2014"
When: DHWSolarSys:Brand = 12201
      default: 0
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0: "- specify -"
1220101: "1000G"
1220102: "1000GS"
1220103: "1500G"
1220104: "1500GS"
When: DHWSolarSys:Brand = 12301
default: 0
0: "- specify -"
1230101: "JDL-PM10-58-1.8A"
1230102: "JDL-PM15-58-1.8A"
1230103: "JDL-PM18-58-1.8A"
1230104: "JDL-PM20-58-1.8A"
1230105: "JDL-PM25-58-1.8A"
1230106: "JDL-PM30-58-1.8A"
1230107: "JDL-PM36-58-1.8A"
When: DHWSolarSys:Brand = 12401
default: 0
0: "- specify -"
1240101: "DLL-C-P01-15"
1240102: "DLL-C-P01-20"
1240103: "DLL-C-P01-30"
When: DHWSolarSys:Brand = 12501
default: 0
0: "- specify -"
1250101: "SR10"
1250102: "SR15"
1250103: "SR20"
1250104: "SR30"
When: DHWSolarSys:Brand = 12601
default: 0
0: "- specify -"
1260101: "SC-H-10"
1260102: "SC-H-15"
1260103: "SC-H-18"
1260104: "SC-H-20"
1260105: "SC-H-24"
1260106: "SC-H-30"
When: DHWSolarSys:Brand = 12701
default: 0
0: "- specify -"
1270101: "YN58-10"
1270102: "YN58-15"
1270103: "YN58-20"
1270104: "YN58-25"
1270105: "YN58-30"

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Cnt	Count	Integer	-	Defaulted input
Az	Azimuth	Float	- Units: deg	Required input
Tilt	Tilt	Float	- Units: deg	Required input
TankVol	TankVolume	Float	- Units: gal	Optional input