

General results cooling

No. of sources	1
Total number of terminal units	46
Total number of pipe-runs	22
Total number of manifolds	5
Total number of pumps	0
Total declared heat gain in room Φ_c	26442 W
Spec. total required output of other TU's	0 W
Spec. total rooms req. output Φ_{req}	21472 W
Calculation standards:	
Radiant cooling calculation standard	EN 1264: 1:2011 2:2013 3,4:2009 5:2008
Wall and ceiling panels calculation standard	EN 14240

Source: Other (hor.): P-38, Application: Heating systems/Cooling systems, Medium: Water

Source elevation	0,0 m
Supply and return temperature	19,0 / 22,9 °C
Total output	8620 W
Total output of convection terminal units $\Phi_{conv,C}$	0 W
Total output of radiant terminal units $\Phi_{rad,C}$	8471 W
Total output of other terminal units	0 W
Cold gains from pipe-runs accounted in thermal balance	0 W
Unused cold loss of pipe-runs	62 W
Losses of radiant systems to outside of source feed area	149 W
Losses of radiant systems within source feed area	0 W
Available pressure	37,0 kPa
Pressure drop along critical route	37,0 kPa
Pressure drop on critical terminal unit	22,7 kPa
Press. drop on source	0,0 kPa
Flow rate in source	2223,0 kg/h
Critical receptor: P-1_a	
Critical TU route length	140,1 m
Capacity of system incl. terminal units	629,17 dm³

List of rooms - cooling

Room Symbol	Room surface area	Thermal resistance of covering	Design room temperature	Required output of cooling	Required specific output of cooling function	Required radiant cooling output	Required convection cooling output	Obtained radiant cooling output	Obtained convection cooling output	Coverage of required cooling output
Room	A	R _{λ,B}	θ _{i,C}	Φ _{req,C}	q _{req,C}	Φ _{req,rad,C}	Φ _{req,conv,C}	Φ _{rh,C}	Φ _{conv,C}	% Φ _{req,C}
	m ²	(m ² ·K)/W	°C	W	W/m ²	W	W	W	W	%

Storey: 0, Elevation 0 m

Bld. unit: 01

P-1	49,00	0,040	26,0	1470	30	1470		819	0	56
P-10	19,02	0,040	26,0	571	30	571		124	0	22
P-17,18	9,53	0,011	26,0	286	30	286		164	0	58
P-19	12,41	0,100	26,0	372	30	372		171	0	46
P-2	18,97	0,011	26,0	569	30	569		370	0	65
P-20,21,22	116,34	0,040	26,0	3490	30	3490		1202	0	34
P-23	11,32	0,040	26,0	340	30	340		101	0	30
P-24	30,88	0,040	26,0	927	30	927		389	0	42
P-24	4,95	0,011	26,0	149	30	149		58	0	39
P-25	3,22	0,011	26,0	97	30	97		12	0	12
P-26	4,10	0,011	26,0	123	30	123		13	0	11
P-28	4,00	0,011	26,0	120	30	120		103	0	86
P-3	49,09	0,040	26,0	1473	30	1473		700	0	48
P-30,31	41,04	0,040	26,0	1231	30	1231		598	0	49
P-32	49,19	0,040	26,0	1476	30	1476		697	0	47
P-33	19,07	0,011	26,0	572	30	572		349	0	61
P-34	48,69	0,040	26,0	1461	30	1461		757	0	52
P-37	7,80	0,011	26,0	234	30	234		163	0	70
P-4,5	35,47	0,040	26,0	1064	30	1064		314	0	30
P-6	7,34	0,011	26,0	220	30	220		135	0	61

Room	A	R _{λ,B}	θ _{i,C}	Φ _{req,C}	q _{req,C}	Φ _{req,rad,C}	Φ _{req,conv,C}	Φ _{rh,C}	Φ _{conv,C}	% Φ _{req,C}
	m ²	(m ² ·K)/W	°C	W	W/m ²	W	W	W	W	%

P-9	3,98	0,011	26,0	119	30	119		103	0	86
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Storey: 1, Elevation 3,6 m
Bld. unit: 01

N-10	11,25	0,100	26,0	337	30	337		162	0	48
N-12	4,68	0,100	26,0	140	30	140		16	0	11
N-13	4,32	0,100	26,0	130	30	130		54	0	42
N-4,5,6	11,45	0,100	26,0	344	30	344		184	0	54
N-7,8,14	138,62	0,100	26,0	4159	30	4159		712	0	17