

Z.U.O. "EKO - SOFT"
Łódź ul. Rogozińskiego 17/7
tel. 042 648 71 85

HAŁAS PRZEMYSŁOWY i DROGOWY
PROGRAM SON2 WERSJA 5.424

Właściciel licencji: NOVUM PROJEKT Norbert Piróg
ul. Planetarna 21C/4, Żalasewo 62-020 Swarzędz
Licencja nr NP/62020/Spd/21 z dnia 14.05.2021

DANE WEJŚCIOWE

Rodzaj obliczeń: Poziom hałasu równoważnego

1. Nazwa projektu:
2. Temperatura powietrza [st C.] = 10
3. Wilgotność względna powietrza [%] = 70
4. Tło akustyczne dB(A):
 Pora dnia : 0.0
 Pora nocy : 0.0
5. Rodzaj gruntu : grunt porowaty, wskaźnik gruntu G = 1
6. Punktowe źródła hałasu

Lp	Symbol	Współrzędne źródła			ht	Rodzaj źródła	LAW	tD	tN	Do
		x	y	z						
		m	m	m	m		dB(A)	h	h	dB
1	ZP 1	212.4	205.4	1.5	0.0	wszechkier.	68.0	8.000	1.000	3
2	ZP 2	235.3	199.6	1.5	0.0	wszechkier.	68.0	8.000	1.000	3
3	ZP 3	258.6	194.9	1.5	0.0	wszechkier.	68.0	8.000	1.000	3
4	ZP 4	281.5	190.3	1.5	0.0	wszechkier.	68.0	8.000	1.000	3
5	ZP 5	307.6	185.2	1.5	0.0	wszechkier.	68.0	8.000	1.000	3
6	ZP 6	288.5	136.7	1.5	0.0	wszechkier.	68.0	8.000	1.000	3
7	ZP 7	264.8	141.0	1.5	0.0	wszechkier.	68.0	8.000	1.000	3
8	ZP 8	241.5	145.6	1.5	0.0	wszechkier.	68.0	8.000	1.000	3
9	ZP 9	217.9	149.9	1.5	0.0	wszechkier.	68.0	8.000	1.000	3
10	ZP 10	194.2	152.6	1.5	0.0	wszechkier.	68.0	8.000	1.000	3

7. Liniowe źródła hałasu

Lp	Symbol	Początek			ht	Koniec			LAW 8hD	LAW 1hN	D0
		x1	y1	z1		x2	y2	z2			
		m	m	m	m	m	m	m	dB(A)	dB(A)	dB
1	T1	309.9	158.4	0.0	0.0	262.1	168.1	0.0	0.0	64.5	69.5
2	T2	262.1	168.1	0.0	0.0	199.6	180.6	0.0	0.0	65.0	71.3

z - wysokość źródła nad gruntem ; ht - wysokość gruntu względem płaszczyzny odniesienia
LAW - poziom mocy akustycznej źródła nominalny
tD - czas pracy źródła w przedziale 8 kolejnych najmniej korzystnych godzin dnia
tN - czas pracy źródła w przedziale 1 najmniej korzystnej godziny nocy

LAW 8hD - równoważny poziom mocy akustycznej źródła w przedziale 8 kolejnych najmniej korzystnych godzin dnia
LAW 1hN - równoważny poziom mocy akustycznej źródła w przedziale 1 najmniej korzystnej godziny nocy

8. Ekrany - budynki

Lp	Symbol	Wia	Współrzędne x,y wierzchołków ekranu[m]								ho	h1	ht	Współczynniki		
		[ta]	x1	y1	x2	y2	x3	y3	x4	y4	m	m	m	odbicia	nr	1 - 4
		(W)														
1	EK-B 1		211.6	189.5	214.4	203.9	201.5	206.2	198.4	192.6	0.0	9.0	0.0	0.8	0.8	0.8
2	EK-B 2		234.6	183.7	236.9	197.7	224.8	200.0	222.1	186.4	0.0	9.0	0.0	0.8	0.8	0.8
3	EK-B 3		257.5	179.4	260.2	193.0	248.5	195.3	245.0	181.7	0.0	9.0	0.0	0.8	0.8	0.8
4	EK-B 4		281.2	174.4	283.5	188.7	271.4	190.7	268.7	177.1	0.0	9.0	0.0	0.8	0.8	0.8
5	EK-B 5		306.4	169.3	309.1	183.3	297.1	186.0	294.0	172.4	0.0	9.0	0.0	0.8	0.8	0.8
6	EK-B 6		205.8	151.4	208.5	165.8	195.7	168.1	193.4	153.8	0.0	9.0	0.0	0.8	0.8	0.8
7	EK-B 7		229.9	149.1	232.2	163.1	219.8	166.2	217.1	151.1	0.0	9.0	0.0	0.8	0.8	0.8
8	EK-B 8		253.6	144.5	256.3	158.8	243.1	161.5	240.4	146.8	0.0	9.0	0.0	0.8	0.8	0.8
9	EK-B 9		276.5	140.2	279.2	154.2	266.4	156.5	263.7	142.1	0.0	9.0	0.0	0.8	0.8	0.8
10	EK-B 10		300.2	135.1	302.1	149.5	290.1	151.8	287.4	137.9	0.0	9.0	0.0	0.8	0.8	0.8

Koniec danych

LAeq , dzień

	0	10	20	30	40
	50	60	70	80	90
	100	110	120	130	140
	150	160	170	180	190
	200	210	220	230	240
	250	260	270	280	290
	300	310	320	330	340
	350	360	370	380	390
	400	410	420	430	440
	450	460			
320	14.8	15.1	15.4	15.7	16.0
	16.3	16.3	16.6	16.9	17.4
	17.8	18.2	18.5	18.9	19.2
	19.5	19.8	20.2	20.5	20.8
	21.0	21.2	21.4	21.5	21.5
	21.6	21.6	21.5	21.4	21.3
	21.1	20.9	20.7	20.4	20.1
	19.8	19.5	19.1	18.8	18.4
	18.1	17.8	17.4	17.1	16.7
	16.3	16.0			
310	14.9	15.2	15.6	15.9	16.2
	16.6	16.9	16.9	17.2	17.7
	18.1	18.5	18.9	19.3	19.7
	20.1	20.4	20.8	21.1	21.4
	21.7	22.0	22.2	22.3	22.4
	22.4	22.3	22.3	22.2	22.0
	21.8	21.6	21.3	21.0	20.7
	20.3	20.0	19.6	19.2	18.8

	18.4	18.1	17.7	17.3	16.9
	16.2	15.8			
300	14.8	15.4	15.7	16.1	16.4
	16.8	17.1	17.5	17.5	17.9
	18.4	18.8	19.3	19.7	20.2
	20.6	21.0	21.4	21.8	22.2
	22.5	22.8	23.0	23.1	23.2
	23.2	23.2	23.1	23.0	22.8
	22.6	22.3	22.0	21.6	21.3
	20.9	20.5	20.1	19.7	19.2
	18.9	18.4	18.0	17.2	16.8
	16.4	16.0			
290	14.9	15.3	15.6	16.2	16.6
	17.0	17.4	17.8	18.2	18.2
	18.7	19.2	19.7	20.2	20.7
	21.1	21.6	22.0	22.5	22.9
	23.3	23.7	23.9	24.1	24.2
	24.2	24.1	24.0	23.9	23.6
	23.4	23.1	22.7	22.3	21.9
	21.5	21.0	20.6	20.1	19.7
	19.2	18.4	17.9	17.5	17.1
	16.2	15.8			
280	14.6	15.0	15.8	16.2	16.5
	16.9	17.6	18.0	18.5	18.5
	18.9	19.5	20.0	20.6	21.2
	21.7	22.3	22.7	23.3	23.8
	24.3	24.7	24.9	25.1	25.2
	25.2	25.2	25.0	24.9	24.6
	24.3	23.9	23.5	23.1	22.6
	22.1	21.6	21.2	20.6	19.7
	19.2	18.7	18.2	17.3	16.8
	16.4	16.0			
270	14.2	14.5	14.9	15.9	16.3
	17.1	17.6	18.0	18.7	19.2
	19.3	19.8	20.4	21.0	21.7
	22.3	22.9	23.5	24.1	24.7
	25.3	25.7	26.1	26.3	26.4
	26.4	26.3	26.2	25.9	25.6
	25.3	24.8	24.4	23.9	23.3
	22.8	22.2	21.7	20.7	20.1
	19.6	18.6	18.1	17.6	17.1
	16.6	16.2			
260	14.8	15.2	15.1	15.5	15.9
	16.3	17.3	17.8	18.7	19.2
	19.8	20.2	20.8	21.4	22.1
	22.9	23.6	24.3	25.0	25.8
	26.5	27.0	27.4	27.7	27.8
	27.7	27.6	27.4	27.1	26.8
	26.3	25.8	25.3	24.8	24.2
	23.5	22.5	21.9	21.2	20.1
	19.5	18.9	18.4	17.8	17.3
	16.8	16.4			
250	14.6	16.3	16.0	16.1	16.5
	16.5	16.9	17.4	18.0	19.1
	20.1	20.7	20.9	21.6	22.6
	23.4	24.3	25.2	26.1	27.0
	27.8	28.5	29.0	29.3	29.3
	29.3	29.1	28.8	28.5	28.0
	27.5	27.0	26.4	25.7	24.7
	24.0	23.2	22.0	21.3	20.6
	19.9	19.3	18.7	18.1	17.6
	16.1	15.6			
240	12.9	13.3	13.8	14.3	16.2
	17.3	17.9	18.1	18.6	18.7
	19.4	20.0	21.4	22.0	22.8
	23.8	25.0	26.0	27.2	28.3
	29.5	30.4	30.9	31.2	31.2
	31.0	30.8	30.4	30.0	29.5
	28.9	28.3	27.3	26.5	25.7
	24.4	23.5	22.6	21.8	21.0
	20.3	19.6	18.9	17.3	16.8
	16.2	15.8			
230	11.5	12.0	13.0	13.7	14.3
	15.0	15.9	16.3	16.9	19.1
	20.5	20.8	21.4	21.9	22.4
	23.9	25.4	26.8	28.2	29.9
	31.6	32.9	33.4	33.5	33.4
	33.2	32.8	32.3	31.7	31.1
	30.3	29.6	28.7	27.8	26.3
	25.3	24.2	23.2	22.3	21.4
	20.6	18.8	18.2	17.5	16.9
	16.4	15.9			
220	9.7	10.2	10.6	11.5	12.0
	12.6	14.8	15.6	16.4	17.2
	18.0	19.0	19.9	21.3	23.5
	24.1	25.0	27.2	29.0	31.5
	34.3	36.6	36.8	36.5	36.3
	35.8	35.2	34.5	33.5	32.9
	32.2	31.4	30.1	28.9	27.5
	26.2	24.9	23.8	22.7	20.6
	19.8	19.0	18.3	17.6	17.0
	16.5	16.0			
210	9.6	10.0	10.5	11.0	11.6
	12.1	13.0	13.6	14.3	15.2
	16.0	16.9	17.8	18.9	20.1
	19.4	20.9	25.6	28.3	32.4
	37.1	44.6	41.4	40.6	40.6
	39.1	38.3	37.2	36.3	35.4
	34.4	33.7	32.4	30.6	28.7
	27.0	25.6	22.9	21.8	20.8
	19.9	19.1	18.5	17.7	17.1
	16.6	16.2			
200	9.4	9.9	10.4	10.9	11.4
	12.0	12.6	13.3	14.0	14.9
	15.7	16.6	17.5	18.6	19.7
	20.9	18.8	19.4	20.4	21.8
	19.0	-1.0	40.3	46.8	47.1
	42.3	45.7	40.8	40.3	38.7
	37.8	37.7	35.4	32.5	30.0
	26.4	24.8	23.4	22.2	21.3
	20.4	19.5	18.8	18.3	17.7
	17.1	16.5			
190	11.7	12.2	12.4	12.6	12.8
	12.8	12.8	13.5	14.2	14.9
	15.8	16.7	17.7	18.9	20.2
	21.6	23.0	20.5	20.9	23.0
	26.5	-1.0	27.8	-1.0	33.7
	-1.0	35.4	39.5	50.6	42.0
	42.5	45.5	38.6	32.2	28.9
	26.7	25.0	23.6	22.3	21.3
	20.5	19.7	18.9	18.2	17.6

	17.0	16.5			
180	13.7	13.8	14.3	14.7	14.6
	14.1	14.6	15.0	15.4	15.8
	16.5	17.3	18.2	19.5	21.0
	22.6	24.5	26.4	23.3	24.3
	31.3	33.1	32.2	31.6	30.2
	30.1	31.3	-1.0	-1.0	33.2
	-1.0	34.7	36.3	32.7	29.1
	26.7	25.0	24.1	23.1	22.3
	21.0	20.1	19.4	18.8	18.1
	17.6	16.7			
170	15.1	15.3	15.7	16.3	16.1
	16.5	17.4	17.4	17.6	18.3
	18.6	18.7	19.5	20.5	22.0
	23.6	25.8	28.4	26.9	26.3
	26.3	30.0	32.0	32.2	33.2
	33.6	33.8	32.9	31.3	30.3
	29.3	26.7	28.4	29.5	26.7
	24.7	23.2	24.0	23.4	21.8
	20.4	19.4	18.4	17.8	17.9
	17.4	16.8			
160	15.6	16.0	16.4	16.9	17.3
	17.6	18.1	18.7	19.4	19.8
	20.9	21.6	22.4	23.3	24.8
	25.7	27.4	30.1	34.5	34.6
	-1.0	38.2	-1.0	-1.0	31.8
	-1.0	29.9	32.2	32.2	33.3
	33.9	31.0	24.9	27.4	25.2
	23.3	21.7	20.4	19.3	18.5
	18.1	18.5	19.0	19.5	19.5
	17.8	16.6			
150	14.6	15.1	15.5	16.0	16.4
	17.0	17.5	18.2	18.8	19.6
	20.4	21.3	22.3	23.9	25.0
	26.7	28.8	31.6	36.2	44.8
	43.3	42.2	49.7	-1.0	37.6
	-1.0	35.8	-1.0	30.0	-1.0
	28.8	25.4	22.1	21.0	23.8
	22.2	20.8	19.5	18.3	17.4
	16.6	15.9	15.6	15.2	14.9
	15.4	16.7			
140	14.2	14.6	15.1	15.6	16.1
	16.6	17.3	17.9	18.6	19.3
	20.3	20.9	21.9	23.1	24.4
	26.1	28.1	30.6	33.8	37.1
	37.7	38.5	39.9	39.2	43.9
	40.6	45.1	44.6	41.2	-1.0
	-1.0	22.3	21.0	20.0	19.4
	21.5	20.3	19.1	18.0	17.0
	16.1	15.3	14.6	14.1	13.5
	13.3	13.1			
130	14.2	14.6	15.1	15.5	16.2
	16.7	17.3	18.1	18.4	19.1
	19.9	20.7	21.7	22.8	24.1
	25.6	27.2	29.2	31.2	32.9
	33.8	34.6	35.2	35.8	36.8
	37.0	38.6	38.8	39.5	42.4
	36.8	32.3	29.7	27.8	24.2
	20.3	20.8	19.6	18.5	17.6
	16.6	15.8	14.9	14.1	13.4
	12.9	12.4			
120	14.2	14.7	15.2	15.6	16.4
	16.5	17.0	17.6	18.2	18.9
	19.7	20.5	21.4	22.4	23.6
	24.8	26.2	27.7	29.1	30.3
	31.2	31.8	32.4	32.9	33.4
	33.9	34.4	34.7	35.1	35.2
	33.3	30.7	28.4	26.5	25.0
	24.5	22.9	23.2	22.1	20.5
	18.8	17.8	16.9	16.2	14.3
	13.4	13.0			
110	14.3	15.0	14.9	15.4	15.9
	16.4	16.9	17.5	18.1	18.7
	19.5	20.2	21.1	22.0	23.0
	24.0	25.2	26.3	27.4	28.3
	29.1	29.7	30.2	30.6	31.0
	31.4	31.6	31.8	31.8	31.4
	30.4	28.8	27.2	25.7	24.3
	23.1	22.1	21.5	21.9	21.4
	19.9	19.9	19.6	18.7	18.4
	16.6	15.1			
100	14.0	14.4	14.8	15.3	15.7
	16.2	16.7	17.3	17.9	18.5
	19.2	19.9	20.7	21.5	22.4
	23.3	24.2	25.1	26.0	26.7
	27.4	27.9	28.4	28.7	29.1
	29.3	29.4	29.5	29.4	28.9
	28.2	27.1	25.9	24.7	23.6
	22.6	21.6	20.8	20.1	20.1
	19.4	19.1	19.1	18.4	17.5
	17.5	17.0			
90	13.9	14.3	14.7	15.2	15.6
	16.1	16.6	17.1	17.7	18.2
	18.9	19.5	20.2	21.0	21.7
	22.5	23.3	24.0	24.8	25.4
	26.0	26.4	26.8	27.1	27.4
	27.6	27.6	27.6	27.4	27.0
	26.4	25.7	24.7	23.8	22.9
	22.0	21.2	20.4	19.7	19.1
	19.1	18.5	18.0	17.5	17.0
	17.4	17.2			
80	13.8	14.2	14.6	15.0	15.4
	15.9	16.4	16.9	17.4	17.9
	18.5	19.1	19.8	20.4	21.1
	21.8	22.4	23.1	23.7	24.2
	24.7	25.1	25.5	25.7	25.9
	26.1	26.1	26.0	25.8	25.5
	25.0	24.4	23.6	22.9	22.1
	21.4	20.6	19.9	19.3	18.7
	18.2	18.3	17.8	17.3	16.8
	16.3	15.9			
70	13.7	14.1	14.5	14.9	15.3
	15.7	16.2	16.6	17.1	17.6
	18.2	18.7	19.3	19.9	20.5
	21.1	21.7	22.2	22.7	23.2
	23.6	24.0	24.3	24.5	24.7
	24.7	24.8	24.7	24.4	24.2
	23.8	23.3	22.7	22.0	21.4
	20.8	20.2	19.5	18.9	18.4
	17.9	18.0	17.5	17.0	16.6
	16.1	15.7			

60		13.6	13.9	14.3	14.7	15.1
		15.5	15.9	16.4	16.8	17.3
		17.8	18.3	18.8	19.4	19.9
		20.4	20.9	21.4	21.9	22.3
		22.6	22.9	23.2	23.4	23.5
		23.6	23.6	23.5	23.3	23.0
		22.7	22.3	21.8	21.2	20.7
		20.2	19.6	19.1	18.5	18.0
		17.5	17.1	17.2	16.8	16.4
		15.9	15.5			
50		13.4	13.8	14.1	14.5	14.9
		15.3	15.7	16.1	16.5	17.0
		17.4	17.9	18.4	18.8	19.3
		19.8	20.2	20.7	21.0	21.4
		21.7	22.0	22.2	22.4	22.5
		22.5	22.5	22.4	22.3	22.0
		21.7	21.3	21.0	20.6	20.0
		19.6	19.1	18.6	18.1	17.6
		17.2	16.8	16.3	16.5	16.1
		15.7	15.3			
40		13.3	13.6	13.9	14.3	14.7
		15.0	15.4	15.8	16.2	16.6
		17.1	17.5	17.9	18.4	18.8
		19.2	19.6	20.0	20.3	20.6
		20.9	21.1	21.3	21.5	21.5
		21.6	21.6	21.5	21.3	21.1
		20.9	20.6	20.2	19.9	19.4
		19.0	18.6	18.2	17.7	17.2
		16.8	16.4	16.0	15.7	15.9
		15.5	15.1			
30		13.1	13.4	13.8	14.1	14.5
		14.8	15.2	15.5	15.9	16.3
		16.7	17.1	17.5	17.9	18.3
		18.6	19.0	19.3	19.6	19.9
		20.1	20.3	20.5	20.6	20.7
		20.7	20.7	20.6	20.5	20.3
		20.1	19.8	19.4	19.2	18.9
		18.4	18.1	17.7	17.3	17.0
		16.5	16.1	15.8	15.4	15.0
		15.3	14.9			
20		12.9	13.3	13.6	13.9	14.2
		14.6	14.9	15.3	15.6	16.0
		16.3	16.7	17.1	17.4	17.8
		18.1	18.4	18.7	19.0	19.2
		19.4	19.6	19.8	19.9	19.9
		19.9	19.9	19.8	19.7	19.5
		19.3	19.1	18.9	18.6	18.3
		17.9	17.5	17.2	16.9	16.6
		16.1	15.8	15.4	15.1	14.8
		14.5	14.7			
10		12.8	13.1	13.4	13.7	14.0
		14.3	14.6	15.0	15.3	15.6
		16.0	16.3	16.6	17.0	17.3
		17.6	17.9	18.1	18.4	18.6
		18.8	18.9	19.1	19.2	19.2
		19.2	19.2	19.1	19.0	18.9
		18.7	18.5	18.3	17.9	17.7
		17.4	17.1	16.7	16.4	16.1
		15.9	15.5	15.1	14.8	14.5
		14.2	13.9			
0		12.6	12.9	13.2	13.5	13.8
		14.1	14.4	14.7	15.0	15.3
		15.6	15.9	16.2	16.5	16.8
		17.1	17.3	17.6	17.8	18.0
		18.2	18.3	18.4	18.5	18.5
		18.6	18.5	18.5	18.4	18.2
		18.1	17.9	17.6	17.5	17.2
		16.9	16.5	16.3	16.0	15.7
		15.4	15.1	14.8	14.6	14.3
		14.0	13.7			

(x = 324 ,y = 178 ,z = 4.0) : 33.9
(x = 312 ,y = 134 ,z = 4.0) : 27.5

L_{Aeq} , dzień: wartość największa występuje w punkcie (280,190,4.0)
i wynosi 50.6 dB(A)

Koniec obliczeń

Z.U.O. "EKO - SOFT"
Łódź ul. Rogozińskiego 17/7
tel. 042 648 71 85

HAŁAS PRZEMYSŁOWY i DROGOWY
PROGRAM SON2 WERSJA 5.424

Właściciel licencji: NOVUM PROJEKT Norbert Piróg
ul. Planetarna 21C/4, Żalasewo 62-020 Swarzędz
Licencja nr NP/62020/Spd/21 z dnia 14.05.2021

DANE WEJŚCIOWE

Rodzaj obliczeń: Poziom hałasu równoważnego

1. Nazwa projektu:
2. Temperatura powietrza [st C.] = 10
3. Wilgotność względna powietrza [%] = 70
4. Tło akustyczne dB(A):
 Pora dnia : 0.0
 Pora nocy : 0.0
5. Rodzaj gruntu : grunt porowaty, wskaźnik gruntu G = 1
6. Punktowe źródła hałasu

Lp	Symbol	Współrzędne źródła			ht	Rodzaj źródła	LAW	tD	tN	Do
		x	y	z						
		m	m	m	m		dB(A)	h	h	dB
1	ZP 1	212.4	205.4	1.5	0.0	wszechkier.	68.0	8.000	1.000	3
2	ZP 2	235.3	199.6	1.5	0.0	wszechkier.	68.0	8.000	1.000	3
3	ZP 3	258.6	194.9	1.5	0.0	wszechkier.	68.0	8.000	1.000	3
4	ZP 4	281.5	190.3	1.5	0.0	wszechkier.	68.0	8.000	1.000	3
5	ZP 5	307.6	185.2	1.5	0.0	wszechkier.	68.0	8.000	1.000	3
6	ZP 6	288.5	136.7	1.5	0.0	wszechkier.	68.0	8.000	1.000	3
7	ZP 7	264.8	141.0	1.5	0.0	wszechkier.	68.0	8.000	1.000	3
8	ZP 8	241.5	145.6	1.5	0.0	wszechkier.	68.0	8.000	1.000	3
9	ZP 9	217.9	149.9	1.5	0.0	wszechkier.	68.0	8.000	1.000	3
10	ZP 10	194.2	152.6	1.5	0.0	wszechkier.	68.0	8.000	1.000	3

7. Liniowe źródła hałasu

Lp	Symbol	Początek			ht	Koniec			LAW 8hD	LAW 1hN	D0
		x1	y1	z1		x2	y2	z2			
		m	m	m	m	m	m	m	dB	dB	dB
1	T1	309.9	158.4	0.0	0.0	262.1	168.1	0.0	0.0	64.5	69.5
2	T2	262.1	168.1	0.0	0.0	199.6	180.6	0.0	0.0	65.0	71.3

z - wysokość źródła nad gruntem ; ht - wysokość gruntu względem płaszczyzny odniesienia
LAW - poziom mocy akustycznej źródła nominalny
tD - czas pracy źródła w przedziale 8 kolejnych najmniej korzystnych godzin dnia
tN - czas pracy źródła w przedziale 1 najmniej korzystnej godziny nocy

LAW 8hD - równoważny poziom mocy akustycznej źródła w przedziale 8 kolejnych najmniej korzystnych godzin dnia
LAW 1hN - równoważny poziom mocy akustycznej źródła w przedziale 1 najmniej korzystnej godziny nocy

8. Ekrany - budynki

Lp	Symbol	Wia	Współrzędne x,y wierzchołków ekranu[m]								ho	h1	ht	Współczynniki		
		[ta]	x1	y1	x2	y2	x3	y3	x4	y4	m	m	m	odbicia	nr	1 - 4
		(W)														
1	EK-B 1		211.6	189.5	214.4	203.9	201.5	206.2	198.4	192.6	0.0	9.0	0.0	0.8	0.8	0.8
2	EK-B 2		234.6	183.7	236.9	197.7	224.8	200.0	222.1	186.4	0.0	9.0	0.0	0.8	0.8	0.8
3	EK-B 3		257.5	179.4	260.2	193.0	248.5	195.3	245.0	181.7	0.0	9.0	0.0	0.8	0.8	0.8
4	EK-B 4		281.2	174.4	283.5	188.7	271.4	190.7	268.7	177.1	0.0	9.0	0.0	0.8	0.8	0.8
5	EK-B 5		306.4	169.3	309.1	183.3	297.1	186.0	294.0	172.4	0.0	9.0	0.0	0.8	0.8	0.8
6	EK-B 6		205.8	151.4	208.5	165.8	195.7	168.1	193.4	153.8	0.0	9.0	0.0	0.8	0.8	0.8
7	EK-B 7		229.9	149.1	232.2	163.1	219.8	166.2	217.1	151.1	0.0	9.0	0.0	0.8	0.8	0.8
8	EK-B 8		253.6	144.5	256.3	158.8	243.1	161.5	240.4	146.8	0.0	9.0	0.0	0.8	0.8	0.8
9	EK-B 9		276.5	140.2	279.2	154.2	266.4	156.5	263.7	142.1	0.0	9.0	0.0	0.8	0.8	0.8
10	EK-B 10		300.2	135.1	302.1	149.5	290.1	151.8	287.4	137.9	0.0	9.0	0.0	0.8	0.8	0.8

Koniec danych

LAeq , noc

	0	10	20	30	40
	50	60	70	80	90
	100	110	120	130	140
	150	160	170	180	190
	200	210	220	230	240
	250	260	270	280	290
	300	310	320	330	340
	350	360	370	380	390
	400	410	420	430	440
	450	460			
320	14.8	15.1	15.4	15.7	16.0
	16.3	16.3	16.6	16.9	17.4
	17.8	18.2	18.5	18.9	19.2
	19.5	19.8	20.2	20.5	20.8
	21.0	21.2	21.4	21.5	21.6
	21.6	21.6	21.5	21.4	21.3
	21.1	20.9	20.7	20.4	20.1
	19.8	19.5	19.1	18.8	18.4
	18.1	17.8	17.4	17.1	16.7
	16.3	16.0			
310	14.9	15.2	15.6	15.9	16.2
	16.6	16.9	16.9	17.2	17.7
	18.1	18.5	18.9	19.3	19.7
	20.1	20.4	20.8	21.1	21.4
	21.7	22.0	22.2	22.3	22.4
	22.4	22.3	22.3	22.2	22.0
	21.8	21.6	21.3	21.0	20.7
	20.3	20.0	19.6	19.2	18.8

	18.4	18.1	17.7	17.3	16.9
	16.2	15.8			
300	14.8	15.4	15.7	16.1	16.4
	16.8	17.1	17.5	17.5	17.9
	18.4	18.8	19.3	19.7	20.2
	20.6	21.0	21.4	21.8	22.2
	22.5	22.8	23.0	23.1	23.3
	23.2	23.2	23.1	23.0	22.8
	22.6	22.3	22.0	21.6	21.3
	20.9	20.5	20.1	19.7	19.2
	18.9	18.4	18.0	17.2	16.8
	16.4	16.0			
290	14.9	15.3	15.6	16.2	16.6
	17.0	17.4	17.8	18.2	18.2
	18.7	19.2	19.7	20.2	20.7
	21.1	21.6	22.0	22.5	22.9
	23.3	23.7	23.9	24.1	24.2
	24.2	24.2	24.1	23.9	23.7
	23.4	23.1	22.7	22.3	21.9
	21.5	21.0	20.6	20.1	19.7
	19.2	18.4	17.9	17.5	17.1
	16.2	15.8			
280	14.6	15.0	15.8	16.2	16.5
	16.9	17.6	18.0	18.5	18.5
	18.9	19.5	20.0	20.6	21.2
	21.7	22.3	22.7	23.3	23.8
	24.3	24.7	25.0	25.2	25.2
	25.3	25.2	25.1	24.9	24.6
	24.3	23.9	23.5	23.1	22.6
	22.1	21.6	21.2	20.6	19.7
	19.2	18.7	18.2	17.3	16.8
	16.4	16.0			
270	14.2	14.5	14.9	15.9	16.3
	17.1	17.6	18.0	18.7	19.2
	19.3	19.8	20.4	21.1	21.7
	22.3	22.9	23.5	24.1	24.8
	25.3	25.8	26.1	26.4	26.4
	26.4	26.4	26.2	26.0	25.6
	25.3	24.8	24.4	23.9	23.3
	22.8	22.2	21.7	20.7	20.1
	19.6	18.6	18.1	17.6	17.1
	16.6	16.2			
260	14.8	15.2	15.1	15.5	15.9
	16.3	17.3	17.8	18.7	19.2
	19.8	20.2	20.8	21.5	22.2
	22.9	23.6	24.4	25.1	25.8
	26.5	27.1	27.5	27.7	27.8
	27.8	27.7	27.4	27.1	26.8
	26.4	25.9	25.3	24.8	24.2
	23.5	22.6	21.9	21.2	20.1
	19.5	18.9	18.4	17.8	17.3
	16.8	16.4			
250	14.6	16.3	16.0	16.1	16.5
	16.5	16.9	17.4	18.0	19.1
	20.1	20.7	20.9	21.7	22.6
	23.5	24.3	25.2	26.1	27.0
	27.9	28.6	29.0	29.3	29.4
	29.3	29.1	28.8	28.5	28.1
	27.6	27.0	26.4	25.7	24.7
	24.0	23.2	22.0	21.3	20.6
	19.9	19.3	18.7	18.1	17.6
	16.1	15.6			
240	12.9	13.3	13.8	14.3	16.2
	17.3	17.9	18.1	18.6	18.7
	19.4	20.1	21.4	22.0	22.9
	23.9	25.0	26.1	27.2	28.4
	29.5	30.4	31.0	31.2	31.2
	31.1	30.8	30.4	30.0	29.5
	28.9	28.3	27.4	26.6	25.7
	24.4	23.5	22.6	21.8	21.0
	20.3	19.6	18.9	17.3	16.8
	16.2	15.8			
230	11.5	12.0	13.0	13.7	14.3
	15.0	15.9	16.3	16.9	19.1
	20.6	20.9	21.5	22.0	22.5
	24.0	25.5	26.8	28.2	29.9
	31.6	32.9	33.4	33.5	33.5
	33.2	32.8	32.3	31.8	31.1
	30.3	29.6	28.8	27.8	26.4
	25.3	24.3	23.3	22.3	21.5
	20.6	18.8	18.2	17.5	16.9
	16.4	15.9			
220	9.7	10.2	10.6	11.5	12.0
	12.6	14.8	15.6	16.4	17.3
	18.1	19.1	20.1	21.4	23.6
	24.2	25.1	27.3	29.1	31.5
	34.3	36.7	36.8	36.5	36.3
	35.8	35.3	34.6	33.6	32.9
	32.2	31.5	30.2	28.9	27.6
	26.2	25.0	23.8	22.8	20.7
	19.8	19.0	18.3	17.6	17.0
	16.5	16.0			
210	9.6	10.0	10.5	11.0	11.6
	12.1	13.0	13.6	14.3	15.4
	16.2	17.1	18.1	19.3	20.5
	20.0	21.4	25.9	28.5	32.4
	37.1	44.6	41.4	40.7	40.6
	39.1	38.4	37.2	36.3	35.4
	34.4	33.8	32.4	30.6	28.8
	27.1	25.6	23.0	21.9	20.9
	20.0	19.2	18.5	17.7	17.1
	16.6	16.2			
200	9.4	9.9	10.4	10.9	11.4
	12.0	12.6	13.3	14.0	15.0
	15.9	16.8	17.8	19.0	20.1
	21.4	19.9	20.9	22.3	23.7
	19.4	-1.0	40.4	46.8	47.1
	42.3	45.7	40.8	40.3	38.7
	37.8	37.7	35.4	32.5	30.0
	26.4	24.8	23.4	22.3	21.3
	20.4	19.6	18.9	18.3	17.7
	17.1	16.5			
190	11.7	12.2	12.4	12.6	12.8
	12.8	12.8	13.5	14.2	15.1
	16.0	17.0	18.0	19.3	20.6
	22.1	23.6	22.1	23.7	26.9
	31.7	-1.0	31.5	-1.0	34.7
	-1.0	35.8	39.6	50.6	42.0
	42.5	45.5	38.7	32.2	28.9
	26.8	25.0	23.6	22.4	21.4
	20.6	19.7	19.0	18.2	17.6

	17.0	16.5			
180	13.7	13.8	14.3	14.7	14.6
	14.1	14.6	15.0	15.5	16.0
	16.7	17.6	18.5	19.9	21.4
	23.0	24.9	26.9	25.3	28.8
	37.3	39.1	38.0	37.1	35.2
	35.5	33.9	-1.0	-1.0	34.0
	-1.0	34.8	36.4	32.8	29.2
	26.8	25.1	24.2	23.2	22.4
	21.1	20.2	19.5	18.8	18.1
	17.6	16.7			
170	15.1	15.3	15.7	16.3	16.1
	16.5	17.4	17.4	17.7	18.4
	18.7	18.8	19.7	20.8	22.2
	24.0	26.1	28.7	27.8	28.5
	32.0	34.4	36.4	37.6	38.9
	39.8	39.4	37.7	36.1	34.5
	34.1	30.1	29.5	29.8	27.0
	25.0	23.5	24.2	23.5	21.9
	20.5	19.4	18.5	17.8	17.9
	17.4	16.8			
160	15.6	16.0	16.4	16.9	17.3
	17.6	18.1	18.7	19.4	19.9
	21.0	21.7	22.5	23.4	24.9
	25.9	27.6	30.2	34.6	34.6
	-1.0	38.5	-1.0	-1.0	34.1
	-1.0	34.3	36.2	36.9	38.1
	39.0	35.9	27.9	28.0	25.7
	23.7	22.1	20.7	19.6	18.7
	18.3	18.6	19.1	19.5	19.5
	17.8	16.6			
150	14.6	15.1	15.5	16.0	16.4
	17.0	17.5	18.2	18.8	19.6
	20.4	21.4	22.4	24.0	25.1
	26.8	28.9	31.7	36.2	44.8
	43.3	42.2	49.7	-1.0	37.7
	-1.0	36.2	-1.0	32.2	-1.0
	33.6	29.9	25.6	23.1	24.4
	22.6	21.1	19.8	18.7	17.7
	16.8	16.1	15.7	15.2	14.9
	15.4	16.7			
140	14.2	14.6	15.1	15.6	16.1
	16.6	17.3	17.9	18.6	19.4
	20.4	20.9	22.0	23.2	24.5
	26.2	28.1	30.7	33.9	37.1
	37.7	38.5	39.9	39.3	43.9
	40.7	45.2	44.6	41.2	-1.0
	-1.0	24.8	23.4	21.7	20.6
	22.0	20.7	19.4	18.2	17.3
	16.4	15.5	14.8	14.1	13.5
	13.3	13.1			
130	14.2	14.6	15.1	15.5	16.2
	16.7	17.3	18.1	18.4	19.1
	19.9	20.8	21.8	22.9	24.2
	25.6	27.3	29.2	31.2	32.9
	33.9	34.6	35.3	35.8	36.8
	37.1	38.6	38.8	39.5	42.4
	36.8	32.5	29.8	28.0	24.5
	20.9	21.1	19.9	18.7	17.9
	16.8	15.9	15.0	14.1	13.4
	12.9	12.4			
120	14.2	14.7	15.2	15.6	16.4
	16.5	17.0	17.6	18.2	18.9
	19.7	20.6	21.5	22.5	23.6
	24.9	26.2	27.7	29.1	30.3
	31.2	31.9	32.4	32.9	33.5
	33.9	34.5	34.7	35.1	35.2
	33.3	30.7	28.5	26.6	25.2
	24.6	23.1	23.3	22.2	20.6
	18.9	17.9	17.0	16.2	14.3
	13.4	13.0			
110	14.3	15.0	14.9	15.4	15.9
	16.4	16.9	17.5	18.1	18.7
	19.5	20.3	21.1	22.0	23.0
	24.1	25.2	26.3	27.4	28.4
	29.1	29.7	30.2	30.7	31.1
	31.4	31.7	31.8	31.8	31.5
	30.4	28.8	27.3	25.8	24.3
	23.2	22.3	21.6	22.0	21.5
	20.0	20.0	19.6	18.7	18.4
	16.6	15.1			
100	14.0	14.4	14.8	15.3	15.7
	16.2	16.7	17.3	17.9	18.5
	19.2	19.9	20.7	21.5	22.4
	23.3	24.2	25.2	26.1	26.8
	27.5	28.0	28.4	28.8	29.1
	29.3	29.5	29.5	29.4	29.0
	28.2	27.2	26.0	24.8	23.7
	22.6	21.7	20.9	20.2	20.1
	19.5	19.1	19.1	18.4	17.5
	17.5	17.0			
90	13.9	14.3	14.7	15.2	15.6
	16.1	16.6	17.1	17.7	18.2
	18.9	19.5	20.2	21.0	21.7
	22.5	23.3	24.1	24.8	25.4
	26.0	26.5	26.9	27.2	27.4
	27.6	27.7	27.6	27.5	27.1
	26.5	25.8	24.8	23.9	22.9
	22.1	21.2	20.5	19.8	19.2
	19.2	18.5	18.0	17.5	17.0
	17.4	17.2			
80	13.8	14.2	14.6	15.0	15.4
	15.9	16.4	16.9	17.4	17.9
	18.5	19.1	19.8	20.4	21.1
	21.8	22.5	23.1	23.7	24.3
	24.8	25.2	25.5	25.8	26.0
	26.1	26.1	26.1	25.8	25.6
	25.0	24.5	23.7	23.0	22.2
	21.5	20.7	20.0	19.4	18.8
	18.2	18.3	17.8	17.3	16.8
	16.3	15.9			
70	13.7	14.1	14.5	14.9	15.3
	15.7	16.2	16.6	17.1	17.6
	18.2	18.7	19.3	19.9	20.5
	21.1	21.7	22.2	22.7	23.2
	23.6	24.0	24.3	24.5	24.7
	24.8	24.8	24.7	24.4	24.2
	23.8	23.3	22.8	22.1	21.5
	20.8	20.2	19.5	19.0	18.4
	17.9	18.0	17.5	17.0	16.6
	16.1	15.7			

60		13.6	13.9	14.3	14.7	15.1
		15.5	15.9	16.4	16.8	17.3
		17.8	18.3	18.8	19.4	19.9
		20.4	20.9	21.4	21.9	22.3
		22.7	23.0	23.2	23.4	23.5
		23.6	23.6	23.5	23.3	23.0
		22.7	22.3	21.8	21.2	20.8
		20.2	19.7	19.2	18.5	18.0
		17.5	17.1	17.2	16.8	16.4
		15.9	15.5			
50		13.4	13.8	14.1	14.5	14.9
		15.3	15.7	16.1	16.5	17.0
		17.4	17.9	18.4	18.8	19.3
		19.8	20.2	20.7	21.0	21.4
		21.8	22.0	22.2	22.4	22.5
		22.5	22.5	22.4	22.3	22.0
		21.7	21.3	21.0	20.6	20.0
		19.6	19.1	18.6	18.1	17.6
		17.2	16.8	16.3	16.5	16.1
		15.7	15.3			
40		13.3	13.6	13.9	14.3	14.7
		15.0	15.4	15.8	16.2	16.6
		17.1	17.5	17.9	18.4	18.8
		19.2	19.6	20.0	20.3	20.6
		20.9	21.1	21.3	21.5	21.5
		21.6	21.6	21.5	21.3	21.1
		20.9	20.6	20.2	19.9	19.4
		19.0	18.6	18.2	17.7	17.2
		16.8	16.4	16.0	15.7	15.9
		15.5	15.1			
30		13.1	13.4	13.8	14.1	14.5
		14.8	15.2	15.5	15.9	16.3
		16.7	17.1	17.5	17.9	18.3
		18.6	19.0	19.3	19.6	19.9
		20.1	20.3	20.5	20.6	20.7
		20.7	20.7	20.6	20.5	20.3
		20.1	19.8	19.4	19.2	18.9
		18.4	18.1	17.7	17.3	17.0
		16.5	16.1	15.8	15.4	15.0
		15.3	14.9			
20		12.9	13.3	13.6	13.9	14.2
		14.6	14.9	15.3	15.6	16.0
		16.3	16.7	17.1	17.4	17.8
		18.1	18.4	18.7	19.0	19.2
		19.4	19.6	19.8	19.9	19.9
		19.9	19.9	19.8	19.7	19.5
		19.3	19.1	18.9	18.6	18.3
		17.9	17.5	17.2	16.9	16.6
		16.1	15.8	15.4	15.1	14.8
		14.5	14.7			
10		12.8	13.1	13.4	13.7	14.0
		14.3	14.6	15.0	15.3	15.6
		16.0	16.3	16.6	17.0	17.3
		17.6	17.9	18.1	18.4	18.6
		18.8	18.9	19.1	19.2	19.2
		19.2	19.2	19.1	19.0	18.9
		18.7	18.5	18.3	17.9	17.7
		17.4	17.1	16.7	16.4	16.1
		15.9	15.5	15.1	14.8	14.5
		14.2	13.9			
0		12.6	12.9	13.2	13.5	13.8
		14.1	14.4	14.7	15.0	15.3
		15.6	15.9	16.2	16.5	16.8
		17.1	17.3	17.6	17.8	18.0
		18.2	18.3	18.4	18.5	18.5
		18.6	18.5	18.5	18.4	18.2
		18.1	17.9	17.6	17.5	17.2
		16.9	16.5	16.3	16.0	15.7
		15.4	15.1	14.8	14.6	14.3
		14.0	13.7			

```
( x =      324 ,y =      178 ,z = 4.0 ) :          34.0
( x =      312 ,y =      134 ,z = 4.0 ) :          27.9

LAeq , noc: wartość największa występuje w punkcie (280,190,4.0)
i wynosi 50.6 dB(A)
```

Koniec obliczeń