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LONGITUDINAL DISPERSION IN SOLVENT -EXTRACTION COLUMNS: NUMERICAL TABLES

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NUMERICAL TABLES

Alice K. McMullen, Terukatsu Miyauchi, and Theodore Vermeulen

January 22, 1958

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Radiation Laboratory and Department of Chemical Engineering  
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ABSTRACT

A theoretical analysis of longitudinal dispersion in countercurrent columns has been made by Miyauchi (UCRL-3911), as a function of the rates of dispersion in the two phases, the mass-transfer coefficient, the equilibrium partition ratio, and the rates of fluid flow. In the study presented herein, the equations previously obtained have been solved numerically for a large number of typical conditions by use of the IBM 701 computer. The resulting concentration-distributions are tabulated in this report.

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INTRODUCTION

Longitudinal dispersion is known to control the performance of multicompartiment agitated reactors, from the work of Yagi and Miyauchi;<sup>4</sup> and of pulsed extraction columns, from studies by Vermeulen, Lane, Lehman, and Rubin.<sup>3</sup> More recently, the coefficients of longitudinal dispersion in packed columns have been measured by Jacques and Vermeulen.<sup>1</sup>

Thus it becomes important to be able to interpret experimental extraction data in terms of the combined effects of mass transfer and longitudinal dispersion; and to make design predictions for the result of these two effects. A complex, but exact, mathematical solution of this problem has been obtained by Miyauchi.<sup>2</sup> Numerical solutions for Miyauchi's equations are developed in this report, which is to serve a two-fold purpose. First, interpolation methods can be used to obtain theoretical concentration gradients for any given combination of operating variables. Second, the exact results can be used for testing rapid approximate methods of calculation under development now and to be developed in the future.

EQUATIONS

For one-dimensional steady-state counterflow of two immiscible liquids, the continuity equation are

$$\left. \begin{aligned} \epsilon_x E_x d^2 c_x / dz^2 - F_x dc_x / dz - K_x a (c_x - m c_y) &= 0 \\ \epsilon_y E_y d^2 c_y / dz^2 + F_y dc_y / dz + K_x a (c_x - m c_y) &= 0 \end{aligned} \right\}, \quad (1)$$

where  $E_x$  and  $E_y$  are the dispersion coefficients of the respective phases (each is assumed constant);  $F_x$  and  $F_y$  are the superficial velocities;  $\epsilon_x$  and  $\epsilon_y$  are the void fractions;  $c_x$  and  $c_y$  are the concentrations of the transferring component at the point of interest;  $m$  is the equilibrium

partition coefficient (assumed constant);  $Z$  is the length variable;  $K_x$  is the over-all mass-transfer coefficient relative to phase X; and  $a$  is the interfacial area per unit volume.

Rearrangement of the equations<sup>1</sup> into dimensionless form gives

$$\left. \begin{aligned} \frac{d^2C_x}{dZ^2} - P_x B \frac{dC_x}{dZ} - N_{ox} P_x B (C_x - mC_y^0) &= 0 \\ \frac{d^2C_y}{dZ^2} + P_y B \frac{dC_y}{dZ} + N_{oy} P_y B (C_x - mC_y) &= 0 \end{aligned} \right\} \quad (2)$$

where  $C_x = c_x/c_x^0$ ,  $C_y = c_y/c_x^0$ ,  $P_x = u_x d/E_x$ ,  $P_y = u_y d/E_y$ ,  $N_{ox} = K_x aL/F_x$ ,  $N_{oy} = K_x aL/F_y$ ,  $B = L/d$ ,  $u_x = F_x/\epsilon_x$ ,  $u_y = F_y/\epsilon_y$ , and  $Z = z/L$ .

The boundary conditions have been shown to be

$$\left. \begin{aligned} \text{at } Z = 0: \quad -\frac{dC_x}{dZ} &= P_x B (1 - C_{x0}) \\ &\quad -\frac{dC_y}{dZ} = 0 \\ \text{at } Z = 1: \quad -\frac{dC_x}{dZ} &= 0 \\ &\quad -\frac{dC_y}{dZ} = P_y B (C_{y1} - C_y^1) \end{aligned} \right\} \quad (4)$$

Eliminating the  $C_y$  term from Eq. (2) gives a single linear differential equation of fourth order,

$$\frac{d^4C_x}{dZ^4} - \alpha \frac{d^3C_x}{dZ^3} - \beta \frac{d^2C_x}{dZ^2} - \gamma \frac{dC_x}{dZ} = 0 \quad (5)$$

where  $\alpha$ ,  $\beta$ , and  $\gamma$  are constants independent of  $Z$ , as defined below.

With the appropriate boundary conditions, the solution of Eq. (5) is

$$\left. \begin{aligned} \frac{C_x - mC_y^1}{1 - mC_y^1} &= A_1 \exp(\lambda_1 Z) + A_2 \exp(\lambda_2 Z) + A_3 \exp(\lambda_3 Z) + A_4 \exp(\lambda_4 Z) \\ \frac{m(C_y - C_y^1)}{1 - mC_y^1} &= a_1 A_1 \exp(\lambda_1 Z) + a_2 A_2 \exp(\lambda_2 Z) + a_3 A_3 \exp(\lambda_3 Z) + a_4 A_4 \exp(\lambda_4 Z) \end{aligned} \right\} \quad (6)$$

where

$$A_1 = D_{A1}/D_A, \quad A_2 = D_{A2}/D_A, \quad A_3 = D_{A3}/D_A, \quad A_4 = D_{A4}/D_A;$$

---

<sup>1</sup>Numbered equations in this supplement are the same as in the original report (UCRL-3911).

$$\left\{ \begin{array}{c}
 \left| \begin{array}{ccc}
 1 - \frac{\lambda_2}{P_x B} & 1 - \frac{\lambda_3}{P_x B} & 1 - \frac{\lambda_4}{P_x B} \\
 \lambda_2 a_2 & \lambda_3 a_3 & \lambda_4 a_4 \\
 \lambda_2 \exp(\lambda_2) & \lambda_3 \exp(\lambda_3) & \lambda_4 \exp(\lambda_4) \\
 \lambda_2 a_2 & \lambda_3 a_3 & \lambda_4 a_4
 \end{array} \right| \\
 D_A = D_{A1} = \left| \begin{array}{ccc}
 \lambda_2 \exp(\lambda_2) & \lambda_3 \exp(\lambda_3) & \lambda_4 \exp(\lambda_4) \\
 (1 + \frac{\lambda_2}{P_y B}) a_2 \exp(\lambda_2) & (1 + \frac{\lambda_3}{P_y B}) a_3 \exp(\lambda_3) & (1 + \frac{\lambda_4}{P_y B}) a_4 \exp(\lambda_4)
 \end{array} \right| \\
 D_{A2} = \left| \begin{array}{cc}
 \lambda_3 a_3 & \lambda_4 a_4 \\
 \lambda_3 \exp(\lambda_3) & \lambda_4 \exp(\lambda_4)
 \end{array} \right| \\
 D_{A3} = \left| \begin{array}{cc}
 \lambda_2 a_2 & \lambda_4 a_4 \\
 \lambda_2 \exp(\lambda_2) & \lambda_4 \exp(\lambda_4)
 \end{array} \right| \text{ and } D_{A4} = - \left| \begin{array}{cc}
 \lambda_2 a_2 & \lambda_3 a_3 \\
 \lambda_2 \exp(\lambda_2) & \lambda_3 \exp(\lambda_3)
 \end{array} \right|
 \end{array} \right\}$$

$$a_j = 1 + \lambda_j / N_{ox} - \lambda_j^2 / N_{ox} P_x B, \text{ with } j = 1, 2, 3, \text{ and } 4;$$

$$\lambda_1 = 0$$

$$\lambda_2 = a/3 + 2 \sqrt{p} \cos(u/3)$$

$$\lambda_3 = a/3 + 2 \sqrt{p} \cos(u/3 + 2\pi/3)$$

$$\lambda_4 = a/3 + 2 \sqrt{p} \cos(u/3 + 4\pi/3)$$

where  $u$  is determined as an angle between 0 and  $\pi$  such that

$$\cos u = q/p^{3/2};$$

and

$$\left. \begin{aligned} p &= (\alpha/3)^2 + \beta/3 \\ q &= (\alpha/3)^3 + \alpha\beta/6 + \gamma/2 \end{aligned} \right\}$$

with

$$\left. \begin{aligned} \alpha &= P_x B - P_y B \\ \beta &= N_{ox} P_x B + P_x B P_y B + N_{ox} P_y B (\Lambda) \\ \gamma &= N_{ox} P_x B P_y B (1 - \Lambda) \end{aligned} \right\}$$

### COMPUTATION

The sequence of operations required to evaluate Eq. (6) is shown in Fig. 1. In the programming of this sequence for the 701 computer, the "regional" method was selected. For this purpose the following subroutines from the Computer Laboratory library were utilized:

602 Program assembly

022A To load regional binary cards

410R Square root

028 To load absolute binary cards

DF-P05 Decimal-punch routine for fourteen 5-digit decimal integers, with sign.

DUAL Floating-point interpretive routine

984 Memory dump

925 To correct the check sum on absolute binary cards.

New subroutines were programmed in this study, in order to evaluate  $\cos^{-1}$  and  $\tan^{-1}$  functions. The approximations given by Hastings<sup>1</sup> were used:

$$\tan^{-1} v = \sum_{i=0}^7 C_{2i+1} v^{2i+1}$$

$$\cos w = \sin \left( \frac{\pi}{2} - w \right) = \sin \frac{\pi}{2} v$$

$$= \sum_{i=0}^3 C_{2i+1} v^{2i+1}$$

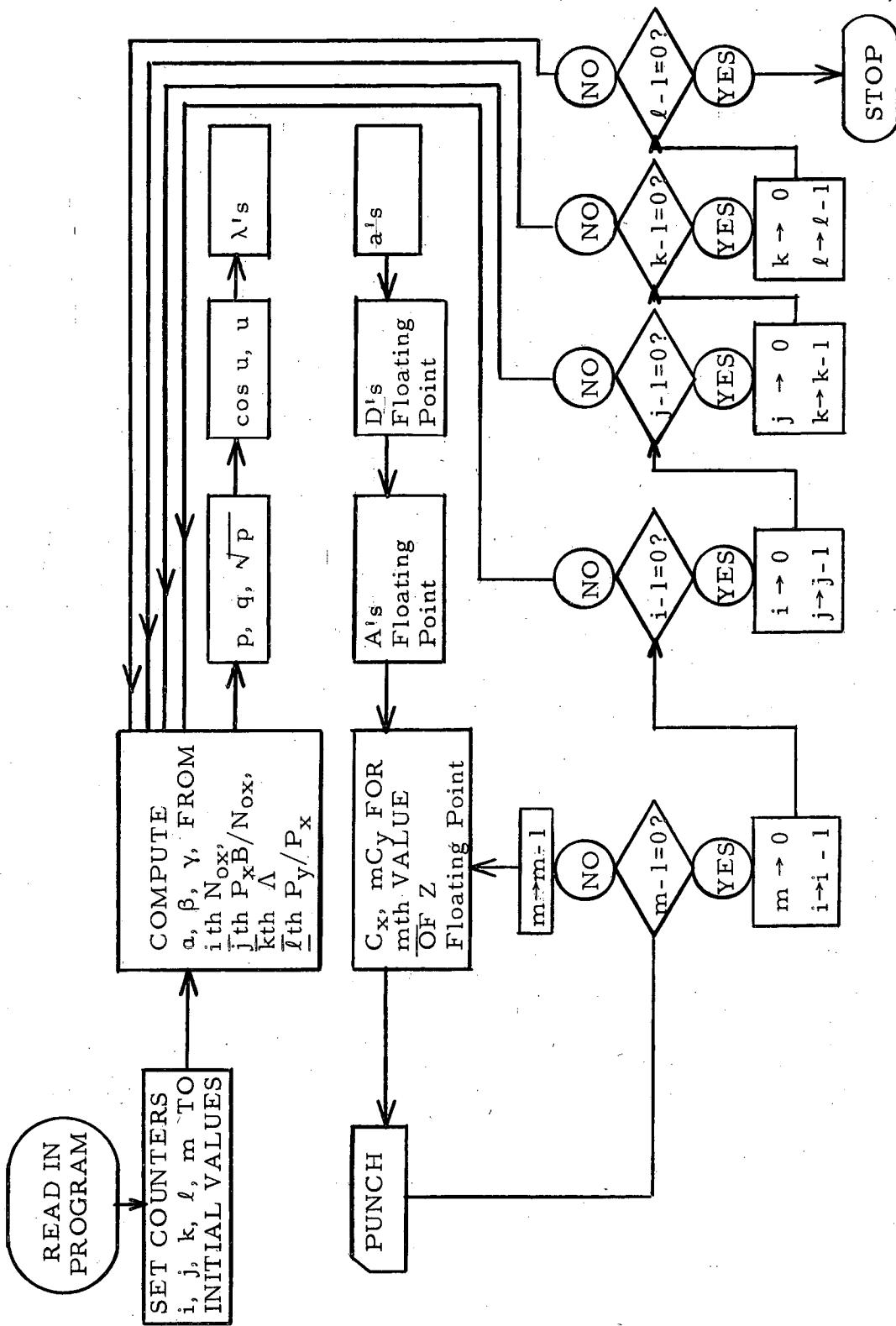


Fig. 1. Sequence of operations for evaluation of Eq. (6).

where, in each case,  $-1 \leq v \leq 1$ , and the constants C or C' are given by Hastings. Both these routines were accurate to at least six significant figures.

The output cards from the 701 were run through the 514 Reproducing Punch, with a special board to shift columns; and then through the 650 to convert the parameter ratios to independent values for the different parameters involved.

### TABLES

The following arrangement of variables has been adopted for presenting the numerical results of the foregoing computations:

$\Lambda$  0.625 (x2) 16;

$N_{ox}$  1 (x2) 8 (in three cases, extended to 64);

$P_x B$  computed as a ratio to  $N_{ox}$ : 0.125, 0.5, 1, 2, 8;

$P_y B$  computed as a ratio to  $P_x B$ : 0.25, 1, 4.

Values of  $\Lambda$  and  $N_{ox}$  are used as central subheadings for the respective blocks of columnar results. Concentration-profile values are given for the following positrons:

Z 0.00, 0.05, 0.15, 0.50, 0.85, 0.95, 1.00.

The dependent variables are the generalized concentration values.

$$\text{"X"} = (C_x - mC_y^1) / (1 - mC_y^1)$$

and

$$\text{"Y"} = m(C_y - C_y^1) / (1 - mC_y^1),$$

where "X" and "Y" are the abbreviated designations used as column headings in the tables.

As an aid in the development of simplified approximate relations, the following additional function has been computed:

$$(PB)_x = \left[ \frac{1}{P_x B} + \frac{1}{\Lambda P_y B} \right]^{-1}$$

The term  $(PB)_x$  is seen to be a composite Peclet group, reflecting the mixing contributions of  $P_x B$  and  $P_y B$ . Its values are given in the right-hand column of the tables.

A total of 675 combinations of the parameters were selected for computation; of these 45 fell beyond the scope of the program, and are therefore excluded from the tabulated results. Values for  $\Lambda = 1$ , with  $P_y = P_x$ , were obtained by manual averaging of the results from  $\Lambda = 0.99$  and  $\Lambda = 1.01$ . There is considerable duplication between the "X" and the "Y" tables, since "X" at  $\Lambda$  and  $N_{ox}$  is equal to  $(1 - "Y")$  at  $1/\Lambda$  and  $\Lambda N_{ox}$ . Allowing for this duplication, the tables contain about 750 independent profiles.

The computations were generally accurate to  $\pm 1$  in the fifth place; since the figures were not rounded in printing the final four-place tables, the results are usually accurate to  $\pm 1$  in the fourth place.

#### ACKNOWLEDGMENT

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P	X <sub>B</sub>	P	Y <sub>B</sub>	X=00	05	15	50	85	95	100	Y=00	05	15	50	85	95	100	PBX
				$\Lambda = .0625$	$N_{ox} = 1$						$\Lambda = .0625$	$N_{ox} = 1$						
0.125	0.031	5.394	5.365	5.314	5.176	5.109	5.103	5.103	5.103	5.103	0.0305	0.0305	0.0305	0.0305	0.0305	0.0305	0.0300	0.001
0.125	0.125	5.392	5.363	5.312	5.174	5.107	5.101	5.101	5.101	5.101	0.0305	0.0305	0.0305	0.0305	0.0305	0.0305	0.0287	0.007
0.125	0.500	5.384	5.356	5.304	5.166	5.099	5.093	5.093	5.093	5.093	0.0306	0.0306	0.0306	0.0306	0.0306	0.0306	0.0246	0.025
0.500	0.125	6.012	5.915	5.734	5.248	5.002	4.979	4.979	4.979	4.979	0.0313	0.0313	0.0313	0.0313	0.0313	0.0308	0.0296	0.007
0.500	0.500	6.007	5.909	5.728	5.241	4.993	4.970	4.967	4.967	4.967	0.0314	0.0314	0.0314	0.0314	0.0314	0.0262	0.0251	0.0245
0.500	2.000	5.991	5.893	5.711	5.220	4.969	4.945	4.945	4.945	4.945	0.0316	0.0316	0.0316	0.0316	0.0316	0.0254	0.0146	0.100
1.000	0.250	6.642	6.478	6.172	5.334	4.889	4.845	4.845	4.845	4.845	0.0322	0.0322	0.0321	0.0311	0.0311	0.0293	0.0286	0.015
1.000	1.000	6.635	6.470	6.163	5.321	4.871	4.827	4.827	4.827	4.827	0.0323	0.0323	0.0319	0.0284	0.0284	0.0228	0.0199	0.058
1.000	4.000	6.620	6.454	6.145	5.294	4.838	4.793	4.787	4.787	4.787	0.0325	0.0325	0.0311	0.0223	0.0223	0.0118	0.0089	0.200
2.000	0.500	7.482	7.235	6.773	5.475	4.731	4.652	4.641	4.641	4.641	0.0334	0.0334	0.0332	0.0311	0.0311	0.0276	0.0264	0.030
2.000	2.000	7.475	7.228	6.764	5.456	4.700	4.620	4.609	4.620	4.620	0.0336	0.0336	0.0328	0.0263	0.0263	0.0175	0.0148	0.117
2.000	8.000	7.465	7.216	6.750	5.430	4.665	4.583	4.572	4.583	4.583	0.0338	0.0338	0.0335	0.0312	0.0312	0.0191	0.0079	0.400
8.000	2.000	9.025	8.644	7.930	5.872	4.434	4.214	4.214	4.214	4.214	0.0363	0.0363	0.0362	0.0353	0.0353	0.0278	0.0180	0.123
8.000	8.000	9.024	8.642	7.925	5.849	4.392	4.168	4.168	4.168	4.168	0.0366	0.0366	0.0361	0.0334	0.0334	0.0194	0.0076	0.470
8.000	32.000	9.021	8.638	7.919	5.834	4.373	4.150	4.150	4.150	4.150	0.0367	0.0367	0.0354	0.0306	0.0306	0.0158	0.0047	0.008
				$\Lambda = .0625$	$N_{ox} = 2$						$\Lambda = .0625$	$N_{ox} = 2$						
0.250	0.062	4.169	4.098	3.968	3.625	3.457	3.442	3.442	3.442	3.442	0.0409	0.0409	0.0409	0.0406	0.0406	0.0400	0.0397	0.003
0.250	0.250	4.163	4.092	3.961	3.617	3.449	3.434	3.434	3.434	3.434	0.0410	0.0410	0.0409	0.0397	0.0397	0.0374	0.0365	0.014
0.250	1.000	4.142	4.071	3.939	3.592	3.422	3.406	3.406	3.406	3.406	0.0412	0.0412	0.0411	0.0407	0.0407	0.0365	0.0269	0.050
1.000	0.250	5.390	5.166	4.756	3.686	3.146	3.095	3.088	3.088	3.088	0.0431	0.0431	0.0430	0.0415	0.0415	0.0390	0.0381	0.015
1.000	1.000	5.377	5.152	4.741	3.660	3.111	3.058	3.051	3.051	3.051	0.0434	0.0434	0.0433	0.0427	0.0427	0.0377	0.0274	0.058
1.000	4.000	5.349	5.123	4.708	3.610	3.045	2.991	2.983	2.983	2.983	0.0438	0.0438	0.0435	0.0416	0.0416	0.0289	0.0150	0.200
2.000	0.500	6.381	6.030	5.394	3.745	2.885	2.797	2.785	2.785	2.785	0.0450	0.0450	0.0447	0.0415	0.0415	0.0365	0.0349	0.030
2.000	2.000	6.369	6.017	5.376	3.706	2.821	2.730	2.717	2.717	2.717	0.0455	0.0455	0.0453	0.0440	0.0440	0.0344	0.0222	0.117
2.000	8.000	6.349	5.995	5.350	3.653	2.750	2.656	2.644	2.644	2.644	0.0459	0.0459	0.0453	0.0416	0.0416	0.0238	0.0093	0.400
4.000	1.000	7.444	6.951	6.066	3.818	2.597	2.454	2.434	2.434	2.434	0.0472	0.0472	0.0464	0.0464	0.0464	0.0399	0.0309	0.061
4.000	4.000	7.437	6.942	6.052	3.767	2.506	2.358	2.337	2.337	2.337	0.0478	0.0478	0.0468	0.0468	0.0468	0.0287	0.0136	0.235
4.000	16.000	7.426	6.929	6.033	3.722	2.450	2.302	2.280	2.280	2.280	0.0482	0.0482	0.0468	0.0468	0.0468	0.0198	0.0062	0.017
16.000	4.000	9.040	8.305	7.015	3.900	2.170	1.885	1.830	1.830	1.830	0.0510	0.0510	0.0505	0.0474	0.0474	0.0288	0.0128	0.0077
16.000	16.000	9.039	8.302	7.005	3.850	2.104	1.819	1.764	1.764	1.764	0.0514	0.0514	0.0498	0.0424	0.0424	0.0188	0.0052	0.0014
16.000	64.000	9.036	8.297	6.995	3.831	2.086	1.802	1.747	1.747	1.747	0.0515	0.0515	0.0479	0.0387	0.0387	0.0163	0.0038	0.0003

P	X <sub>B</sub>	P	Y <sub>B</sub>	X-00	05	15	50	85	95	100	Y-00	05	15	50	85	95	100	PBX
•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
0.500	0.125	3507	3350	3067	2360	2029	1999	1995	0500	0500	0499	0490	0474	0469	0466	0466	0466	0.007
0.500	0.500	3493	3335	3051	2338	2000	1969	1965	0502	0501	0498	0465	0411	0393	0383	0383	0383	0.029
0.500	2.000	3454	3296	3009	2280	1927	1894	1890	0506	0505	0492	0392	0259	0220	0200	0200	0200	0.100
2.000	0.500	5266	4816	4039	2283	1511	1436	1426	0535	0535	0529	0485	0422	0403	0393	0393	0393	0.30
2.000	2.000	5249	4796	4014	2216	1399	1318	1307	0543	0540	0521	0387	0238	0200	0182	0182	0182	0.17
2.000	8.000	5220	4763	3971	2128	1284	1201	1190	0550	0540	0484	0244	0087	0054	0038	0038	0038	0.400
4.000	1.000	6385	5704	4569	2191	1203	1099	1084	0557	0555	0543	0451	0340	0309	0294	0294	0294	0.61
4.000	4.000	6373	5690	4543	2097	1048	0936	0921	0567	0560	0519	0295	0125	0091	0075	0075	0075	0.235
4.000	16.000	6354	5666	4506	2018	0966	0856	0841	0572	0550	0454	0179	0048	0024	0013	0013	0013	0.800
8.000	2.000	7470	6527	5004	2056	0919	0785	0764	0577	0573	0546	0377	0217	0180	0163	0163	0163	1.23
8.000	8.000	7463	6517	4977	1945	0772	0638	0618	0586	0571	0493	0200	0056	0033	0023	0023	0023	0.470
8.000	32.000	7453	6501	4946	1890	0730	0600	0580	0588	0547	0416	0137	0029	0012	0004	0004	0004	1.600
32.000	8.000	9049	7655	5497	1748	0550	0397	0362	0602	0584	0492	0173	0041	0023	0016	0016	0016	0.492
32.000	32.000	9048	7649	5468	1682	0507	0361	0328	0603	0554	0400	0109	0018	0007	0002	0002	0002	1.882
•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
1.000	0.250	3363	3050	2525	1427	1005	0968	0963	0564	0564	0535	0497	0486	0486	0480	0480	0480	0.15
1.000	1.000	3342	3028	2499	1370	0913	0871	0866	0570	0569	0557	0468	0357	0326	0310	0310	0310	0.58
1.000	4.000	3297	2980	2441	1259	0760	0714	0708	0580	0574	0536	0322	0147	0108	0090	0090	0090	0.200
4.000	1.000	5286	4430	3150	1124	0556	0503	0495	0594	0591	0573	0455	0332	0302	0287	0287	0287	0.61
4.000	4.000	5271	4411	3112	0977	0344	0286	0278	0607	0597	0536	0257	0093	0066	0054	0054	0054	0.235
4.000	16.000	5241	4373	3049	0862	0255	0204	0197	0612	0579	0439	0120	0024	0011	0006	0006	0006	0.800
8.000	2.000	6404	5128	3338	0904	0338	0282	0272	0608	0601	0561	0348	0186	0154	0139	0139	0139	0.123
8.000	8.000	6392	5108	3287	0729	0165	0118	0111	0618	0594	0477	0132	0025	0014	0010	0010	0010	0.470
8.000	32.000	6372	5077	3226	0657	0133	0093	0087	0619	0553	0361	0069	0009	0003	0001	0001	0001	1.600
16.000	4.000	7481	5730	3420	0673	0163	0116	0107	0618	0603	0522	0207	0063	0044	0036	0036	0036	0.246
16.000	16.000	7473	5711	3354	0526	0081	0049	0044	0622	0573	0388	0062	0007	0003	0001	0001	0001	0.941
16.000	64.000	7462	5687	3303	0492	0071	0043	0038	0622	0515	0299	0042	0004	0001	0001	0001	0001	3.200
64.000	16.000	9051	6492	3376	0352	0036	0018	0014	0623	0565	0353	0039	0003	0001	0001	0001	0001	0.984
64.000	64.000	9050	6475	3317	0318	0030	0015	0011	0623	0495	0254	0023	0001	0001	0001	0001	0001	3.764

P	XB	P	YB	X-00	05	15	50	85	95	100	Y-00	05	15	50	85	95	100	PBX
				$\Lambda = .1250$	$N_{ox} = 1$						$\Lambda = .1250$		$N_{ox} = 1$					
0.125	0.031	5529	5502	5452	5318	5253	5248	5247	5247	5247	0.592	0.592	0.590	0.585	0.584	0.583	0.003	
0.125	0.125	5526	5498	5448	5315	5249	5244	5243	5243	5243	0.593	0.593	0.584	0.567	0.561	0.557	0.013	
0.125	0.500	5512	5485	5434	5300	5234	5228	5228	5228	5228	0.596	0.596	0.592	0.561	0.561	0.557	0.041	
0.500	0.125	6132	6037	5862	5390	5151	5128	5126	5126	5126	0.608	0.608	0.607	0.598	0.581	0.574	0.015	
0.500	0.500	6121	6026	5850	5376	5134	5111	5108	5108	5108	0.610	0.610	0.607	0.573	0.511	0.489	0.055	
0.500	2.000	6092	5996	5818	5336	5088	5065	5062	5062	5062	0.617	0.617	0.615	0.603	0.497	0.287	0.0261	0.166
1.000	0.250	6744	6585	6288	5474	5041	4999	4994	4994	4994	0.625	0.625	0.623	0.604	0.569	0.556	0.549	0.030
1.000	1.000	6730	6571	6272	5450	5008	4965	4960	4960	4960	0.629	0.629	0.621	0.555	0.444	0.407	0.388	0.111
1.000	4.000	6702	6541	6238	5401	4946	4901	4895	4895	4895	0.637	0.637	0.634	0.610	0.440	0.235	0.147	0.333
2.000	0.500	7560	7321	6873	5613	4886	4809	4799	4799	4799	0.650	0.649	0.645	0.605	0.536	0.513	0.500	0.600
2.000	2.000	7548	7308	6856	5577	4830	4750	4739	4739	4739	0.657	0.655	0.640	0.516	0.343	0.291	0.264	0.222
2.000	8.000	7530	7288	6831	5528	4763	4681	4669	4669	4669	0.666	0.658	0.614	0.380	0.160	0.0101	0.072	0.666
8.000	2.000	9059	8691	8001	5998	4578	4359	4323	4323	4323	0.709	0.709	0.706	0.689	0.544	0.353	0.298	0.242
8.000	8.000	9057	8688	7993	5956	4498	4272	4235	4235	4235	0.720	0.711	0.657	0.387	0.153	0.095	0.068	0.888
8.000	32.000	9051	8680	7981	5929	4463	4236	4199	4199	4199	0.724	0.698	0.606	0.317	0.096	0.042	0.016	2.666
				$\Lambda = .1250$	$N_{ox} = 2$						$\Lambda = .1250$		$N_{ox} = 2$					
0.250	0.062	4397	4329	4203	3873	3712	3697	3696	3696	3696	0.787	0.787	0.786	0.781	0.769	0.764	0.762	0.007
0.250	0.250	4385	4317	4191	3859	3696	3682	3680	3680	3680	0.789	0.789	0.787	0.764	0.720	0.704	0.696	0.027
0.250	1.000	4348	4279	4151	3814	3646	3631	3629	3629	3629	0.796	0.795	0.786	0.706	0.569	0.522	0.498	0.833
1.000	0.250	5576	5361	4968	3938	3416	3366	3360	3360	3360	0.829	0.829	0.826	0.799	0.750	0.733	0.724	0.300
1.000	1.000	5552	5336	4939	3891	3351	3298	3292	3292	3292	0.838	0.838	0.826	0.812	0.730	0.579	0.531	0.506
1.000	4.000	5503	5285	4881	3800	3231	3175	3168	3168	3168	0.853	0.853	0.848	0.817	0.571	0.299	0.224	0.333
2.000	0.500	6532	6196	5586	3997	3161	3074	3063	3063	3063	0.867	0.866	0.859	0.799	0.703	0.672	0.656	0.600
2.000	2.000	6511	6173	5556	3926	3044	2951	2938	2938	2938	0.882	0.882	0.879	0.855	0.670	0.435	0.368	0.334
2.000	8.000	6478	6136	5508	3830	2912	2815	2801	2801	2801	0.899	0.899	0.887	0.817	0.476	0.191	0.120	0.086
4.000	1.000	7557	7086	6238	4068	2865	2723	2703	2703	2703	0.912	0.910	0.895	0.772	0.599	0.547	0.521	0.121
4.000	4.000	7546	7072	6215	3977	2699	2546	2524	2524	2524	0.934	0.926	0.877	0.569	0.274	0.202	0.168	0.444
4.000	16.000	7528	7050	6181	3895	2593	2438	2416	2416	2416	0.947	0.922	0.806	0.402	0.130	0.067	0.037	1.333
16.000	4.000	9088	8390	7160	4134	2376	2077	2019	2019	2019	0.997	0.988	0.928	0.573	0.259	0.156	0.056	0.484
16.000	16.000	9087	8386	7143	4043	2251	1950	1892	1892	1892	1.012	1.012	0.982	0.384	0.110	0.055	0.030	1.777
16.000	64.000	9081	8376	7124	4006	2216	1916	1859	1859	1859	1.016	1.016	0.948	0.773	0.335	0.081	0.007	5.333

P	X <sub>B</sub>	P	Y <sub>B</sub>	X-00	05	15	50	85	95	100	Y-00	05	15	50	85	95	100	PBX
				$\Lambda = .1250$	$N_{ox} = 4$						$\Lambda = .1250$	$N_{ox} = 4$						
0.500	0.125	3.812	3.662	3392	2717	2399	2370	2366	0.954	0.953	0.952	0.935	0.906	0.895	0.890	0.015		
0.500	0.500	3.787	3.636	3364	2677	2347	2316	2312	0.960	0.959	0.953	0.891	0.789	0.754	0.736	0.055		
0.500	2.000	3.720	3.568	3291	2574	2216	2182	2177	0.977	0.974	0.951	0.765	0.512	0.434	0.395	0.166		
2.000	0.500	5501	5073	4334	2647	1887	1812	1802	1.024	1.023	1.013	0.930	0.810	0.773	0.754	0.060		
2.000	2.000	5475	5044	4293	2530	1687	1600	1588	1.051	1.046	1.010	0.756	0.473	0.398	0.361	0.222		
2.000	8.000	5426	4989	4220	2372	1476	1384	1372	1.078	1.059	0.955	0.500	0.186	0.116	0.083	0.666		
4.000	1.000	6574	5929	4849	2552	1550	1439	1424	1.071	1.068	1.045	0.872	0.659	0.600	0.571	0.121		
4.000	4.000	6559	5910	4811	2387	1268	1143	1125	1.109	1.097	1.019	0.595	0.261	0.190	0.157	0.444		
4.000	16.000	6527	5870	4747	2242	1111	0988	0971	1.128	1.088	0.908	0.376	0.106	0.054	0.029	1.333		
8.000	2.000	7611	6720	5274	2404	1202	1051	1027	1.121	1.114	1.064	0.743	0.433	0.361	0.327	0.242		
8.000	8.000	7603	6707	5234	2205	0929	0774	0750	1.156	1.129	0.982	0.418	0.123	0.073	0.052	0.888		
8.000	32.000	7585	6679	5178	2099	0845	0697	0674	1.165	1.089	0.842	0.294	0.065	0.027	0.010	2.666		
32.000	8.000	9108	7798	5750	2021	0692	0508	0465	1.191	1.158	0.984	0.369	0.094	0.054	0.038	0.969		
32.000	32.000	9106	7787	5698	1892	0603	0433	0394	1.200	1.107	0.815	0.239	0.043	0.017	0.006	3.555		
		$\Lambda = .1250$	$N_{ox} = 8$						$\Lambda = .1250$	$N_{ox} = 8$								
1.000	0.250	3711	3415	2916	1865	1449	1412	1408	1.073	1.073	1.067	1.018	0.947	0.925	0.914	0.030		
1.000	1.000	3680	3382	2876	1767	1288	1242	1235	1.095	1.092	1.070	0.905	0.695	0.635	0.605	0.111		
1.000	4.000	3610	3306	2784	1578	1018	0963	0955	1.130	1.119	1.049	0.655	0.317	0.236	0.196	0.333		
4.000	1.000	5552	4744	3529	1544	0912	0845	0835	1.145	1.140	1.106	0.883	0.650	0.591	0.562	0.121		
4.000	4.000	5536	4722	3476	1289	0526	0448	0436	1.195	1.176	1.063	0.534	0.207	0.148	0.123	0.444		
4.000	16.000	5485	4657	3366	1073	0349	0282	0273	1.215	1.153	0.894	0.273	0.060	0.030	0.016	1.333		
8.000	2.000	6618	5416	3718	1283	0588	0505	0491	1.188	1.176	1.101	0.697	0.382	0.316	0.287	0.242		
8.000	8.000	6604	5391	3637	0964	0255	0188	0177	1.227	1.184	0.965	0.297	0.066	0.037	0.026	0.888		
8.000	32.000	6568	5334	3523	0817	0183	0130	0121	1.234	1.112	0.751	0.164	0.025	0.009	0.003	2.666		
16.000	4.000	7638	5994	3798	0974	0297	0220	0205	1.224	1.197	1.044	0.440	0.145	0.101	0.083	0.484		
16.000	16.000	7626	5962	3679	0688	0123	0077	0069	1.241	1.151	0.801	0.150	0.020	0.009	0.004	1.777		
16.000	64.000	7606	5918	3583	0614	0100	0061	0054	1.243	1.043	0.631	0.012	0.011	0.003	0.003	5.333		
64.000	16.000	9113	6712	3709	0485	0061	0032	0025	1.246	1.137	0.737	0.100	0.010	0.004	0.002	1.939		
64.000	64.000	9110	6679	3596	0410	0044	0022	0017	1.247	1.106	0.543	0.060	0.004	0.001	0.001	7.111		







P	XB	P	YB	X-00	05	15	50	85	95	100	Y-00	05	15	50	85	95	100	PBX
				$\Lambda = .5000$	$N_{ox} = 1$						$\Lambda = .5000$	$N_{ox} = 1$						
0•125	0•031	0•6202	•6179	•6137	•6023	•5968	•5963	•5962	•2017	•2016	•2009	•1994	•1988	•1985	•1985	•1985	•0•013	
0•125	0•125	•6192	•6169	•6126	•6012	•5956	•5951	•5950	•2024	•2023	•2021	•1992	•1935	•1913	•1902	•0•041		
0•125	0•500	•6153	•6130	•6086	•5970	•5912	•5907	•5906	•2046	•2045	•2035	•1929	•1727	•1653	•1613	•0•083		
0•500	0•125	•6721	•6641	•6492	•6091	•5886	•5867	•5865	•2067	•2066	•2064	•2033	•1973	•1951	•1939	•0•055		
0•500	0•500	•6692	•6611	•6460	•6050	•5837	•5817	•5815	•2092	•2090	•2079	•1966	•1755	•1680	•1639	•0•166		
0•500	2•000	•6613	•6531	•6375	•5943	•5710	•5688	•5685	•2157	•2151	•2112	•1764	•1220	•1040	•0946	•0•333		
1•000	0•250	•7248	•7113	•6862	•6169	•5795	•5759	•5754	•2122	•2121	•2115	•2051	•1932	•1889	•1866	•0•111		
1•000	1•000	•7213	•7077	•6820	•6102	•5703	•5663	•5658	•2170	•2167	•2144	•1922	•1548	•1421	•1354	•0•333		
1•000	4•000	•7141	•7001	•6735	•5970	•5528	•5483	•5477	•2261	•2250	•2172	•1615	•0897	•0678	•0565	•0•666		
2•000	0•500	•7950	•7749	•7371	•6295	•5659	•5590	•5581	•2209	•2207	•2194	•2061	•1829	•1750	•1708	•0•222		
2•000	2•000	•7925	•7721	•7335	•6203	•5502	•5424	•5413	•2293	•2286	•2237	•1828	•1237	•1052	•0957	•0•666		
2•000	8•000	•7882	•7674	•7274	•6073	•5310	•5223	•5211	•2393	•2369	•2227	•1452	•0646	•0414	•0296	•1•333		
8•000	2•000	•9232	•8931	•8362	•6648	•5324	•5107	•5071	•2463	•2455	•2397	•1922	•1271	•1076	•0979	•0•888		
8•000	8•000	•9235	•8934	•8357	•6548	•5096	•4856	•4816	•2591	•2562	•2391	•1489	•0625	•0395	•0282	•2•666		
8•000	32•000	•9221	•8915	•8328	•6470	•4985	•4739	•4698	•2644	•2563	•2268	•1272	•0413	•0185	•0071	•5•333		
				$\Lambda = .5000$	$N_{ox} = 2$				$\Lambda = .5000$	$N_{ox} = 2$								
0•250	0•062	•5460	•5405	•5303	•5035	•4903	•4891	•4890	•2554	•2552	•2533	•2495	•2481	•2473	•0•027			
0•250	0•250	•5431	•5376	•5273	•5000	•4863	•4850	•4849	•2575	•2574	•2567	•2494	•2353	•2301	•2273	•0•083		
0•250	1•000	•5342	•5285	•5179	•4890	•4738	•4724	•4722	•2638	•2635	•2610	•2364	•1926	•1770	•1688	•0•166		
1•000	0•250	•6444	•6271	•5953	•5112	•4676	•4633	•4627	•2685	•2684	•2675	•2588	•2432	•2378	•2349	•0•111		
1•000	1•000	•6398	•6223	•5897	•5007	•4515	•4464	•4458	•2770	•2766	•2733	•2435	•1955	•1795	•1710	•0•333		
1•000	4•000	•6302	•6121	•5780	•4801	•4221	•4159	•4151	•2924	•2908	•2804	•2082	•1173	•0890	•0743	•0•666		
2•000	0•500	•7242	•6974	•6485	•5181	•4457	•4378	•4368	•2815	•2813	•2793	•2605	•2300	•2198	•2145	•0•222		
2•000	2•000	•7218	•6947	•6445	•5032	•4172	•4073	•4059	•2970	•2960	•2888	•2323	•1559	•1326	•1206	•0•666		
2•000	8•000	•7164	•6887	•6362	•4816	•3834	•3720	•3704	•3147	•3113	•2911	•1868	•0837	•0539	•0387	•1•333		
4•000	1•000	•8096	•7727	•7059	•5268	•4163	•4021	•4000	•2999	•2993	•2948	•2567	•2015	•1844	•1756	•0•444		
4•000	4•000	•8105	•7736	•7054	•5089	•3753	•3574	•3548	•3225	•3203	•3057	•2114	•1103	•0827	•0689	•1•333		
4•000	16•000	•8082	•7707	•6999	•4896	•3459	•3268	•3240	•3379	•3308	•2971	•1685	•0616	•0329	•0184	•2•666		
16•000	4•000	•9333	•8820	•7899	•5378	•3528	•3159	•3084	•3457	•3430	•3256	•2171	•1075	•0796	•0662	•1•777		
16•000	16•000	•9343	•8834	•7894	•5180	•3179	•2787	•2708	•3644	•3558	•3155	•1674	•0553	•0286	•0159	•5•333		
16•000	64•000	•9333	•8816	•7853	•5080	•3060	•2668	•2589	•3699	•3507	•3153	•1513	•0423	•0165	•0039	•10•666		

P	X <sub>B</sub>	P	Y <sub>B</sub>	X-00	05	15	50	85	95	100	Y-00	05	15	50	85	95	100	PBX
•				Λ = .5000	N <sub>ox</sub> = 4						Λ = .50000	N <sub>ox</sub> = 4						
0.500	0.125	5175	5059	4848	4313	4055	4031	4028	2985	2979	2928	2837	2805	2788	0.055			
0.500	0.500	5130	5012	4796	4230	3936	3908	3904	3047	3045	3026	2844	2532	2423	2365	0.166		
0.500	2.000	5018	4896	4670	4031	3660	3621	3616	3191	3183	3121	2619	1854	1590	1448	0.333		
2.000	0.500	6569	6242	5670	4303	3608	3532	3521	3239	3235	3206	2957	2591	2475	2415	0.222		
2.000	2.000	6578	6249	5660	4106	3171	3058	3042	3478	3464	3364	2643	1756	1494	1359	0.666		
2.000	8.000	6540	6204	5582	3810	2684	2546	2527	3736	3688	3421	2142	971	634	456	1.333		
4.000	1.000	7459	6979	6161	4264	3221	3084	3063	3468	3458	3392	2882	2225	2034	1937	0.444		
4.000	4.000	7514	7039	6203	4000	2585	2391	2362	3818	3785	3576	2359	1200	900	750	1.333		
4.000	16.000	7494	7010	6127	3692	2151	1945	1914	4042	3939	3473	1846	659	356	200	2.666		
8.000	2.000	8303	7667	6608	4189	2733	2498	2458	3770	3749	3610	2678	1673	1409	1280	0.888		
8.000	8.000	8357	7735	6649	3839	2048	1768	1720	4139	4068	3680	1992	754	473	338	2.666		
8.000	32.000	8341	7704	6558	3569	1753	1478	1432	4283	4090	3434	1614	465	209	0081	5.333		
32.000	8.000	9423	8567	7154	3813	1817	1422	1320	4339	4254	3799	1923	665	405	287	3.555		
32.000	32.000	9431	8573	7082	3472	1473	1102	1008	4494	4261	3485	1481	370	155	0059	10.666		
•				Λ = .5000	N <sub>ox</sub> = 8				Λ = .5000	N <sub>ox</sub> = 8								
1.000	0.250	5247	5022	4641	3796	3415	3377	3372	3313	3294	3152	2941	2874	2839	0.111			
1.000	1.000	5250	5024	4628	3644	3089	3025	3016	3491	3483	3425	2978	2371	2177	2075	0.333		
1.000	4.000	5222	4991	4569	3371	2589	2492	2478	3760	3734	3572	2625	1562	1210	1015	0.666		
4.000	1.000	6806	6222	5319	3578	2692	2565	2545	3727	3713	3618	2985	2272	2074	1976	0.444		
4.000	4.000	6936	6367	5432	3211	1850	1654	1623	4188	4140	3854	2402	1194	898	749	1.333		
4.000	16.000	6927	6346	5328	2768	1306	1107	1076	4461	4319	3708	1807	623	342	194	2.666		
8.000	2.000	7695	6869	5647	3366	2103	1886	1847	4076	4043	3842	2702	1645	1383	1256	0.888		
8.000	8.000	7802	6998	5708	2797	1207	967	925	4537	4432	3891	1882	661	413	295	2.666		
8.000	32.000	7769	6933	5519	2358	848	639	603	4697	4415	3517	1390	356	160	0063	5.333		
16.000	4.000	8486	7419	5890	3014	1456	1171	1110	4444	4375	3985	2231	982	717	596	1.777		
16.000	16.000	8531	7468	5789	2304	0759	0530	0484	4757	4544	3672	1381	345	172	095	5.333		
16.000	64.000	8500	7388	5572	1975	0569	0377	0339	4830	4360	3261	1070	0212	0079	0019	10.666		
64.000	64.000	9475	8018	5903	2016	0569	0358	0294	4852	4595	3581	1168	0252	0118	0064	7.111		
64.000	9474	7962	5631	1607	0373	0217	0172	0172	4913	4338	3052	0816	0131	0044	0010	21.333		

P	X <sub>B</sub>	P	Y <sub>B</sub>	X=00	05	15	50	85	95	100	Y=00	05	15	50	85	95	100	PBX
$\Delta = 1$																		
0.125	0.031	• 6838	• 6819	• 6783	• 6689	• 6643	• 6638	• 6638	• 6638	• 6638	• 3361	• 3360	• 3348	• 3323	• 3314	• 3309	• 0.024	
0.125	0.125	• 6823	• 6804	• 6768	• 6673	• 6625	• 6621	• 6621	• 6621	• 6621	• 3378	• 3377	• 3373	• 3326	• 3194	• 3175	• 0.062	
0.125	0.500	• 6749	• 6729	• 6693	• 6593	• 6542	• 6537	• 6537	• 6537	• 6537	• 3461	• 3458	• 3442	• 3269	• 2932	• 2807	• 0.100	
0.500	0.125	• 7276	• 7210	• 7086	• 6751	• 6579	• 6563	• 6561	• 6561	• 6561	• 3440	• 3439	• 3435	• 3384	• 3285	• 3248	• 3229	• 0.100
0.500	0.500	• 7239	• 7171	• 7045	• 6697	• 6512	• 6494	• 6492	• 6492	• 6492	• 3507	• 3504	• 3486	• 3302	• 2954	• 2828	• 2760	• 0.250
0.500	2.000	• 7053	• 6980	• 6843	• 6452	• 6230	• 6207	• 6204	• 6204	• 6204	• 3788	• 3779	• 3716	• 3149	• 2220	• 1899	• 1728	• 0.400
1.000	1.000	• 7683	• 7569	• 7355	• 6739	• 6383	• 6346	• 6341	• 6341	• 6341	• 3658	• 3653	• 3616	• 3260	• 2644	• 2429	• 2316	• 0.500
1.000	4.000	• 7470	• 7343	• 7107	• 6384	• 5938	• 5890	• 5885	• 5885	• 5885	• 4115	• 4095	• 3974	• 3052	• 1771	• 1349	• 1128	• 0.800
2.000	0.500	• 8855	• 8729	• 8528	• 7896	• 7543	• 7476	• 7495	• 7495	• 7495	• 2575	• 2560	• 2557	• 2396	• 2160	• 2043	• 2020	• 0.400
2.000	2.000	• 8301	• 8134	• 7813	• 6835	• 6187	• 6110	• 6100	• 6100	• 6100	• 3899	• 3888	• 3812	• 3164	• 2186	• 1865	• 1698	• 1.000
2.000	8.000	• 8200	• 8021	• 7673	• 6559	• 5784	• 5691	• 5678	• 5678	• 5678	• 4316	• 4279	• 4058	• 2800	• 1327	• 0862	• 0618	• 1.600
8.000	2.000	• 9482	• 9285	• 8909	• 7686	• 6604	• 6432	• 6407	• 6407	• 6407	• 3617	• 3612	• 3545	• 2903	• 1941	• 1663	• 1520	• 1.600
8.000	8.000	• 9420	• 9190	• 8741	• 7202	• 5787	• 5533	• 5490	• 5490	• 5490	• 4508	• 4466	• 4212	• 2797	• 1258	• 0809	• 0579	• 4.000
8.000	32.000	• 9324	• 9057	• 8538	• 6719	• 5042	• 4740	• 4689	• 4689	• 4689	• 5269	• 5132	• 4644	• 2819	• 0983	• 0441	• 0160	• 6.400
$\Delta = 1$																		
$N_{ox} = 2$																		
0.250	0.062	• 6378	• 6334	• 6253	• 6038	• 5932	• 5922	• 5921	• 5921	• 5921	• 4079	• 4076	• 4045	• 3985	• 3963	• 3951	• 0.049	
0.250	0.250	• 6344	• 6300	• 6217	• 5995	• 5881	• 5870	• 5869	• 5869	• 5869	• 4130	• 4129	• 4118	• 4004	• 3782	• 3699	• 3655	• 0.125
0.250	1.000	• 6166	• 6118	• 6030	• 5782	• 5643	• 5628	• 5627	• 5627	• 5627	• 4370	• 4364	• 4327	• 3956	• 3264	• 3007	• 2867	• 0.200
1.000	0.250	• 7060	• 6933	• 6665	• 5926	• 5555	• 5514	• 5526	• 5526	• 5526	• 4529	• 4544	• 4527	• 4358	• 4112	• 4018	• 3987	• 0.200
1.000	1.000	• 7158	• 7019	• 6759	• 6016	• 5573	• 5525	• 5519	• 5519	• 5519	• 4480	• 4474	• 4426	• 3983	• 3240	• 2979	• 2840	• 0.500
1.000	4.000	• 7064	• 6919	• 6640	• 5779	• 5206	• 5140	• 5131	• 5131	• 5131	• 4864	• 4843	• 4702	• 3691	• 2233	• 1719	• 1440	• 0.800
2.000	0.500	• 7823	• 7612	• 7223	• 6154	• 5524	• 5451	• 5441	• 5441	• 5441	• 4545	• 4541	• 4509	• 4218	• 3741	• 3577	• 3491	• 0.400
2.000	2.000	• 7873	• 7665	• 7271	• 6082	• 5264	• 5163	• 5156	• 5156	• 5156	• 4850	• 4836	• 4735	• 3917	• 2728	• 2334	• 2126	• 1.000
2.000	8.000	• 7757	• 7533	• 7103	• 5685	• 4633	• 4497	• 4475	• 4475	• 4475	• 5520	• 5470	• 5198	• 3674	• 1837	• 1214	• 0873	• 1.600
4.000	1.000	• 8352	• 8016	• 7432	• 5765	• 4611	• 4420	• 4419	• 4419	• 4419	• 5661	• 5636	• 5568	• 4919	• 3937	• 3587	• 3443	• 0.800
4.000	4.000	• 8639	• 8372	• 7863	• 6221	• 4887	• 4689	• 4659	• 4659	• 4659	• 5340	• 5310	• 5112	• 3777	• 2136	• 1627	• 1360	• 2.000
4.000	16.000	• 8642	• 8372	• 7840	• 6017	• 4483	• 4252	• 4217	• 4217	• 4217	• 5779	• 5688	• 5256	• 3398	• 1421	• 0787	• 0443	• 3.200
16.000	4.000	• 9516	• 9147	• 8473	• 6369	• 4386	• 3927	• 3832	• 3832	• 3832	• 6148	• 6107	• 5862	• 4230	• 2286	• 1720	• 1434	• 3.200
16.000	16.000	• 9597	• 9280	• 8663	• 6525	• 4412	• 3918	• 3814	• 3814	• 3814	• 6184	• 6081	• 5587	• 3473	• 1336	• 0719	• 0402	• 8.000
16.000	64.000	• 9535	• 9171	• 8456	• 5956	• 3484	• 2904	• 2782	• 2782	• 2782	• 7182	• 6925	• 6214	• 3714	• 1212	• 0484	• 0104	• 12.800

P	X <sub>B</sub>	P	Y <sub>B</sub>	X-00	05	15	50	85	95	100	Y-00	05	15	50	85	95	100	PBX
0.500	0.125	• 6235	• 6145	• 5980	• 5554	• 5341	• 5322	• 5320	• 4694	• 4687	• 4609	• 4468	• 4418	• 4392	0.100			
0.500	0.500	• 6247	• 6156	• 5987	• 5526	• 5267	• 5239	• 5236	• 4763	• 4759	• 4732	• 4473	• 4012	• 3843	• 3752	0.250		
0.500	2.000	• 6090	• 5994	• 5810	• 5253	• 4885	• 4843	• 4837	• 5157	• 5146	• 5069	• 4423	• 3302	• 2860	• 2610	0.400		
2.000	0.500	• 7338	• 7084	• 6630	• 5484	• 4824	• 4744	• 4734	• 5300	• 5295	• 5249	• 4874	• 4304	• 4116	• 4018	0.400		
2.000	2.000	• 7548	• 7310	• 6871	• 5565	• 4613	• 4484	• 4466	• 5533	• 5514	• 5386	• 4434	• 3128	• 2688	• 2451	1.000		
2.000	8.000	• 7595	• 7357	• 6896	• 5352	• 4104	• 3926	• 3899	• 6097	• 6043	• 5742	• 4164	• 2239	• 1521	• 1104	1.600		
4.000	1.000	• 8195	• 7852	• 7256	• 5728	• 4688	• 4534	• 4510	• 5486	• 5473	• 5382	• 4667	• 3689	• 3383	• 3224	0.800		
4.000	4.000	• 8384	• 8072	• 7493	• 5666	• 4113	• 3863	• 3823	• 6175	• 6136	• 5886	• 4333	• 2506	• 1927	• 1615	2.000		
4.000	16.000	• 8456	• 8152	• 7553	• 5487	• 3647	• 3342	• 3293	• 6703	• 6595	• 6099	• 4021	• 1794	• 1030	• 0587	3.200		
8.000	2.000	• 8879	• 8456	• 7731	• 5783	• 4188	• 3884	• 3829	• 6165	• 6138	• 5957	• 4695	• 3134	• 2667	• 2428	1.600		
8.000	8.000	• 9069	• 8709	• 8036	• 5796	• 3672	• 3253	• 3177	• 6821	• 6746	• 6327	• 4203	• 1963	• 1290	• 0930	4.000		
8.000	32.000	• 9110	• 8758	• 8061	• 5625	• 3290	• 2823	• 2738	• 7259	• 7073	• 6408	• 3971	• 1499	• 0726	• 0289	6.400		
2.000	32.000	• 9749	• 9360	• 8600	• 5947	• 3294	• 2571	• 2368	• 7630	• 7428	• 6704	• 4052	• 1398	• 0639	• 0250	16.000		
1.000	0.250	• 6411	• 6241	• 5948	• 5263	• 4911	• 4873	• 4867	• 5129	• 5126	• 5101	• 4896	• 4585	• 4482	• 4428	0.200		
1.000	1.000	• 6545	• 6379	• 6080	• 5243	• 4673	• 4600	• 4589	• 5410	• 5399	• 5325	• 4756	• 3919	• 3619	• 3453	0.500		
1.000	4.000	• 6526	• 6356	• 6030	• 4960	• 4091	• 3964	• 3945	• 6051	• 6022	• 5846	• 4791	• 3289	• 2632	• 2223	0.800		
4.000	1.000	• 7800	• 7396	• 6715	• 5224	• 4145	• 3984	• 3963	• 6131	• 6119	• 5934	• 5079	• 3984	• 3709	• 3546	0.800		
4.000	4.000	• 8182	• 7838	• 7228	• 5337	• 3641	• 3337	• 3286	• 6713	• 6662	• 6358	• 4662	• 2771	• 2160	• 1817	2.000		
4.000	16.000	• 8345	• 8021	• 7391	• 5207	• 3151	• 2764	• 2696	• 7299	• 7176	• 6634	• 4454	• 2144	• 1297	• 0754	3.200		
8.000	2.000	• 8601	• 8094	• 7303	• 5380	• 3760	• 3423	• 3360	• 6636	• 6598	• 6361	• 4916	• 3281	• 2800	• 2550	1.600		
8.000	8.000	• 8929	• 8526	• 7801	• 5422	• 3118	• 2626	• 2532	• 7467	• 7373	• 6880	• 4577	• 2197	• 1473	• 1070	4.000		
8.000	32.000	• 9024	• 8641	• 7887	• 5253	• 2674	• 2108	• 1997	• 7999	• 7789	• 7064	• 4429	• 1763	• 0902	• 0371	6.400		
6.000	4.000	• 9238	• 8693	• 7842	• 5521	• 3331	• 2787	• 2663	• 7333	• 7265	• 6875	• 4810	• 2616	• 1983	• 1658	3.200		
6.000	16.000	• 9430	• 9002	• 8207	• 5485	• 2776	• 2098	• 1942	• 8056	• 7900	• 7222	• 4514	• 1792	• 0997	• 0569	8.000		
6.000	64.000	• 9474	• 9061	• 8238	• 5360	• 2492	• 1769	• 1601	• 8396	• 8097	• 7278	• 4400	• 1518	• 0663	• 0171	12.800		
64.000	64.000	• 9857	• 9419	• 8556	• 5538	• 2520	• 1661	• 1347	• 8651	• 8337	• 7478	• 4460	• 1442	• 0580	• 0142	32.000		





P	X	B	P	Y	B	X-00	05	15	50	85	95	100	Y-00	05	15	50	85	95	100	PBX	
$\Lambda = 2$																					
0.500	0.125	7457	•	7395	•	7282	•	6985	•	6828	•	6813	•	6811	•	6377	•	6376	•	6265	•
0.500	0.500	7463	•	7400	•	7284	•	6943	•	6729	•	6705	•	6701	•	6596	•	6592	•	6257	•
0.500	2.000	7477	•	7415	•	7292	•	6884	•	6572	•	6531	•	6525	•	6949	•	6939	•	6286	•
2.000	0.500	8377	•	8220	•	7938	•	7150	•	6609	•	6537	•	6526	•	6946	•	6939	•	6459	•
2.000	2.000	8578	•	8438	•	8167	•	7220	•	6354	•	6220	•	6199	•	7582	•	7459	•	5771	•
2.000	8.000	8743	•	8616	•	8354	•	7297	•	6157	•	5956	•	5923	•	8152	•	8113	•	7896	•
4.000	1.000	8984	•	8789	•	8437	•	7374	•	6427	•	6265	•	6239	•	7520	•	7507	•	7410	•
4.000	4.000	9250	•	9101	•	8805	•	7597	•	6145	•	5859	•	5811	•	8376	•	8345	•	8149	•
4.000	16.000	9403	•	9282	•	9017	•	7768	•	6014	•	5624	•	5555	•	8889	•	8828	•	8543	•
8.000	2.000	9498	•	9306	•	8957	•	7744	•	6279	•	5940	•	5877	•	8245	•	8222	•	8067	•
8.000	8.000	9704	•	9586	•	9338	•	8116	•	6108	•	5567	•	5462	•	9074	•	9032	•	8792	•
8.000	32.000	9790	•	9703	•	9501	•	8347	•	6100	•	5423	•	5285	•	9428	•	9359	•	9087	•
32.000	8.000	9936	•	9839	•	9643	•	8609	•	6481	•	5584	•	5301	•	9396	•	9360	•	9150	•
32.000	32.000	9970	•	9921	•	9803	•	8974	•	6666	•	5515	•	5133	•	9732	•	9685	•	9494	•
$\Lambda = 2$																					
1.000	0.250	7703	•	7594	•	7401	•	6907	•	6607	•	6570	•	6565	•	6869	•	6865	•	6594	•
1.000	1.000	7875	•	7771	•	7577	•	6952	•	6435	•	6359	•	6347	•	7303	•	7293	•	7221	•
1.000	4.000	8041	•	7943	•	7748	•	7020	•	6290	•	6162	•	6141	•	7716	•	7694	•	7564	•
4.000	1.000	8886	•	8678	•	8324	•	7290	•	6271	•	6073	•	6040	•	7919	•	7901	•	7784	•
4.000	4.000	9273	•	9131	•	8851	•	7661	•	6046	•	5674	•	5607	•	8785	•	8751	•	8553	•
4.000	16.000	9470	•	9362	•	9125	•	7942	•	6019	•	5492	•	5387	•	9225	•	9171	•	8928	•
8.000	2.000	9467	•	9269	•	8931	•	7741	•	6147	•	5732	•	5649	•	8700	•	8673	•	8502	•
8.000	8.000	9753	•	9656	•	9450	•	8325	•	6125	•	5418	•	5266	•	9467	•	9431	•	9234	•
8.000	32.000	9856	•	9796	•	9651	•	8685	•	6277	•	5351	•	5133	•	9733	•	9688	•	9513	•
16.000	4.000	9821	•	9689	•	9450	•	8341	•	6259	•	5503	•	5312	•	9375	•	9344	•	9164	•
16.000	16.000	9945	•	9902	•	9797	•	9009	•	6570	•	5406	•	5084	•	9830	•	9804	•	9676	•
16.000	64.000	9975	•	9953	•	9895	•	9322	•	6869	•	5455	•	5033	•	9932	•	9909	•	9828	•
64.000	16.000	9992	•	9969	•	9914	•	9400	•	7203	•	5736	•	5035	•	9928	•	9913	•	9838	•
64.000	64.000	9998	•	9993	•	9976	•	9721	•	7748	•	5958	•	5006	•	9985	•	9979	•	9951	•
$\Lambda = 4$																					
1.000	0.250	8886	•	8678	•	8324	•	7290	•	6271	•	6073	•	6040	•	7919	•	7901	•	7784	•
1.000	1.000	9273	•	9131	•	8851	•	7661	•	6046	•	5674	•	5607	•	8785	•	8751	•	8553	•
1.000	4.000	9470	•	9362	•	9125	•	7942	•	6019	•	5492	•	5387	•	9225	•	9171	•	8928	•
4.000	2.000	9467	•	9269	•	8931	•	7741	•	6147	•	5732	•	5649	•	8700	•	8673	•	8502	•
4.000	8.000	9753	•	9656	•	9450	•	8325	•	6125	•	5418	•	5266	•	9467	•	9431	•	9234	•
4.000	32.000	9856	•	9796	•	9651	•	8685	•	6277	•	5351	•	5133	•	9733	•	9688	•	9513	•
16.000	4.000	9821	•	9689	•	9450	•	8341	•	6259	•	5503	•	5312	•	9375	•	9344	•	9164	•
16.000	16.000	9945	•	9902	•	9797	•	9009	•	6570	•	5406	•	5084	•	9830	•	9804	•	9676	•
16.000	64.000	9975	•	9953	•	9895	•	9322	•	6869	•	5455	•	5033	•	9932	•	9909	•	9828	•
64.000	16.000	9992	•	9969	•	9914	•	9400	•	7203	•	5736	•	5035	•	9928	•	9913	•	9838	•
64.000	64.000	9998	•	9993	•	9976	•	9721	•	7748	•	5958	•	5006	•	9985	•	9979	•	9951	•
$\Lambda = 8$																					
1.000	0.250	8886	•	8678	•	8324	•	7290	•	6271	•	6073	•	6040	•	7919	•	7901	•	7784	•
1.000	1.000	9273	•	9131	•	8851	•	7661	•	6046	•	5674	•	5607	•	8785	•	8751	•	8553	•
1.000	4.000	9470	•	9362	•	9125	•	7942	•	6019	•	5492	•	5387	•	9225	•	9171	•	8928	•
4.000	2.000	9467	•	9269	•	8931	•	7741	•	6147	•	5732	•	5649	•	8700	•	8673	•	8502	•
4.000	8.000	9753	•	9656	•	9450	•	8325	•	6125	•	5418	•	5266	•	9467	•	9431	•	9234	•
4.000	32.000	9856	•	9796	•	9651	•	8685	•	6277	•	5351	•	5133	•	9733	•	9688	•	9513	•
16.000	4.000	9821	•	9689	•	9450	•	8341	•	6259	•	5503	•	5312	•	9375	•	9344	•	9164	•
16.000	16.000	9945	•	9902	•	9797	•	9009	•	6570	•	5406	•	5084	•	9830	•	9804	•	9676	•
16.000	64.000	9975	•	9953	•	9895	•	9322	•	6869	•	5455	•	5033	•	9932	•	9909	•	9828	•
64.000	16.000	9992	•	9969	•	9914	•	9400	•	7203	•	5736	•	5035	•	9928	•	9913	•	9838	•
64.000	64.000	9998	•	9993	•	9976	•	9721	•	7748	•	5958	•	5006	•	9985	•	9979	•	9951	•

P	X	B	P	Y	B	X-00	05	15	50	85	95	100	Y-00	05	15	50	85	95	100	PBX
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$\Lambda = 4$

$N_{ox} = 1$

0.125	0.031	8422	8412	8395	8347	8324	8322	8321	6712	6712	6709	6686	6637	6618	6608	0.062
0.125	0.125	8409	8400	8382	8333	8307	8305	8305	6778	6777	6769	6679	6493	6421	6383	0.100
0.125	0.500	8369	8359	8341	8287	8257	8254	8253	6985	6981	6955	6660	6039	5792	5656	0.117

0.500	0.125	8654	8621	8559	8389	8298	8290	8288	6844	6843	6834	6738	6546	6474	6435	0.250
0.500	0.500	8638	8604	8541	8355	8244	8233	8231	7073	7070	7040	6723	6082	5832	5694	0.400
0.500	2.000	8607	8572	8504	8286	8136	8118	8116	7534	7524	7448	6712	5148	4473	4084	0.470

1.000	0.250	8897	8843	8740	8444	8269	8250	8248	7006	7004	6986	6795	6425	6285	6210	0.500
1.000	1.000	8906	8852	8747	8412	8181	8154	8150	7398	7391	7336	6783	5693	5260	5018	0.800
1.000	4.000	8920	8866	8757	8368	8056	8015	8009	7959	7942	7821	6798	4649	3669	3087	0.941

2.000	0.500	9230	9154	9008	8548	8223	8182	8177	7290	7286	7249	6883	6193	5934	5794	1.000
2.000	2.000	9289	9218	9074	8552	8101	8038	8029	7883	7870	7773	6887	5194	4504	4111	1.600
2.000	8.000	9190	9112	8962	8391	7825	7739	7726	8297	8268	8088	6805	4143	2866	2087	1.882

8.000 2.000 9810 9735 9582 8961 8149 7969 7937 8249 8234 8126 7136 5295 4577 4175 4.000

8.000 8.000 9873 9821 9706 9097 8065 7808 7761 8955 8923 8727 7255 4266 2925 2126 6.400

8.000 32.000 9687 9606 9502 8931 7825 7528 7473 9044 8985 8741 7205 3654 1875 0.0758 7.529

$\Lambda = 4$

$N_{ox} = 2$

0.250	0.062	8367	8347	8310	8211	8160	8155	8154	7381	7380	7375	7323	7217	7177	7155	0.124
0.250	0.250	8355	8335	8297	8188	8126	8120	8119	7522	7520	7504	7329	6963	6817	6735	0.200
0.250	1.000	8331	8311	8270	8143	8056	8046	8044	7821	7816	7778	7376	6405	5952	5684	0.235

1.000	0.250	8794	8735	8624	8303	8104	8082	8079	7682	7680	7659	7449	7052	6901	6818	0.500
1.000	1.000	8851	8794	8682	8308	8019	7981	7976	8093	8086	8032	7518	6451	5987	5716	0.800
1.000	4.000	8922	8868	8756	8331	7935	7875	7866	8534	8520	8429	7691	5789	4691	3969	0.941

2.000	0.500	9165	9083	8926	8430	8051	8000	7993	8025	8020	7979	7584	6855	6576	6421	1.000
2.000	2.000	9294	9223	9078	8513	7948	7859	7845	8616	8603	8514	7734	6115	5361	4903	1.600
2.000	8.000	9400	9338	9206	8609	7888	7756	7735	9057	9035	8903	7980	5570	4045	2982	1.882

4.000	1.000	9555	9467	9296	8665	8002	7885	7867	8531	8521	8449	7790	6563	6074	5797	2.000
4.000	4.000	9704	9643	9512	8865	7926	7731	7699	9203	9184	9064	8066	5821	4681	3955	3.200
4.000	16.000	9740	9690	9583	8972	7881	7617	7570	9494	9466	9324	8329	5432	3475	2045	3.764



P XB P YB X-00 05 15 50 85 95 100 Y-00 05 15 50 85 95 100 PBX

$\Lambda = 4$

N <sub>ox</sub> = 16	N <sub>ox</sub> = 16
2.000 0.500 9117 9034 8891 8420 7907 7805 7788 8845 8835 8773 8351 7715 7450 7284 1.000	2.000 2.000 9387 9327 9206 8673 7912 7720 7682 9267 9251 9162 8623 7669 7060 6532 1.600
2.000 8.000 9507 9457 9347 8821 7972 7700 7636 9452 9428 9325 8785 7807 6842 5409 1.882	

8.000 2.000 9892 9853 9776 9310 8130 7660 7547 9811 9800 9737 9225 7869 7109 6554 4.000	$\Lambda = 4$	N <sub>ox</sub> = 16
8.000 8.000 9977 9968 9943 9685 8457 7725 7508 9966 9961 9935 9645 8216 6901 5400 6.400		
8.000 32.000 9990 9986 9974 9805 8692 7826 7502 9988 9984 9970 9784 8531 6995 3786 7.529		

16.000 4.000 9990 9982 9965 9761 8585 7773 7505 9977 9974 9955 9708 8266 7085 6107 8.000	$\Lambda = 4$	N <sub>ox</sub> = 16
16.000 16.000 9999 9999 9997 9950 9064 7970 7500 9999 9998 9996 9937 8818 7070 4690 12.800		
16.000 64.000 9999 9999 9999 9981 9312 8146 7499 9999 9999 9999 9976 9150 7313 2891 15.058		

32.000 8.000 9999 9999 9998 9960 9164 8062 7500 9999 9999 9997 9944 8832 7199 5546 16.000	$\Lambda = 4$	N <sub>ox</sub> = 16
32.000 32.000 9999 9999 9999 9999 9997 9608 8390 7499 9999 9999 9999 9412 7406 3853 25.600		

N<sub>ox</sub> = 32

$\Lambda = 4$

4.000 1.000 9583 9509 9383 8841 7963 7695 7635 9455 9439 9349 8802 7866 7443 7141 2.000	$\Lambda = 4$	N <sub>ox</sub> = 32
4.000 4.000 9815 9778 9699 9217 8123 7675 7555 9778 9762 9687 9191 8037 7290 6423 3.200		
4.000 16.000 9879 9854 9793 9376 8269 7722 7533 9866 9849 9786 9359 8217 7373 5336 3.764		

N<sub>ox</sub> = 32

$\Lambda = 4$

16.000 4.000 9993 9988 9975 9813 8713 7839 7503 9987 9985 9972 9791 8565 7484 6516 8.000	$\Lambda = 4$	N <sub>ox</sub> = 32
16.000 16.000 9999 9999 9998 9965 9201 8089 7500 9999 9998 9998 9961 9101 7691 5394 12.800		
16.000 64.000 9999 9999 9999 9986 9416 8293 7499 9999 9999 9999 9984 9352 8003 3784 15.058		

N<sub>ox</sub> = 64

$\Lambda = 4$

32.000 8.000 9999 9999 9999 9980 9928 8194 7500 9999 9999 9995 9183 7755 6103 16.000	$\Lambda = 4$	N <sub>ox</sub> = 64
32.000 32.000 9949 9949 9836 8885 9999 9999 9732 8595 7499 9924 9812 8745 9999 9665 8174 4689 25.600		

N<sub>ox</sub> = 64

$\Lambda = 4$

8.000 2.000 9905 9873 9813 9406 8272 7711 7530 9875 9863 9806 9387 8218 7568 7043 4.000	$\Lambda = 4$	N <sub>ox</sub> = 64
8.000 8.000 9982 9975 9956 9745 8642 7842 7505 9979 9974 9955 9737 8600 7685 6381 6.400		
8.000 32.000 9992 9989 9979 9838 8840 7973 7501 9991 9989 9978 9833 8809 7881 5314 7.529		

32.000 8.000 9999 9999 9999 9987 9430 8312 7499 9999 9999 9999 9986 9366 8105 6513 16.000	$\Lambda = 4$	N <sub>ox</sub> = 64
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P	XB	P	YB	X-00	05	15	50	85	95	100	Y-00	05	15	50	85	95	100	PBX
$\Lambda = 8$																		
0•125	0•031	9054	9048	9038	9009	8995	8993	8993	8993	8993	8049	8049	8046	8018	7960	7938	7926	0•083
0•125	0•125	9047	9041	9030	9000	8984	8982	8982	8982	8982	8138	8137	8128	8026	7811	7727	7680	0•111
0•125	0•500	9028	9022	9010	8976	8955	8952	8952	8952	8952	8379	8375	8350	8064	7396	7106	6941	0•121
0•500	0•125	9201	9182	9145	9041	8982	8976	8976	8976	8976	8190	8189	8179	8071	7850	7765	7718	0•333
0•500	0•500	9205	9185	9147	9029	8952	8943	8942	8942	8942	8458	8454	8426	8116	7427	7135	6968	0•444
0•500	2•000	9214	9194	9155	9017	8909	8895	8893	8893	8893	8853	8846	8796	8261	6752	5947	5442	0•484
1•000	0•250	9361	9329	9269	9086	8969	8956	8954	8954	8954	8361	8359	8340	8136	7721	7558	7468	0•666
1•000	1•000	9394	9364	9304	9094	8929	8907	8904	8904	8904	8764	8757	8711	8232	7123	6617	6318	0•888
1•000	4•000	9340	9308	9244	9010	8790	8756	8751	8751	8751	9057	9048	8982	8357	6395	5194	4395	0•969
2•000	0•500	9583	9541	9460	9180	8953	8923	8918	8918	8918	8648	8643	8608	8248	7509	7209	7040	1•333
2•000	2•000	9654	9619	9545	9236	8913	8862	8854	8854	8854	9164	9154	9087	8428	6797	5974	5466	1•777
2•000	8•000	9704	9673	9607	9292	8889	8814	8802	8802	8802	9498	9484	9401	8707	6274	4578	3377	1•939
8•000	2•000	9935	9909	9852	9552	8994	8846	8819	8819	8819	9443	9434	9365	8656	6895	6044	5527	5•333
8•000	8•000	9973	9962	9933	9702	9034	8815	8772	8772	8772	9822	9811	9744	9035	6362	4608	3394	7•111
8•000	32•000	9985	9979	9962	9785	9085	8814	8757	8757	8757	9932	9922	9873	9318	6217	3572	1507	7•757
$\Lambda = 8$																		
0•250	0•062	9061	9049	9028	8969	8937	8934	8933	8933	8933	8528	8523	8466	8348	8302	8277	0•166	
0•250	0•250	9062	9051	9028	8962	8920	8915	8914	8914	8914	8681	8679	8664	8501	8125	7961	7868	0•222
0•250	1•000	9068	9057	9034	8956	8895	8887	8886	8886	8886	8907	8903	8880	8612	7755	7261	6943	0•242
1•000	0•250	9341	9309	9247	9052	8916	8900	8898	8898	8898	8813	8793	8793	8594	8185	8018	7923	0•666
1•000	1•000	9407	9377	9317	9093	8891	8861	8857	8857	8857	9140	9135	9098	8734	7791	7286	6965	0•888
1•000	4•000	9466	9439	9381	9145	8884	8837	8829	8829	8829	9360	9352	9307	8950	7538	6337	5405	0•969
2•000	0•500	9588	9547	9466	9174	8906	8866	8860	8860	8860	9114	9109	9075	8741	8042	7737	7558	1•333
2•000	2•000	9689	9657	9589	9279	8895	8824	8813	8813	8813	9490	9483	9433	8972	7653	6833	6271	1•777
2•000	8•000	9716	9688	9628	9333	8881	8776	8758	8758	8758	9633	9623	9567	9174	7537	5856	4399	1•939
4•000	1•000	9826	9792	9719	9386	8923	8829	8813	8813	8813	9489	9482	9435	8972	7884	7356	7029	2•666
4•000	4•000	9909	9845	9555	8957	8802	8773	8760	8760	8760	9808	9801	9754	9294	7612	6359	5418	3•555
4•000	16•000	9939	9927	9894	9655	9015	8803	8760	8760	8760	9904	9896	9857	9519	7702	5498	3361	3•878
16•000	4•000	9993	9988	9975	9840	9196	8847	8756	8756	8756	9945	9941	9916	9566	7782	6452	5489	10•666
16•000	16•000	9999	9998	9996	9947	9364	8891	8750	8750	8750	9995	9994	9988	9842	7929	5565	3386	14•222
16•000	64•000	9999	9999	9999	9977	9473	8931	8750	8750	8750	9999	9997	9997	9932	8208	5084	1505	15•515

P	X <sub>B</sub>	P	Y <sub>B</sub>	X=00	05	15	50	85	95	100	Y=00	05	15	50	85	95	100	PBX
$\Lambda = 8$																		
$N_{ox} = 4$																		
$\Lambda = 8$																		
$N_{ox} = 4$																		
$\Lambda = 8$																		
0.500	0.125	0.151	0.130	0.091	0.897	0.5	0.890	1	0.889	0.91	0.8867	0.8866	0.8856	0.8750	0.8535	0.8447	0.8396	0.333
0.500	0.500	0.196	0.136	0.899	0.886	0.6	0.887	0	0.8868	0.9051	0.9048	0.9029	0.8836	0.8330	0.8050	0.7870	0.444	
0.500	2.000	0.238	0.219	0.918	0.903	0.2	0.888	0.3	0.8856	0.8852	0.9179	0.9175	0.9149	0.8962	0.8216	0.7503	0.6918	0.484
2.000	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000
4.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000
4.000	16.000	16.000	16.000	16.000	16.000	16.000	16.000	16.000	16.000	16.000	16.000	16.000	16.000	16.000	16.000	16.000	16.000	16.000
8.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000
8.000	8.000	8.000	8.000	8.000	8.000	8.000	8.000	8.000	8.000	8.000	8.000	8.000	8.000	8.000	8.000	8.000	8.000	8.000
8.000	32.000	32.000	32.000	32.000	32.000	32.000	32.000	32.000	32.000	32.000	32.000	32.000	32.000	32.000	32.000	32.000	32.000	32.000
32.000	32.000	32.000	32.000	32.000	32.000	32.000	32.000	32.000	32.000	32.000	32.000	32.000	32.000	32.000	32.000	32.000	32.000	32.000
32.000	32.000	32.000	32.000	32.000	32.000	32.000	32.000	32.000	32.000	32.000	32.000	32.000	32.000	32.000	32.000	32.000	32.000	32.000
$N_{ox} = 8$																		
$\Lambda = 8$																		
$N_{ox} = 8$																		
$\Lambda = 8$																		
$N_{ox} = 8$																		
1.000	0.250	0.352	0.321	0.261	0.906	1	0.888	0.855	0.8851	0.9186	0.9182	0.9161	0.8982	0.8646	0.8490	0.8393	0.666	
1.000	1.000	1.451	1.424	1.368	1.144	0.8887	0.836	0.8828	0.9374	0.9369	0.9335	0.9106	0.8576	0.8167	0.7836	0.888	0.888	
1.000	4.000	9.502	9.477	9.424	9.200	0.8906	0.8831	0.8816	0.9465	0.9456	0.9412	0.9184	0.8670	0.7886	0.6890	0.969	0.969	
4.000	1.000	1.000	9.868	9.843	9.789	9.504	0.8958	0.8805	0.8776	0.9788	0.9782	0.9745	0.9434	0.8670	0.8210	0.7871	2.666	
4.000	16.000	16.000	9.957	9.947	9.924	0.9738	0.9142	0.8843	0.8756	0.9760	0.9717	0.9912	0.9883	0.9640	0.8803	0.7907	0.6891	3.555
4.000	32.000	32.000	9.998	9.997	9.9997	0.9943	0.9425	0.8939	0.8750	0.9949	0.9943	0.9918	0.9720	0.9015	0.7857	0.5360	0.878	3.878
8.000	2.000	2.000	9.981	9.973	9.955	0.9792	0.9135	0.8828	0.8754	0.9961	0.9959	0.9941	0.9738	0.8889	0.8210	0.7871	2.666	2.666
8.000	8.000	8.000	9.996	9.994	9.989	0.9912	0.9312	0.8881	0.8750	0.9994	0.9993	0.9987	0.9895	0.9093	0.8096	0.7485	5.333	5.333
8.000	32.000	32.000	9.998	9.998	9.9997	0.9943	0.9425	0.8939	0.8750	0.9997	0.9996	0.9993	0.9935	0.9317	0.8012	0.6226	7.111	7.111
16.000	4.000	4.000	9.999	9.999	9.998	0.9997	0.9956	0.9424	0.8922	0.8750	0.9998	0.9997	0.9995	0.9934	0.9108	0.8046	0.6981	10.666
16.000	16.000	16.000	9.999	9.999	9.999	0.9999	0.999	0.9639	0.9029	0.8750	0.9999	0.9999	0.9999	0.9999	0.9458	0.8012	0.5403	14.222
16.000	64.000	64.000	9.999	9.999	9.999	0.9997	0.9741	0.9124	0.8749	0.8124	0.9999	0.9999	0.9999	0.9999	0.9651	0.8264	0.515	15.515



P	XB	P	YB	X=00	05	15	50	85	95	100	Y=00	05	15	50	85	95	100	PBX
$\Lambda = 16$																		
0.500	0.125	0.9564	0.9553	0.9532	0.9465	0.9416	0.9410	0.9409	0.9452	0.9451	0.9361	0.9172	0.9084	0.9031	0.400			
0.500	0.500	0.9594	0.9584	0.9563	0.9487	0.9416	0.9404	0.9403	0.9549	0.9547	0.9432	0.9077	0.8816	0.8627	0.470			
0.500	2.000	0.9594	0.9584	0.9564	0.9486	0.9486	0.9401	0.9383	0.9574	0.9571	0.9557	0.9473	0.9083	0.8487	0.7870	0.492		
2.000	0.500	0.9836	0.9820	0.9785	0.9633	0.9435	0.9396	0.9389	0.9760	0.9757	0.9738	0.9566	0.9121	0.8846	0.654	1.600		
2.000	2.000	0.9881	0.9869	0.9841	0.9699	0.9459	0.9396	0.9384	0.9854	0.9850	0.9829	0.9676	0.9144	0.8517	0.7895	1.882		
2.000	8.000	0.9895	0.9885	0.9860	0.9729	0.9484	0.9399	0.9380	0.9883	0.9878	0.9855	0.9719	0.9312	0.8328	0.6610	1.969		
4.000	1.000	0.9955	0.9946	0.9925	0.9790	0.9485	0.9396	0.9379	0.9921	0.9919	0.9902	0.9736	0.9153	0.8704	0.8350	2.00		
4.000	4.000	0.9977	0.9972	0.9959	0.9859	0.9538	0.9407	0.9376	0.9968	0.9966	0.9954	0.9841	0.9278	0.8410	0.7342	3.764		
4.000	16.000	0.9982	0.9978	0.9978	0.9968	0.9884	0.9582	0.9422	0.9376	0.9979	0.9976	0.9966	0.9875	0.9471	0.8370	0.5727	3.938	
8.000	2.000	0.9996	0.9996	0.9994	0.9989	0.9930	0.9592	0.9417	0.9375	0.9990	0.9989	0.9984	0.9898	0.9263	0.8576	0.7941	6.400	
8.000	8.000	0.9999	0.9998	0.9997	0.9969	0.9678	0.9446	0.9375	0.9998	0.9998	0.9996	0.9961	0.9479	0.8381	0.6633	7.529		
8.000	32.000	0.9999	0.9999	0.9998	0.9978	0.9732	0.9476	0.9374	0.9999	0.9999	0.9998	0.9975	0.9655	0.8506	0.4698	7.876		
32.000	8.000	0.9999	0.9999	0.9999	0.9999	0.9999	0.9889	0.9569	0.9374	0.9999	0.9999	0.9998	0.9998	0.8484	0.6685	25.600		
$\Lambda = 16$																		
1.000	0.250	0.9695	0.9680	0.9651	0.9538	0.9421	0.9400	0.9397	0.9637	0.9635	0.9621	0.9510	0.9269	0.9127	0.9027	0.800		
1.000	1.000	0.9738	0.9725	0.9697	0.9581	0.9433	0.9399	0.9392	0.9713	0.9709	0.9690	0.9573	0.9283	0.8954	0.8617	0.941		
1.000	4.000	0.9744	0.9731	0.9705	0.9591	0.9435	0.9389	0.9378	0.9731	0.9726	0.9702	0.9587	0.9365	0.8855	0.7869	0.984		
4.000	1.000	0.9962	0.9954	0.9936	0.9816	0.9508	0.9401	0.9378	0.9944	0.9942	0.9927	0.9796	0.9361	0.8988	0.8644	3.200		
4.000	4.000	0.9979	0.9975	0.9963	0.9872	0.9565	0.9416	0.9376	0.9974	0.9972	0.9961	0.9865	0.9486	0.8894	0.7889	3.764		
4.000	16.000	0.9983	0.9979	0.9970	0.9891	0.9603	0.9435	0.9375	0.9981	0.9979	0.9969	0.9887	0.9580	0.9014	0.6607	3.938		
8.000	2.000	0.9997	0.9996	0.9993	0.9947	0.9633	0.9431	0.9375	0.9995	0.9994	0.9991	0.9936	0.9501	0.8957	0.8346	6.400		
8.000	8.000	0.9999	0.9998	0.9997	0.9974	0.9715	0.9467	0.9375	0.9999	0.9998	0.9997	0.9972	0.9661	0.8967	0.7341	7.529		
8.000	32.000	0.9999	0.9999	0.9998	0.9981	0.9757	0.9502	0.9375	0.9999	0.9999	0.9998	0.9979	0.9737	0.9181	0.5727	7.876		
16.000	4.000	0.9999	0.9999	0.9999	0.9999	0.9999	0.9800	0.9501	0.9375	0.9999	0.9999	0.9992	0.9693	0.8987	0.7941	12.800		
16.000	16.000	0.9999	0.9999	0.9999	0.9999	0.9999	0.9880	0.9567	0.9374	0.9999	0.9999	0.9998	0.9845	0.9127	0.6633	15.058		
16.000	64.000	0.9999	0.9999	0.9999	0.9999	0.9999	0.9619	0.9374	0.9999	0.9999	0.9999	0.9999	0.9894	0.9386	0.4698	15.753		