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Experimental Thermal Conductivity and Thermal Diffusivity Values for Neon and Mixtures of Neon and Nitrogen

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Experimental Thermal Conductivity and Thermal Diffusivity Values for Neon and Mixtures of Neon and Nitrogen

R.A. Perkins, H.M. Roder

We report new measurements of thermal conductivity and thermal diffusivity, obtained with a transient hot-wire apparatus, for neon and two mixtures of neon with nitrogen. The measurements were made at temperatures between 58 K and 303 K (ITS 90) with pressures between 0.1 MPa and 70 MPa. The data cover only the supercritical gas phase. The number of points reported for pure neon is 829, for the 75 mol % neon – 25 mol % nitrogen mixture, 204, and for the 50 mol % neon – 50 mol % nitrogen mixture, 188. Empirical thermal conductivity correlations are provided for neon and the two neon-nitrogen mixtures.

Key Words: mixtures; neon; nitrogen; thermal conductivity; thermal diffusivity; transient hot-wire.

1. Introduction

This report is the archival record of the results of our transient hot-wire measurements on neon and mixtures of neon and nitrogen. The tables contain experimental values of the thermal conductivity and thermal diffusivity. The mixtures were gravimetrically prepared, with all compositions reported on a molar basis. They are designated as (a)the 75 mol % neon – 25 mol % nitrogen mixture, and (b) the 50 mol % neon – 50 mol % nitrogen mixture. The precise compositions are (a) 75.007 mol % neon – 24.993 mol % nitrogen, and (b) 49.936 mol % neon – 50.064 mol % nitrogen. The purities of the neon and nitrogen used to prepare the mixtures was verified with gas chromatography and found to exceed 99.999 mol % in each case. The quantity of data obtained is so large that an electronically accessible version is necessary to facilitate use of the data. All of the transient hot-wire results described in this series of Interagency Reports are available in an ASCII form at the NIST anonymous ftp site:

`ftp://ftp.boulder.nist.gov/pub/fluids/NIST_Data/Hot-Wire/`

The transient hot-wire instrument used in this study has been described elsewhere [1]. This hot-wire instrument has two hot wires of different lengths that are operated in a differential mode using a Wheatstone-bridge circuit to eliminate effects due to axial conduction near the ends of the wires. This system has been used previously to study the thermal conductivity of oxygen [2], hydrogen [3, 4], methane [3, 5], ethane [3, 6], methane-ethane mixtures [7, 8], propane [3, 9], argon [10–13], nitrogen [10, 14], and nitrogen-oxygen-argon mixtures [15]. For the present measurements, the temperature range of the instrument has been extended down to 58 K from 65 K. The pressure range remains 0.1 to 70 MPa.

The apparatus has been improved considerably during the past few years so that the thermal diffusivity can be obtained at the same time as the thermal conductivity. The specific heat capacity at constant pressure, C_p, can then be computed from the measured values of thermal conductivity and thermal diffusivity provided that the density of the fluid is known. However, the specific heat is not reported here since it is a derived, rather than a directly measured, value that depends on the equation of state used for analysis. A detailed description of the measurement of the thermal diffusivity, including an analysis of the various errors, is given in reference[16].

The transient hot-wire measurements were conducted along isotherms. The isotherm temperature increments were selected to be between 20 to 50 K to provide a change of several percent in thermal conductivity between adjacent isotherms. Measurements were made at a number of pressures along each isotherm. The pressure increment was selected to give a density increment of 0.5 to 1.0 mol/L. Finally, replicated measurements were made at each fixed cell temperature and pressure with about four different applied powers to check the reproducibility of the measurements. It should be noted that each different power level yields a thermal conductivity at a slightly different experimental temperature. All of the measurements on pure neon and the two mixtures of neon with nitrogen are shown in Figure 1.

In comparison to all of the other measurements that we have made, the results for neon and its mixtures with nitrogen are unique in two respects. First, convection in the cell occured for smaller temperature rises and at shorter elapsed times than with any of the other fluids or fluid mixtures studied with this apparatus before. This particular factor forced us to decrease the applied power for many of the measurements; that is, many of the experimental temperature rises were considerably smaller than our normal one of around 4 K. Second, even though we were at supercritical conditions, the equations of state available to us were not nearly as accurate as those for the other fluids. Combined, these two factors lead to a degradation in the uncertainty estimated for the thermal conductivity, to about ± 3 %, and a severe degradation in the uncertainty estimated for the thermal diffusivity, to about ± 20 %.

The data tables for neon and its two mixtures with nitrogen are arranged in order of increasing nominal isotherm temperatures and in order of increasing density for each nominal isotherm. The nominal isotherm temperatures are the averages of all the experimental temperatures rounded to the nearest degree. All temperatures are reported on the ITS 90 temperature scale. Recorded in the tables are the run-point numbers; the pressure P_{exp}, temperature T_{exp}, and the calculated density ρ_{calc} of the fluid to which the thermal conductivity is assigned; the applied power per unit length of the wire Q; the experimental thermal conductivity λ_{exp} and its 2 σ uncertainty value (STAT); the cell temperature T_{cell} to which the measured thermal diffusivity a is assigned. STAT and DSTAT are the uncertainties of the slope and intercept, at the 2 σ level, as determined in the data reduction program [1, 16]. STAT and DSTAT are direct measures of the precision of the thermal conductivity and thermal diffusivity, respectively. A STAT of 0.001, for example, corresponds to a precision of 0.1 % in thermal conductivity. Empirical thermal conductivity correlations are provided for neon and for each mixture based on these new measurements. Deviations of the thermal conductivity data from these empirical fits are plotted as a function of the fluid density for each surface.

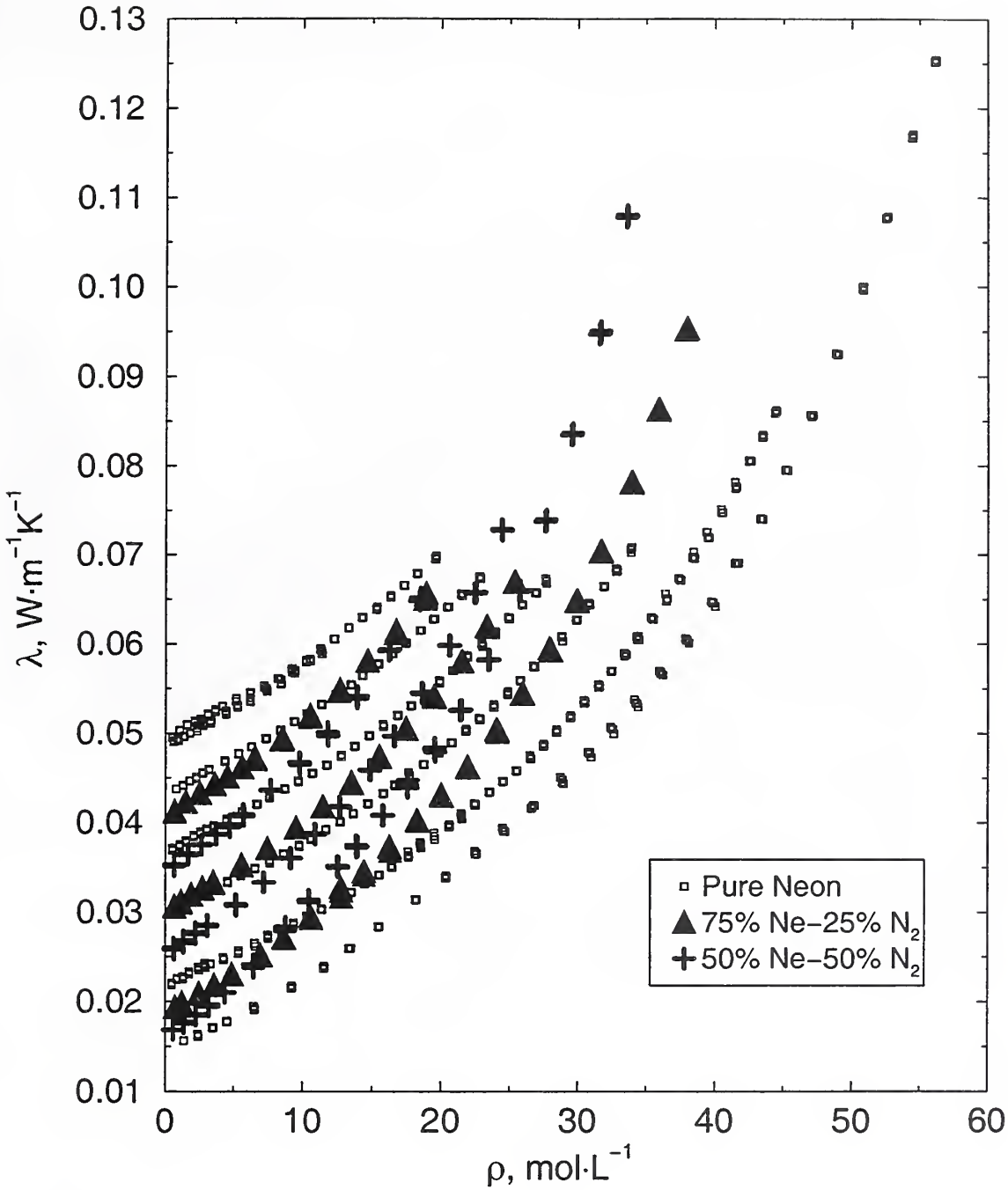

Figure 1. Thermal conductivities of pure neon (59K - 300 K), 75.007 mol % neon – 24.993 mol % nitrogen (111 K - 302 K), and 49.936 mol % neon – 50.064 mol % nitrogen (121 K - 302 K).

2. The thermal conductivity and thermal diffusivity of pure neon

A total of 829 points are given in Table 1. The densities reported in the table have been calculated using the most recent equation of state for neon [17]. The FORTRAN programs developed to represent the thermal conductivity surface of pure neon are listed below. The relative deviations in percent between the experimental data and this fit are shown in Figure 2.

```
      FUNCTION TCNEON(RHO,T)
C     COEFFICIENTS FROM SURFFIT              HMR 25 AUG 1994
      IMPLICIT DOUBLE PRECISION(A-H,O-Z)
      DIMENSION A(3),B(4)
      DATA A/0.3135952879E-02,0.2001005323E-03,-0.1653906212E-06/
      DATA B/0.6049399450E-03,0.1113031584E-05,0.3131775987E-06
     1 ,0.3031663664E-10/
      TCZERO=A(1)+A(2)*T+A(3)*T**2
      EXCESS=(B(1)+B(2)*T)*RHO+B(3)*RHO**3+B(4)*RHO**5
      TCCRIT=CRITNE(RHO,T)
      TCNEON=TCZERO+EXCESS+TCCRIT
      RETURN
      END

      FUNCTION CRITNE(RHO,T)
C     AMPL & RHOCEN SLOPES FROM LINEAR GRAPHS, REMAINDER, HMR 15 OCT 1994
C     SIMILAR TO THE AIR FUNCTIONS, EXP(-X**2),ETC.
C     TC=44.4918 AND RHOC=23.882 USED IN SLOPES, C(5) FROM N2
      IMPLICIT DOUBLE PRECISION(A-H,O-Z)
      DIMENSION C(6)
      DATA C/0.0069478D0,-0.000065D0,32.5993D0,-0.19593D0,0.1D0,0.07D0/
      TC=44.4918
      IF(T.LT.TC) T=TC+(TC-T)
      AMPL=C(1)+C(2)*T
      IF(AMPL.LT.0.0D0) AMPL=0.0D0
      RHOCEN=C(3)+C(4)*T
      X1=C(5)*(RHO-RHOCEN)
      IF(RHO.GT.RHOCEN) X1=C(6)*(RHO-RHOCEN)
      CRITNE=AMPL*DEXP(-(X1**2))
      IF(CRITNE.LT.0.0D0) CRITNE=0.0D0
      RETURN
      END
```

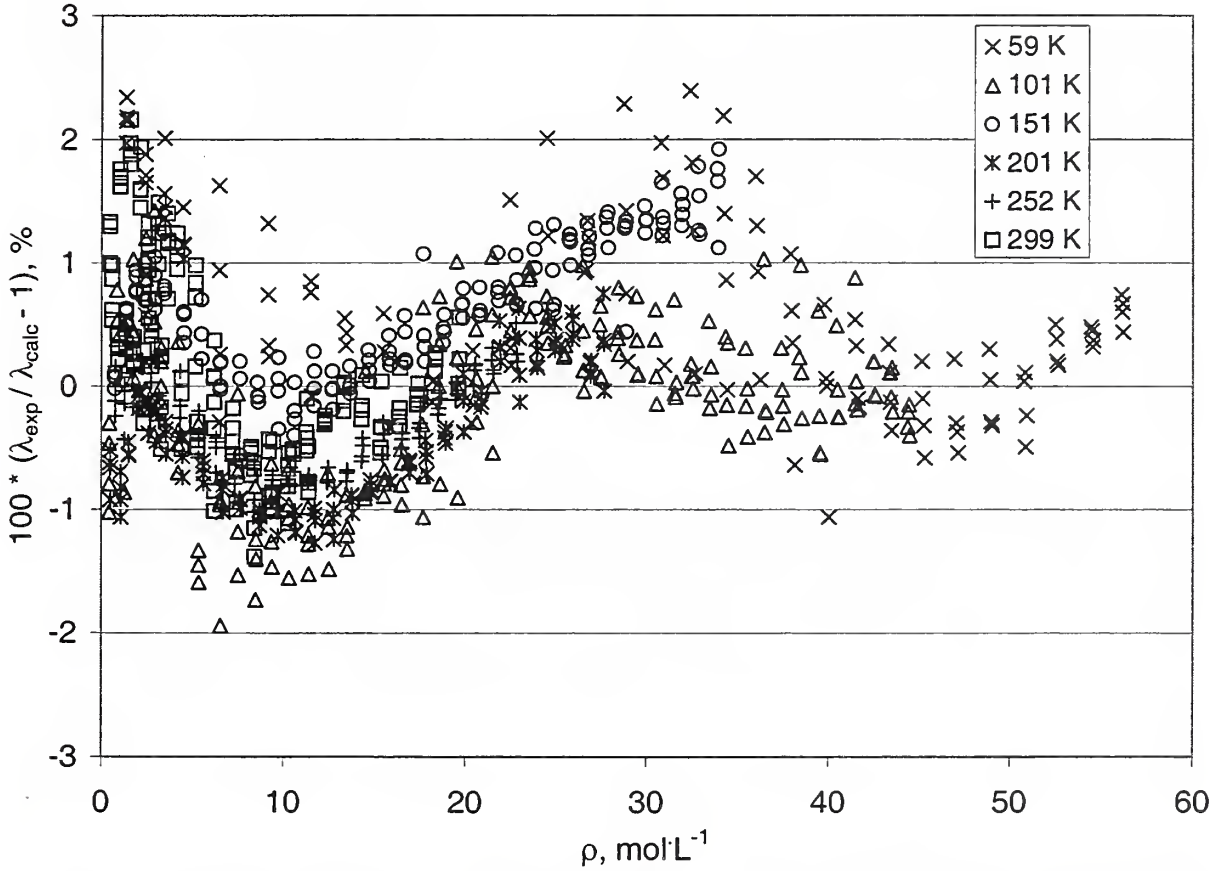

Figure 2. Relative deviations between the empirical thermal conductivity surface fit and the data for pure neon.

3. The thermal conductivity and thermal diffusivity of the 75 % neon – 25 % nitrogen mixture

A total of 204 points are given in Table 2. The densities reported in the table have been calculated from a mixture program for nitrogen, oxygen, and argon [18] to which the most recent equation of state for neon [17] has been added as an additional parameter in the mixing relations. The FORTRAN programs developed to represent the thermal conductivity surface of the mixture are listed below. The precise molar composition was 0.75007 neon and 0.24993 nitrogen. The relative deviations in percent between the experimental data and this fit are shown in Figure 3.

```
      FUNCTION TC7525(RHO,T)
C     COEFFICIENTS FROM NEON\REPORT\TEST5.FOR     HMR 15 OCT 1994
      IMPLICIT DOUBLE PRECISION(A-H,O-Z)
      DIMENSION A(3),B(4)
      DATA A/0.2066520666E-02,0.1654831916E-03,-0.1279101379E-06/
      DATA B/0.6500437142E-03,0.1235320643E-05,0.8146682572E-06
     1 ,0.1853376899E-10/
      TCZERO=A(1)+A(2)*T+A(3)*T**2
      EXCESS=(B(1)+B(2)*T)*RHO+B(3)*RHO**3+B(4)*RHO**5
      TCCRIT=CRIT75(RHO,T)
      TC7525=TCZERO+EXCESS+TCCRIT
      RETURN
      END

      FUNCTION CRIT75(RHO,T)
C     AMPL & RHOCEN SLOPES FROM LINEAR GRAPHS, REMAINDER, HMR 15 OCT 1994
C     SIMILAR TO THE AIR FUNCTIONS, EXP(-X**2),ETC.
C     TC=64.9171 AND RHOC=20.705 USED IN SLOPES, C(5) ESTIMATED
      IMPLICIT DOUBLE PRECISION(A-H,O-Z)
      DIMENSION C(6)
      DATA C/0.0089796D0,-0.000065D0,28.415D0,-0.1187667D0,0.1D0,0.07D0/
      TC=64.9171
      IF(T.LT.TC) T=TC+(TC-T)
      AMPL=C(1)+C(2)*T
      IF(AMPL.LT.0.0D0) AMPL=0.0D0
      RHOCEN=C(3)+C(4)*T
      X1=C(5)*(RHO-RHOCEN)
      IF(RHO.GT.RHOCEN) X1=C(6)*(RHO-RHOCEN)
      CRIT75=AMPL*DEXP(-(X1**2))
      IF(CRIT75.LT.0.0D0) CRIT75=0.0D0
      RETURN
      END
```

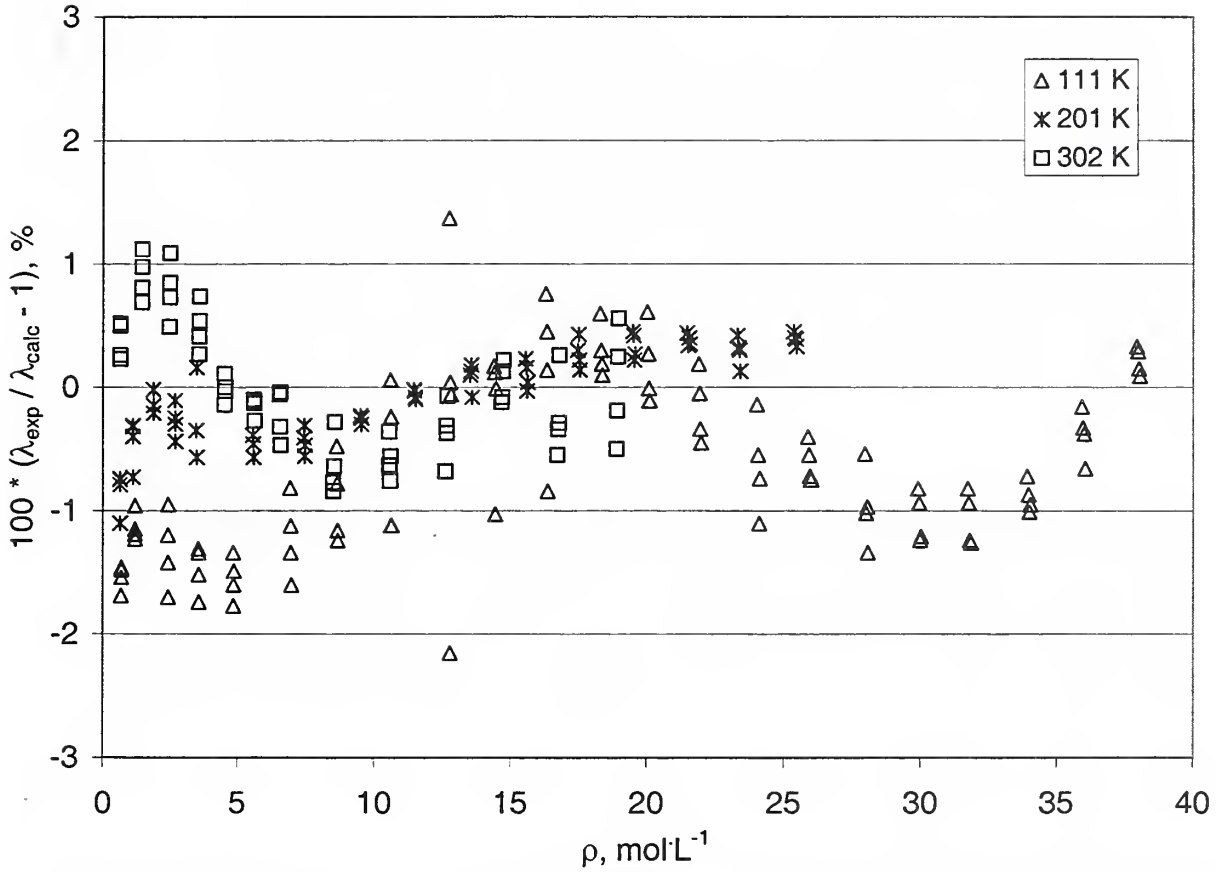

Figure 3. Relative deviations between the empirical thermal conductivity surface fit and the data for the 75 % neon – 25 % nitrogen mixture.

4. The thermal conductivity and thermal diffusivity of the 50 % neon – 50 % nitrogen mixture

A total of 188 points are given in Table 3. The densities reported in the table have been calculated from a mixture program for nitrogen, oxygen and argon [18] to which the most recent equation of state for neon [17] has been added as an additional parameter in the mixing relations. The FORTRAN programs developed to represent the thermal conductivity surface of the mixture are listed below. The precise molar composition was 0.49936 neon and 0.50064 nitrogen. The relative deviations in percent between the experimental data and this fit are shown in Figure 4.

```
      FUNCTION TC5050(RHO,T)
C     COEFFICIENTS FROM NEON\REPORT\TEST8.FOR     HMR 16 OCT 1994
      IMPLICIT DOUBLE PRECISION(A-H,O-Z)
      DIMENSION A(3),B(4)
      DATA A/-0.4106003595E-04,0.1499063261E-03,-0.1217043385E-06/
      DATA B/0.8061178185E-03,0.1218141343E-05,0.1336491308E-05
     1 ,0.1891782633E-09/
      TCZERO=A(1)+A(2)*T+A(3)*T**2
      EXCESS=(B(1)+B(2)*T)*RHO+B(3)*RHO**3+B(4)*RHO**5
      TCCRIT=CRIT50(RHO,T)
      TC5050=TCZERO+EXCESS+TCCRIT
      RETURN
      END

      FUNCTION CRIT50(RHO,T)
C     AMPL & RHOCEN SLOPES FROM LINEAR GRAPHS, REMAINDER, HMR 16 OCT 1994
C     SIMILAR TO THE AIR FUNCTIONS, EXP(-X**2),ETC.
C     TC=85.3424 AND RHOC=17.5295 USED IN SLOPES, C(5) TRIAL & ERROR
      IMPLICIT DOUBLE PRECISION(A-H,O-Z)
      DIMENSION C(6)
      DATA C/0.0118689D0,-0.000065D0,30.0325D0,-0.146504D0,0.2D0,0.09D0/
      TC=85.3424
      IF(T.LT.TC) T=TC+(TC-T)
      AMPL=C(1)+C(2)*T
      IF(AMPL.LT.0.0D0) AMPL=0.0D0
      RHOCEN=C(3)+C(4)*T
      X1=C(5)*(RHO-RHOCEN)
      IF(RHO.GT.RHOCEN) X1=C(6)*(RHO-RHOCEN)
      CRIT50=AMPL*DEXP(-(X1**2))
      IF(CRIT50.LT.0.0D0) CRIT50=0.0D0
      RETURN
      END
```

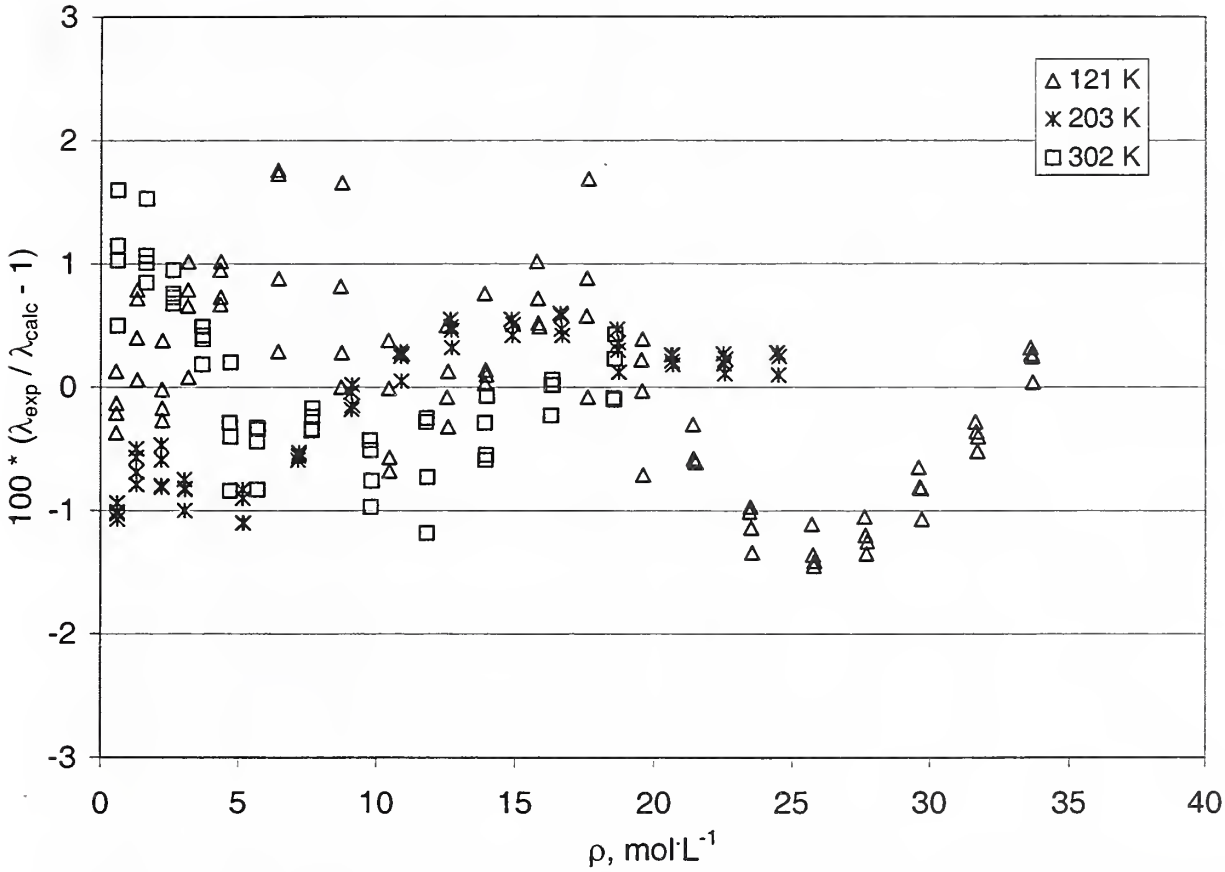

Figure 4. Relative deviations between the empirical thermal conductivity surface fit and the data for the 50 % neon – 50 % nitrogen mixture.

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6. Data tables

Table 1. The thermal conductivity and thermal diffusivity of pure neon.

Run point	P_{cell} MPa	Q W·m^{-1}	T_{exp} K	ρ_{calc} mol·L^{-1}	λ_{exp} W·m^{-1}·K^{-1}	STAT	T_{cell} K	a m^2·s^{-1}	DSTAT
Nominal temperature = 59 K									
7117	0.638	0.01696	59.219	1.3421	0.01568	0.005	58.401	0.787E-06	0.056
7118	0.638	0.01462	59.044	1.3465	0.01568	0.007	58.402	0.801E-06	0.076
7119	0.638	0.01247	58.906	1.3500	0.01566	0.008	58.402	0.849E-06	0.087
7120	0.638	0.01049	58.759	1.3538	0.01566	0.010	58.403	0.813E-06	0.108
7113	1.104	0.01692	59.069	2.3893	0.01639	0.005	58.396	0.396E-06	0.055
7114	1.104	0.01459	58.997	2.3929	0.01635	0.007	58.396	0.391E-06	0.065
7115	1.104	0.01244	58.807	2.4023	0.01631	0.009	58.396	0.375E-06	0.088
7116	1.104	0.01047	58.774	2.4039	0.01613	0.011	58.396	0.361E-06	0.113
7109	1.546	0.01689	59.047	3.4371	0.01710	0.006	58.392	0.257E-06	0.056
7110	1.546	0.01457	58.938	3.4455	0.01705	0.007	58.392	0.251E-06	0.066
7111	1.546	0.01243	58.848	3.4524	0.01715	0.010	58.392	0.288E-06	0.092
7112	1.546	0.01046	58.603	3.4715	0.01702	0.012	58.392	0.263E-06	0.111
7105	1.958	0.01687	58.928	4.4752	0.01784	0.006	58.393	0.208E-06	0.056
7106	1.958	0.01455	58.870	4.4816	0.01778	0.008	58.393	0.201E-06	0.070
7107	1.958	0.01242	58.720	4.4979	0.01774	0.009	58.394	0.203E-06	0.088
7108	1.958	0.01045	58.622	4.5086	0.01775	0.012	58.392	0.218E-06	0.115
7101	2.694	0.01683	58.922	6.4542	0.01945	0.007	58.389	0.128E-06	0.059
7102	2.694	0.01453	58.811	6.4742	0.01931	0.008	58.388	0.123E-06	0.074
7103	2.694	0.01240	58.765	6.4826	0.01907	0.010	58.388	0.113E-06	0.091
7104	2.694	0.01044	58.658	6.5023	0.01917	0.013	58.389	0.127E-06	0.118
7097	3.587	0.01678	58.769	9.1605	0.02175	0.006	58.376	0.758E-07	0.050
7098	3.587	0.01448	58.686	9.1862	0.02154	0.006	58.376	0.681E-07	0.053
7099	3.587	0.01236	58.662	9.1938	0.02163	0.009	58.376	0.731E-07	0.071
7100	3.587	0.01042	58.575	9.2210	0.02153	0.011	58.375	0.715E-07	0.091
7093	4.276	0.01675	58.661	11.4889	0.02391	0.006	58.375	0.539E-07	0.052
7094	4.276	0.01447	58.632	11.5020	0.02394	0.007	58.375	0.566E-07	0.059
7095	4.277	0.01235	58.548	11.5420	0.02374	0.011	58.375	0.503E-07	0.083
7089	4.808	0.01674	58.718	13.3568	0.02589	0.009	58.383	0.530E-07	0.073
7091	4.809	0.01235	58.590	13.4333	0.02589	0.015	58.384	0.527E-07	0.116
7090	4.809	0.01446	58.535	13.4654	0.02594	0.012	58.384	0.523E-07	0.093
7085	5.368	0.01673	58.660	15.4886	0.02833	0.010	58.392	0.519E-07	0.078
7086	5.368	0.01445	58.574	15.5536	0.02830	0.013	58.395	0.528E-07	0.101
7081	6.065	0.01918	58.657	18.1917	0.03128	0.009	58.408	0.504E-07	0.075
7083	6.068	0.01445	58.632	18.2258	0.03137	0.014	58.412	0.645E-07	0.117
7082	6.066	0.01673	58.574	18.2743	0.03142	0.011	58.409	0.554E-07	0.091
7078	6.638	0.01916	58.705	20.3566	0.03372	0.010	58.415	0.523E-07	0.080
7077	6.638	0.02177	58.644	20.4203	0.03398	0.006	58.416	0.477E-07	0.048
7079	6.638	0.01671	58.609	20.4579	0.03387	0.013	58.417	0.578E-07	0.105
7073	7.205	0.02453	58.700	22.4643	0.03675	0.010	58.385	0.406E-07	0.080
7074	7.205	0.02175	58.647	22.5246	0.03637	0.012	58.386	0.414E-07	0.092
7076	7.205	0.01669	58.605	22.5736	0.03637	0.018	58.384	0.435E-07	0.140

Table 1. The thermal conductivity and thermal diffusivity of pure neon. (continued)

Run point	P_{cell} MPa	Q W·m^{-1}	T_{exp} K	ρ_{calc} mol·L^{-1}	λ_{exp} W·m^{-1}·K^{-1}	STAT	T_{cell} K	a m^2·s^{-1}	DSTAT
7075	7.205	0.01914	58.556	22.6310	0.03651	0.014	58.386	0.443E-07	0.112
7069	7.792	0.02746	58.675	24.5211	0.03938	0.005	58.387	0.393E-07	0.042
7070	7.792	0.02452	58.626	24.5811	0.03913	0.006	58.387	0.388E-07	0.048
7072	7.794	0.01913	58.580	24.6407	0.03894	0.009	58.386	0.445E-07	0.072
7071	7.793	0.02174	58.538	24.6897	0.03896	0.007	58.387	0.392E-07	0.057
7065	8.479	0.03053	58.704	26.6139	0.04154	0.005	58.357	0.271E-07	0.038
7067	8.480	0.02447	58.628	26.7094	0.04166	0.007	58.357	0.263E-07	0.048
7066	8.479	0.02741	58.577	26.7678	0.04190	0.005	58.358	0.286E-07	0.040
7068	8.481	0.02170	58.532	26.8285	0.04191	0.008	58.357	0.297E-07	0.060
7061	9.283	0.03382	58.710	28.7686	0.04503	0.005	58.378	0.364E-07	0.034
7062	9.284	0.02896	58.602	28.8979	0.04480	0.005	58.378	0.364E-07	0.041
7064	9.285	0.02038	58.601	28.9019	0.04450	0.009	58.378	0.341E-07	0.069
7063	9.284	0.02448	58.533	28.9820	0.04436	0.007	58.378	0.344E-07	0.054
7057	10.200	0.03908	58.752	30.8125	0.04789	0.004	58.400	0.431E-07	0.030
7058	10.200	0.03383	58.681	30.8936	0.04787	0.005	58.400	0.451E-07	0.039
7059	10.201	0.02896	58.654	30.9258	0.04769	0.006	58.400	0.467E-07	0.048
7060	10.203	0.02449	58.574	31.0203	0.04732	0.007	58.399	0.483E-07	0.059
7053	11.068	0.04469	58.817	32.4316	0.05072	0.004	58.395	0.441E-07	0.034
7054	11.071	0.03726	58.738	32.5222	0.05056	0.006	58.394	0.422E-07	0.045
7055	11.073	0.03052	58.649	32.6211	0.05043	0.007	58.393	0.424E-07	0.057
7056	11.075	0.02448	58.589	32.6891	0.04995	0.010	58.394	0.483E-07	0.079
7049	12.108	0.04860	58.778	34.2093	0.05374	0.004	58.378	0.386E-07	0.033
7050	12.112	0.04084	58.700	34.2945	0.05345	0.005	58.379	0.378E-07	0.042
7051	12.115	0.03377	58.612	34.3884	0.05332	0.007	58.378	0.401E-07	0.053
7052	12.118	0.02739	58.555	34.4504	0.05295	0.010	58.380	0.401E-07	0.075
7045	13.409	0.05270	58.811	36.0119	0.05695	0.004	58.374	0.394E-07	0.029
7046	13.414	0.04459	58.753	36.0721	0.05683	0.005	58.373	0.392E-07	0.037
7047	13.416	0.03719	58.700	36.1250	0.05672	0.006	58.374	0.393E-07	0.047
7048	13.418	0.03047	58.537	36.2832	0.05651	0.008	58.375	0.394E-07	0.062
7041	15.037	0.05697	58.818	37.9179	0.06063	0.004	58.395	0.311E-07	0.028
7042	15.042	0.04853	58.759	37.9757	0.06047	0.004	58.395	0.306E-07	0.032
7043	15.047	0.04079	58.703	38.0298	0.06042	0.006	58.395	0.285E-07	0.041
7044	15.050	0.03374	58.544	38.1719	0.06011	0.008	58.395	0.272E-07	0.057
7037	17.026	0.06376	58.898	39.7830	0.06475	0.003	58.415	0.391E-07	0.024
7038	17.030	0.05268	58.767	39.8915	0.06460	0.004	58.416	0.380E-07	0.031
7039	17.036	0.04268	58.739	39.9190	0.06462	0.006	58.418	0.391E-07	0.044
7040	17.038	0.03375	58.587	40.0439	0.06422	0.007	58.417	0.372E-07	0.056
7033	19.186	0.07592	58.958	41.4831	0.06903	0.003	58.417	0.437E-07	0.020
7034	19.192	0.06373	58.857	41.5631	0.06908	0.003	58.417	0.428E-07	0.026
7035	19.198	0.05266	58.740	41.6542	0.06900	0.004	58.418	0.421E-07	0.034
7036	19.204	0.04267	58.664	41.7146	0.06910	0.005	58.419	0.432E-07	0.043
7029	21.890	0.07581	58.941	43.3221	0.07402	0.002	58.406	0.508E-07	0.018
7030	21.900	0.06365	58.852	43.3893	0.07403	0.003	58.409	0.520E-07	0.021
7031	21.909	0.05260	58.778	43.4453	0.07400	0.003	58.408	0.537E-07	0.026

Table 1. The thermal conductivity and thermal diffusivity of pure neon. (continued)

Run point	P_{cell} MPa	Q W·m^{-1}	T_{exp} K	ρ_{calc} mol·L^{-1}	λ_{exp} W·m^{-1}·K^{-1}	STAT	T_{cell} K	a m^2·s^{-1}	DSTAT
7032	21.917	0.04262	58.691	43.5102	0.07400	0.005	58.408	0.566E-07	0.037
7025	25.215	0.08897	58.969	45.1730	0.07956	0.002	58.408	0.522E-07	0.015
7026	25.227	0.07573	58.873	45.2391	0.07951	0.002	58.409	0.527E-07	0.017
7027	25.237	0.06360	58.773	45.3063	0.07953	0.003	58.407	0.563E-07	0.023
7028	25.246	0.05255	58.730	45.3381	0.07942	0.004	58.410	0.554E-07	0.030
7021	29.223	0.10317	59.027	47.0149	0.08571	0.001	58.396	0.533E-07	0.011
7022	29.235	0.08883	58.918	47.0825	0.08548	0.002	58.398	0.511E-07	0.014
7023	29.246	0.07561	58.817	47.1452	0.08561	0.002	58.397	0.519E-07	0.019
7024	29.257	0.06351	58.740	47.1940	0.08562	0.003	58.400	0.502E-07	0.025
7017	34.047	0.11838	59.062	48.8833	0.09255	0.001	58.385	0.517E-07	0.010
7018	34.066	0.10298	58.966	48.9407	0.09252	0.001	58.385	0.509E-07	0.011
7019	34.083	0.08869	58.866	48.9993	0.09240	0.002	58.385	0.485E-07	0.014
7020	34.096	0.07553	58.801	49.0386	0.09251	0.002	58.385	0.495E-07	0.017
7013	39.944	0.13479	59.107	50.7907	0.09981	0.001	58.394	0.554E-07	0.009
7014	39.959	0.11827	59.030	50.8327	0.10004	0.001	58.396	0.564E-07	0.009
7015	39.974	0.10291	58.940	50.8806	0.09961	0.001	58.395	0.544E-07	0.012
7016	39.986	0.08864	58.855	50.9255	0.10003	0.002	58.396	0.540E-07	0.015
7009	46.396	0.17098	59.261	52.5040	0.10762	0.001	58.406	0.605E-07	0.007
7010	46.423	0.15223	59.169	52.5521	0.10768	0.001	58.407	0.603E-07	0.008
7011	46.446	0.13464	59.078	52.5985	0.10768	0.001	58.405	0.605E-07	0.008
7012	46.470	0.11817	58.982	52.6475	0.10784	0.001	58.406	0.611E-07	0.010
7005	54.786	0.19050	59.288	54.4552	0.11662	0.001	58.406	0.614E-07	0.006
7006	54.803	0.17067	59.196	54.4969	0.11676	0.001	58.405	0.615E-07	0.007
7007	54.818	0.15200	59.110	54.5354	0.11677	0.001	58.407	0.623E-07	0.008
7008	54.832	0.13444	59.035	54.5690	0.11697	0.001	58.406	0.643E-07	0.009
7001	63.097	0.21077	59.285	56.1125	0.12519	0.001	58.368	0.658E-07	0.006
7002	63.110	0.18997	59.197	56.1486	0.12518	0.001	58.368	0.642E-07	0.006
7003	63.127	0.17021	59.107	56.1863	0.12544	0.001	58.370	0.650E-07	0.007
7004	63.137	0.15160	59.032	56.2167	0.12529	0.001	58.370	0.655E-07	0.008
Nominal temperature = 101 K									
2189	0.365	0.04376	101.739	0.4323	0.02210	0.004	100.018	0.337E-05	0.045
2190	0.365	0.03824	101.532	0.4332	0.02196	0.005	100.020	0.334E-05	0.055
2191	0.365	0.03305	101.331	0.4341	0.02188	0.005	100.019	0.335E-05	0.066
2192	0.365	0.02828	101.122	0.4350	0.02197	0.007	100.021	0.348E-05	0.089
2185	0.702	0.04396	101.607	0.8337	0.02256	0.005	100.029	0.165E-05	0.060
2186	0.702	0.03830	101.414	0.8353	0.02259	0.007	100.032	0.166E-05	0.076
2187	0.702	0.03295	101.204	0.8371	0.02250	0.008	100.028	0.166E-05	0.093
2188	0.702	0.02823	101.033	0.8386	0.02244	0.007	100.028	0.168E-05	0.081
2181	1.052	0.04266	101.493	1.2532	0.02254	0.003	100.017	0.107E-05	0.038
2182	1.052	0.03765	101.291	1.2558	0.02281	0.004	100.019	0.103E-05	0.045
2183	1.052	0.03250	101.118	1.2581	0.02271	0.005	100.020	0.103E-05	0.054
2184	1.052	0.02785	100.960	1.2601	0.02277	0.006	100.022	0.111E-05	0.066
2177	1.453	0.04321	101.411	1.7343	0.02332	0.003	100.019	0.752E-06	0.036
2178	1.453	0.03765	101.228	1.7376	0.02307	0.004	100.016	0.732E-06	0.044

Table 1. The thermal conductivity and thermal diffusivity of pure neon. (continued)

Run point	P_{cell} MPa	Q $W \cdot m^{-1}$	T_{exp} K	ρ_{calc} $mol \cdot L^{-1}$	λ_{exp} $W \cdot m^{-1} \cdot K^{-1}$	STAT	T_{cell} K	a $m^2 \cdot s^{-1}$	DSTAT
2179	1.453	0.03264	101.076	1.7403	0.02313	0.005	100.018	0.741E-06	0.054
2180	1.453	0.02779	100.888	1.7437	0.02311	0.007	100.015	0.747E-06	0.070
2173	2.023	0.04281	101.288	2.4231	0.02386	0.004	100.009	0.501E-06	0.036
2174	2.023	0.03744	101.136	2.4270	0.02376	0.004	100.005	0.493E-06	0.045
2175	2.023	0.03234	100.979	2.4311	0.02357	0.005	100.010	0.494E-06	0.054
2176	2.023	0.02772	100.851	2.4344	0.02351	0.006	100.011	0.502E-06	0.066
2169	2.407	0.04403	101.304	2.8862	0.02427	0.003	100.024	0.447E-06	0.035
2170	2.407	0.03829	101.149	2.8911	0.02403	0.004	100.024	0.437E-06	0.045
2172	2.407	0.03300	100.996	2.8958	0.02379	0.005	100.024	0.442E-06	0.054
2172	2.407	0.02822	100.857	2.9002	0.02384	0.007	100.022	0.452E-06	0.070
2165	2.714	0.04398	101.289	3.2576	0.02417	0.003	100.030	0.376E-06	0.035
2166	2.714	0.03819	101.115	3.2637	0.02418	0.004	100.027	0.391E-06	0.042
2167	2.714	0.03290	100.963	3.2691	0.02421	0.005	100.026	0.395E-06	0.053
2168	2.714	0.02809	100.823	3.2741	0.02422	0.007	100.024	0.408E-06	0.068
2161	3.489	0.04390	101.215	4.1998	0.02479	0.004	100.021	0.297E-06	0.040
2162	3.489	0.03845	101.048	4.2076	0.02498	0.005	100.021	0.299E-06	0.050
2163	3.489	0.03302	100.910	4.2141	0.02470	0.005	100.020	0.293E-06	0.052
2164	3.489	0.02827	100.775	4.2205	0.02477	0.007	100.021	0.281E-06	0.064
2157	4.413	0.04380	101.124	5.3243	0.02568	0.004	100.014	0.225E-06	0.041
2158	4.413	0.03814	100.990	5.3325	0.02541	0.005	100.014	0.228E-06	0.052
2159	4.413	0.03303	100.872	5.3397	0.02537	0.006	100.017	0.229E-06	0.060
2160	4.413	0.02821	100.729	5.3484	0.02532	0.008	100.013	0.226E-06	0.076
2153	5.392	0.04405	101.073	6.5132	0.02643	0.004	100.012	0.185E-06	0.041
2154	5.392	0.03852	100.946	6.5229	0.02648	0.005	100.017	0.186E-06	0.051
2155	5.393	0.03317	100.817	6.5337	0.02642	0.007	100.015	0.182E-06	0.061
2156	5.393	0.02825	100.698	6.5427	0.02615	0.009	100.017	0.179E-06	0.079
2149	6.190	0.04417	101.017	7.4800	0.02743	0.004	100.007	0.160E-06	0.041
2150	6.190	0.03844	100.880	7.4921	0.02725	0.006	100.010	0.154E-06	0.050
2151	6.190	0.03313	100.761	7.5027	0.02711	0.007	100.010	0.153E-06	0.066
2152	6.190	0.02828	100.648	7.5129	0.02701	0.009	100.008	0.153E-06	0.078
2145	7.017	0.04422	101.029	8.4698	0.02802	0.005	100.033	0.180E-06	0.044
2146	7.017	0.03798	100.883	8.4847	0.02776	0.005	100.033	0.180E-06	0.050
2147	7.017	0.03299	100.772	8.4961	0.02789	0.007	100.036	0.185E-06	0.061
2148	7.017	0.02817	100.677	8.5058	0.02784	0.009	100.038	0.195E-06	0.081
2141	7.738	0.04428	100.991	9.3314	0.02868	0.005	100.029	0.164E-06	0.043
2142	7.738	0.03866	100.857	9.3466	0.02876	0.006	100.028	0.168E-06	0.053
2143	7.738	0.03337	100.748	9.3590	0.02858	0.007	100.028	0.170E-06	0.067
2144	7.738	0.02850	100.639	9.3715	0.02852	0.009	100.030	0.182E-06	0.085
2137	8.547	0.04416	100.949	10.2892	0.02954	0.005	100.028	0.149E-06	0.047
2138	8.547	0.03842	100.826	10.3048	0.02942	0.006	100.030	0.152E-06	0.058
2139	8.548	0.03321	100.729	10.3178	0.02945	0.008	100.031	0.157E-06	0.069
2140	8.548	0.02836	100.629	10.3306	0.02928	0.010	100.032	0.163E-06	0.088
2133	9.453	0.04421	100.892	11.3507	0.03033	0.005	100.032	0.102E-06	0.042
2134	9.454	0.03863	100.776	11.3678	0.03026	0.006	100.030	0.102E-06	0.055

Table 1. The thermal conductivity and thermal diffusivity of pure neon. (continued)

Run point	P_{cell} MPa	Q W·m^{-1}	T_{exp} K	ρ_{calc} mol·L^{-1}	λ_{exp} W·m^{-1}·K^{-1}	STAT	T_{cell} K	a m^2·s^{-1}	DSTAT
2135	9.454	0.03342	100.682	11.3810	0.03024	0.007	100.032	0.977E-07	0.062
2136	9.454	0.02854	100.553	11.3994	0.03017	0.009	100.031	0.982E-07	0.082
2129	10.412	0.04417	100.858	12.4542	0.03135	0.005	100.033	0.965E-07	0.044
2130	10.413	0.03855	100.741	12.4731	0.03124	0.006	100.035	0.961E-07	0.056
2131	10.413	0.03337	100.650	12.4873	0.03122	0.008	100.037	0.945E-07	0.068
2132	10.414	0.02852	100.536	12.5060	0.03112	0.010	100.035	0.925E-07	0.084
2125	11.336	0.04704	100.866	13.4900	0.03220	0.005	100.033	0.891E-07	0.042
2126	11.336	0.04127	100.769	13.5072	0.03210	0.006	100.033	0.893E-07	0.050
2127	11.337	0.03591	100.668	13.5251	0.03207	0.007	100.034	0.855E-07	0.062
2128	11.337	0.03092	100.588	13.5386	0.03213	0.009	100.033	0.875E-07	0.078
2121	12.234	0.04999	100.893	14.4746	0.03309	0.004	100.032	0.852E-07	0.038
2122	12.235	0.04418	100.794	14.4934	0.03308	0.006	100.033	0.829E-07	0.047
2123	12.236	0.03862	100.685	14.5140	0.03310	0.007	100.032	0.836E-07	0.058
2124	12.236	0.03335	100.597	14.5299	0.03343	0.008	100.034	0.883E-07	0.068
2117	13.202	0.04995	100.859	15.5226	0.03404	0.005	100.033	0.810E-07	0.040
2118	13.203	0.04416	100.759	15.5429	0.03412	0.006	100.033	0.793E-07	0.050
2119	13.204	0.03860	100.653	15.5642	0.03409	0.007	100.033	0.798E-07	0.058
2120	13.204	0.03339	100.570	15.5806	0.03411	0.009	100.033	0.777E-07	0.073
2113	14.109	0.05615	100.938	16.4593	0.03497	0.004	100.030	0.792E-07	0.035
2114	14.112	0.05010	100.836	16.4825	0.03508	0.005	100.033	0.773E-07	0.041
2115	14.112	0.04414	100.744	16.5022	0.03505	0.006	100.036	0.754E-07	0.048
2116	14.113	0.03859	100.647	16.5229	0.03494	0.007	100.034	0.728E-07	0.057
2109	15.271	0.05594	100.903	17.6512	0.03631	0.004	100.035	0.796E-07	0.036
2110	15.272	0.04968	100.803	17.6738	0.03667	0.005	100.038	0.782E-07	0.043
2111	15.273	0.04376	100.705	17.6961	0.03606	0.006	100.037	0.759E-07	0.049
2112	15.273	0.03840	100.621	17.7153	0.03619	0.007	100.039	0.771E-07	0.062
2105	16.174	0.05622	100.876	18.5501	0.03734	0.004	100.030	0.739E-07	0.037
2106	16.174	0.04986	100.772	18.5740	0.03748	0.005	100.031	0.736E-07	0.042
2107	16.174	0.04345	100.655	18.6007	0.03764	0.006	100.023	0.771E-07	0.055
2108	16.174	0.03787	100.564	18.6217	0.03708	0.008	100.026	0.732E-07	0.063
2101	17.190	0.05628	100.829	19.5372	0.03877	0.005	100.029	0.679E-07	0.039
2102	17.192	0.04956	100.730	19.5622	0.03848	0.006	100.024	0.662E-07	0.045
2103	17.192	0.04374	100.638	19.5848	0.03840	0.007	100.025	0.683E-07	0.054
2104	17.193	0.03823	100.580	19.5993	0.03807	0.008	100.024	0.653E-07	0.066
2097	18.344	0.06279	100.895	20.5912	0.03951	0.004	100.023	0.638E-07	0.032
2098	18.345	0.05637	100.815	20.6114	0.03974	0.005	100.025	0.661E-07	0.038
2099	18.345	0.05004	100.699	20.6408	0.03960	0.005	100.025	0.622E-07	0.044
2100	18.346	0.04411	100.626	20.6596	0.03947	0.006	100.027	0.611E-07	0.052
2093	19.341	0.06286	100.849	21.4949	0.04100	0.004	100.013	0.635E-07	0.029
2094	19.342	0.05601	100.762	21.5178	0.04082	0.004	100.016	0.613E-07	0.034
2095	19.343	0.04981	100.672	21.5412	0.04060	0.005	100.019	0.617E-07	0.041
2096	19.344	0.04383	100.612	21.5574	0.04039	0.007	100.016	0.594E-07	0.056
2089	20.490	0.06987	100.935	22.4629	0.04206	0.003	100.019	0.632E-07	0.026
2090	20.492	0.06284	100.835	22.4903	0.04205	0.004	100.018	0.637E-07	0.031

Table 1. The thermal conductivity and thermal diffusivity of pure neon. (continued)

Run point	P_{cell} MPa	Q $W \cdot m^{-1}$	T_{exp} K	ρ_{calc} $mol \cdot L^{-1}$	λ_{exp} $W \cdot m^{-1} \cdot K^{-1}$	STAT	T_{cell} K	a $m^2 \cdot s^{-1}$	DSTAT
2091	20.492	0.05603	100.729	22.5186	0.04210	0.004	100.016	0.621E-07	0.033
2092	20.493	0.04987	100.650	22.5402	0.04197	0.005	100.020	0.599E-07	0.041
2085	21.780	0.07034	100.927	23.5301	0.04346	0.004	100.034	0.648E-07	0.032
2086	21.780	0.06312	100.830	23.5562	0.04344	0.004	100.032	0.649E-07	0.031
2087	21.780	0.05611	100.729	23.5836	0.04347	0.004	100.026	0.646E-07	0.036
2088	21.780	0.04974	100.669	23.5996	0.04334	0.005	100.030	0.652E-07	0.044
2081	23.021	0.07058	100.931	24.5097	0.04463	0.004	100.051	0.688E-07	0.030
2082	23.021	0.06324	100.840	24.5346	0.04457	0.004	100.049	0.703E-07	0.036
2083	23.021	0.05642	100.749	24.5596	0.04456	0.005	100.049	0.709E-07	0.042
2084	23.021	0.05001	100.676	24.5797	0.04451	0.006	100.046	0.729E-07	0.051
2077	24.290	0.07000	100.885	25.4807	0.04571	0.005	100.027	0.718E-07	0.045
2078	24.290	0.06306	100.793	25.5068	0.04574	0.005	100.030	0.732E-07	0.046
2079	24.292	0.05645	100.709	25.5314	0.04579	0.007	100.032	0.749E-07	0.062
2080	24.293	0.05010	100.617	25.5576	0.04581	0.009	100.031	0.769E-07	0.075
2073	25.738	0.07798	100.954	26.5038	0.04751	0.005	100.034	0.706E-07	0.040
2074	25.739	0.07036	100.854	26.5333	0.04728	0.006	100.030	0.695E-07	0.046
2075	25.740	0.06309	100.761	26.5600	0.04715	0.006	100.030	0.718E-07	0.054
2076	25.740	0.05643	100.682	26.5828	0.04709	0.008	100.031	0.719E-07	0.065
2069	27.117	0.07771	100.905	27.4630	0.04868	0.005	100.024	0.681E-07	0.042
2070	27.118	0.07029	100.812	27.4905	0.04878	0.006	100.023	0.690E-07	0.048
2071	27.119	0.06314	100.742	27.5109	0.04852	0.007	100.024	0.677E-07	0.056
2072	27.120	0.05648	100.649	27.5387	0.04854	0.008	100.027	0.697E-07	0.066
2065	28.607	0.07773	100.881	28.4419	0.05012	0.004	100.025	0.665E-07	0.036
2066	28.609	0.07028	100.789	28.4694	0.05017	0.005	100.025	0.661E-07	0.042
2067	28.611	0.06313	100.712	28.4933	0.05038	0.006	100.027	0.687E-07	0.049
2068	28.611	0.05622	100.619	28.5200	0.05013	0.007	100.025	0.676E-07	0.059
2061	30.278	0.08583	100.928	29.4613	0.05194	0.004	100.020	0.637E-07	0.032
2062	30.279	0.07411	100.798	29.4997	0.05179	0.005	100.021	0.642E-07	0.040
2063	30.281	0.06323	100.677	29.5357	0.05168	0.006	100.020	0.621E-07	0.051
2064	30.282	0.05330	100.595	29.5602	0.05171	0.008	100.023	0.660E-07	0.065
2057	32.025	0.08572	100.921	30.4849	0.05347	0.004	100.028	0.645E-07	0.034
2058	32.026	0.07416	100.788	30.5238	0.05364	0.005	100.029	0.654E-07	0.041
2059	32.026	0.06321	100.662	30.5607	0.05339	0.006	100.028	0.656E-07	0.052
2060	32.026	0.05324	100.544	30.5951	0.05331	0.008	100.028	0.663E-07	0.068
2053	33.956	0.09390	100.966	31.5366	0.05550	0.004	100.033	0.644E-07	0.030
2054	33.958	0.07788	100.811	31.5822	0.05513	0.005	100.037	0.638E-07	0.039
2055	33.960	0.06325	100.642	31.6323	0.05517	0.006	100.037	0.650E-07	0.052
2056	33.961	0.05013	100.492	31.6767	0.05529	0.009	100.037	0.676E-07	0.077
2049	35.730	0.09403	100.942	32.4676	0.05691	0.004	100.033	0.639E-07	0.031
2050	35.732	0.07801	100.783	32.5147	0.05691	0.003	100.035	0.626E-07	0.027
2051	35.734	0.06344	100.639	32.5574	0.05696	0.006	100.036	0.640E-07	0.053
2052	35.736	0.05028	100.513	32.5947	0.05695	0.009	100.034	0.632E-07	0.076
2045	37.739	0.10246	100.989	33.4436	0.05899	0.003	100.027	0.637E-07	0.028
2046	37.742	0.08568	100.838	33.4887	0.05863	0.005	100.027	0.634E-07	0.037

Table 1. The thermal conductivity and thermal diffusivity of pure neon. (continued)

Run point	P_{cell} MPa	Q W·m^{-1}	T_{exp} K	ρ_{calc} mol·L^{-1}	λ_{exp} W·m^{-1}·K^{-1}	STAT	T_{cell} K	a m^2·s^{-1}	DSTAT
2047	37.745	0.07042	100.682	33.5351	0.05889	0.006	100.028	0.632E-07	0.049
2048	37.748	0.05640	100.538	33.5781	0.05881	0.008	100.030	0.628E-07	0.069
2041	39.754	0.11144	101.050	34.3642	0.06076	0.003	100.034	0.651E-07	0.025
2042	39.754	0.08967	100.843	34.4241	0.06051	0.004	100.033	0.636E-07	0.036
2043	39.755	0.07024	100.669	34.4742	0.06088	0.006	100.037	0.668E-07	0.050
2044	39.756	0.05310	100.520	34.5176	0.06044	0.009	100.036	0.682E-07	0.078
2037	42.204	0.11167	100.992	35.4552	0.06297	0.003	100.024	0.588E-07	0.021
2038	42.208	0.08986	100.802	35.5110	0.06276	0.004	100.025	0.565E-07	0.029
2039	42.210	0.07034	100.624	35.5627	0.06292	0.005	100.024	0.557E-07	0.043
2040	42.212	0.05325	100.480	35.6046	0.06274	0.008	100.026	0.551E-07	0.065
2033	44.672	0.12100	101.059	36.4520	0.06564	0.002	100.040	0.621E-07	0.018
2034	44.675	0.09806	100.859	36.5095	0.06481	0.003	100.042	0.615E-07	0.028
2035	44.677	0.07778	100.697	36.5564	0.06499	0.005	100.043	0.628E-07	0.038
2036	44.680	0.05975	100.540	36.6021	0.06506	0.007	100.040	0.616E-07	0.055
2029	47.118	0.12109	101.012	37.4138	0.06735	0.002	100.027	0.592E-07	0.017
2030	47.119	0.09825	100.816	37.4692	0.06721	0.003	100.027	0.593E-07	0.023
2031	47.124	0.07774	100.659	37.5148	0.06720	0.004	100.029	0.565E-07	0.035
2032	47.125	0.05964	100.503	37.5591	0.06717	0.006	100.029	0.575E-07	0.049
2025	49.880	0.12101	101.054	38.4106	0.06968	0.002	100.076	0.702E-07	0.019
2026	49.888	0.09798	100.848	38.4703	0.07031	0.003	100.077	0.708E-07	0.025
2027	49.890	0.07737	100.684	38.5167	0.06978	0.004	100.075	0.739E-07	0.037
2028	49.891	0.05938	100.520	38.5627	0.06960	0.006	100.070	0.787E-07	0.053
2021	52.842	0.12091	100.951	39.4548	0.07254	0.002	100.041	0.627E-07	0.019
2022	52.844	0.09776	100.777	39.5031	0.07201	0.003	100.040	0.604E-07	0.026
2023	52.845	0.07742	100.604	39.5509	0.07188	0.004	100.039	0.612E-07	0.035
2024	52.846	0.05958	100.449	39.5940	0.07195	0.007	100.040	0.635E-07	0.053
2017	55.910	0.12944	100.860	40.4679	0.07508	0.002	99.915	0.620E-07	0.019
2018	55.914	0.10585	100.689	40.5153	0.07478	0.003	99.918	0.606E-07	0.025
2019	55.918	0.08469	100.534	40.5586	0.07470	0.004	99.915	0.597E-07	0.035
2020	55.921	0.06586	100.399	40.5963	0.07477	0.006	99.917	0.595E-07	0.050
2013	59.232	0.12995	100.845	41.4771	0.07814	0.002	99.914	0.734E-07	0.021
2014	59.234	0.10593	100.688	41.5194	0.07743	0.003	99.913	0.782E-07	0.027
2015	59.235	0.08489	100.541	41.5594	0.07765	0.004	99.914	0.805E-07	0.037
2016	59.236	0.06607	100.365	41.6070	0.07757	0.006	99.914	0.860E-07	0.055
2009	62.864	0.14559	100.929	42.4857	0.08050	0.002	99.913	0.707E-07	0.018
2010	62.867	0.12058	100.756	42.5321	0.08060	0.003	99.919	0.728E-07	0.024
2011	62.868	0.09785	100.581	42.5788	0.08048	0.004	99.916	0.729E-07	0.031
2012	62.864	0.07732	100.429	42.6178	0.08055	0.005	99.921	0.748E-07	0.045
2005	66.383	0.14532	100.897	43.4330	0.08323	0.002	99.914	0.716E-07	0.020
2006	66.385	0.12031	100.720	43.4795	0.08317	0.003	99.914	0.743E-07	0.026
2007	66.388	0.09777	100.562	43.5214	0.08346	0.004	99.914	0.765E-07	0.036
2008	66.393	0.07714	100.405	43.5636	0.08326	0.006	99.914	0.794E-07	0.050
2001	70.173	0.14398	100.830	44.4024	0.08584	0.002	99.898	0.695E-07	0.020
2002	70.174	0.11973	100.669	44.4439	0.08604	0.003	99.895	0.694E-07	0.027

Table 1. The thermal conductivity and thermal diffusivity of pure neon. (continued)

Run point	P_{cell} MPa	Q W·m^{-1}	T_{exp} K	ρ_{calc} mol·L^{-1}	λ_{exp} W·m^{-1}·K^{-1}	STAT	T_{cell} K	a m^2·s^{-1}	DSTAT
2003	70.173	0.09735	100.521	44.4816	0.08618	0.004	99.898	0.715E-07	0.036
2004	70.173	0.07715	100.364	44.5219	0.08606	0.006	99.899	0.718E-07	0.050
Nominal temperature = 151 K									
5141	0.941	0.07472	152.232	0.7409	0.03036	0.002	150.116	0.195E-05	0.027
5142	0.941	0.06519	151.965	0.7422	0.03033	0.003	150.116	0.197E-05	0.034
5143	0.940	0.05632	151.713	0.7429	0.03028	0.004	150.115	0.196E-05	0.041
5144	0.940	0.04811	151.480	0.7440	0.03022	0.005	150.114	0.193E-05	0.053
5137	1.726	0.07469	152.078	1.3560	0.03095	0.002	150.117	0.108E-05	0.027
5138	1.726	0.06516	151.831	1.3583	0.03095	0.003	150.119	0.109E-05	0.033
5139	1.726	0.05630	151.598	1.3604	0.03091	0.004	150.117	0.109E-05	0.040
5140	1.726	0.04809	151.386	1.3623	0.03084	0.004	150.117	0.111E-05	0.050
5133	2.423	0.07467	151.970	1.8990	0.03144	0.002	150.115	0.793E-06	0.023
5134	2.423	0.06515	151.740	1.9020	0.03146	0.003	150.116	0.825E-06	0.028
5135	2.423	0.05629	151.517	1.9048	0.03137	0.003	150.118	0.788E-06	0.035
5136	2.423	0.04809	151.313	1.9074	0.03138	0.004	150.115	0.810E-06	0.039
5129	3.064	0.07466	151.907	2.3957	0.03189	0.002	150.116	0.651E-06	0.023
5130	3.064	0.06514	151.681	2.3993	0.03184	0.003	150.117	0.646E-06	0.028
5131	3.064	0.05629	151.468	2.4028	0.03173	0.003	150.116	0.632E-06	0.034
5132	3.064	0.04808	151.277	2.4059	0.03176	0.004	150.118	0.655E-06	0.044
5125	3.741	0.07465	151.851	2.9175	0.03231	0.002	150.117	0.542E-06	0.023
5126	3.741	0.06514	151.632	2.9218	0.03223	0.003	150.118	0.532E-06	0.028
5127	3.740	0.05628	151.425	2.9254	0.03211	0.003	150.115	0.527E-06	0.035
5128	3.740	0.04809	151.236	2.9291	0.03211	0.004	150.114	0.530E-06	0.044
5121	4.423	0.07463	151.746	3.4410	0.03262	0.004	150.119	0.460E-06	0.043
5122	4.423	0.06512	151.534	3.4460	0.03258	0.005	150.117	0.464E-06	0.053
5123	4.422	0.05627	151.338	3.4500	0.03272	0.006	150.120	0.479E-06	0.065
5124	4.422	0.04807	151.171	3.4540	0.03255	0.008	150.120	0.461E-06	0.078
5117	5.851	0.07461	151.667	4.5225	0.03340	0.004	150.119	0.362E-06	0.043
5118	5.851	0.06510	151.470	4.5286	0.03338	0.005	150.117	0.363E-06	0.050
5119	5.851	0.05626	151.282	4.5344	0.03330	0.006	150.119	0.358E-06	0.063
5120	5.851	0.04807	151.101	4.5401	0.03325	0.008	150.117	0.358E-06	0.080
5113	7.140	0.07460	151.592	5.4849	0.03420	0.004	150.117	0.296E-06	0.042
5114	7.140	0.06509	151.399	5.4922	0.03408	0.005	150.116	0.294E-06	0.051
5115	7.140	0.05625	151.226	5.4987	0.03399	0.006	150.116	0.287E-06	0.063
5116	7.140	0.04807	151.049	5.5055	0.03397	0.008	150.114	0.290E-06	0.079
5109	8.555	0.07457	151.539	6.5229	0.03486	0.005	150.117	0.251E-06	0.044
5110	8.555	0.06507	151.360	6.5310	0.03476	0.005	150.118	0.248E-06	0.053
5111	8.554	0.05624	151.187	6.5383	0.03475	0.007	150.116	0.251E-06	0.066
5112	8.554	0.04806	151.022	6.5458	0.03480	0.009	150.115	0.258E-06	0.082
5105	10.051	0.07456	151.473	7.6012	0.03574	0.005	150.118	0.218E-06	0.044
5106	10.051	0.06506	151.296	7.6105	0.03543	0.006	150.117	0.204E-06	0.054
5107	10.051	0.05622	151.132	7.6191	0.03565	0.007	150.117	0.212E-06	0.067
5108	10.051	0.04804	150.980	7.6267	0.03541	0.009	150.117	0.203E-06	0.083
5101	11.457	0.07454	151.426	8.5929	0.03650	0.005	150.112	0.192E-06	0.043

Table 1. The thermal conductivity and thermal diffusivity of pure neon. (continued)

Run point	P_{cell} MPa	Q W·m^{-1}	T_{exp} K	ρ_{calc} mol·L^{-1}	λ_{exp} W·m^{-1}·K^{-1}	STAT	T_{cell} K	a m^2·s^{-1}	DSTAT
5102	11.457	0.06505	151.258	8.6028	0.03644	0.006	150.114	0.189E-06	0.053
5103	11.457	0.05621	151.093	8.6127	0.03642	0.007	150.112	0.188E-06	0.067
5104	11.457	0.04803	150.944	8.6216	0.03639	0.010	150.114	0.191E-06	0.092
5097	13.096	0.07454	151.380	9.7236	0.03743	0.005	150.117	0.176E-06	0.043
5098	13.096	0.06505	151.218	9.7346	0.03745	0.006	150.117	0.177E-06	0.055
5099	13.096	0.05621	151.071	9.7444	0.03750	0.007	150.114	0.180E-06	0.066
5100	13.096	0.04803	150.930	9.7540	0.03727	0.009	150.114	0.173E-06	0.087
5093	14.396	0.07454	151.332	10.6016	0.03805	0.005	150.112	0.156E-06	0.046
5094	14.396	0.06505	151.177	10.6129	0.03820	0.006	150.112	0.162E-06	0.055
5095	14.396	0.05622	151.034	10.6234	0.03810	0.007	150.110	0.159E-06	0.067
5096	14.396	0.04804	150.903	10.6330	0.03806	0.009	150.111	0.164E-06	0.083
5089	16.023	0.07452	151.282	11.6741	0.03909	0.005	150.110	0.144E-06	0.044
5090	16.023	0.06504	151.132	11.6861	0.03925	0.006	150.110	0.152E-06	0.055
5091	16.023	0.05622	150.993	11.6973	0.03912	0.008	150.110	0.148E-06	0.068
5092	16.024	0.04804	150.856	11.7088	0.03916	0.009	150.111	0.150E-06	0.085
5084	17.598	0.07451	151.245	12.6849	0.04006	0.005	150.109	0.135E-06	0.046
5086	17.598	0.06503	151.106	12.6970	0.04011	0.006	150.110	0.134E-06	0.056
5087	17.599	0.05620	150.965	12.7097	0.04004	0.008	150.111	0.135E-06	0.069
5088	17.599	0.04803	150.819	12.7225	0.03996	0.010	150.107	0.134E-06	0.088
5081	19.144	0.07449	151.212	13.6510	0.04097	0.005	150.108	0.122E-06	0.046
5082	19.145	0.06502	151.059	13.6655	0.04103	0.006	150.109	0.124E-06	0.056
5083	19.146	0.05619	150.929	13.6781	0.04096	0.008	150.109	0.121E-06	0.071
5084	19.146	0.04802	150.785	13.6914	0.04092	0.010	150.107	0.120E-06	0.086
5077	20.879	0.08991	151.402	14.6822	0.04213	0.004	150.117	0.116E-06	0.037
5078	20.880	0.07448	151.179	14.7046	0.04208	0.005	150.118	0.118E-06	0.047
5079	20.881	0.06052	150.975	14.7252	0.04203	0.007	150.117	0.113E-06	0.065
5080	20.881	0.04801	150.795	14.7435	0.04198	0.009	150.116	0.115E-06	0.081
5073	22.791	0.08988	151.351	15.8061	0.04330	0.004	150.123	0.106E-06	0.034
5074	22.791	0.07446	151.146	15.8281	0.04323	0.005	150.120	0.106E-06	0.047
5075	22.792	0.06050	150.932	15.8510	0.04319	0.005	150.121	0.103E-06	0.045
5076	22.793	0.04800	150.766	15.8690	0.04316	0.010	150.124	0.989E-07	0.088
5069	24.291	0.08989	151.320	16.6609	0.04425	0.004	150.117	0.104E-06	0.037
5070	24.291	0.07446	151.105	16.6844	0.04418	0.005	150.117	0.102E-06	0.048
5071	24.291	0.06049	150.913	16.7056	0.04407	0.007	150.119	0.977E-07	0.063
5072	24.291	0.04800	150.748	16.7238	0.04405	0.010	150.119	0.948E-07	0.086
5065	26.198	0.08979	151.292	17.7138	0.04560	0.004	150.109	0.112E-06	0.039
5066	26.199	0.07439	151.080	17.7386	0.04529	0.006	150.109	0.107E-06	0.050
5067	26.200	0.06044	150.897	17.7606	0.04524	0.008	150.111	0.106E-06	0.066
5068	26.201	0.04796	150.730	17.7802	0.04518	0.011	150.109	0.109E-06	0.096
5061	28.205	0.08977	151.253	18.7838	0.04645	0.004	150.113	0.100E-06	0.038
5062	28.205	0.07437	151.047	18.8090	0.04650	0.006	150.114	0.102E-06	0.050
5063	28.206	0.06043	150.860	18.8320	0.04648	0.008	150.113	0.103E-06	0.070
5064	28.207	0.04795	150.685	18.8535	0.04654	0.011	150.114	0.105E-06	0.096
5057	30.234	0.08976	151.219	19.8266	0.04779	0.005	150.118	0.993E-07	0.041

Table 1. The thermal conductivity and thermal diffusivity of pure neon. (continued)

Run point	P_{cell} MPa	Q W·m^{-1}	T_{exp} K	ρ_{calc} mol·L^{-1}	λ_{exp} W·m^{-1}·K^{-1}	STAT	T_{cell} K	a m^2·s^{-1}	DSTAT
5058	30.235	0.07437	151.025	19.8511	0.04779	0.006	150.117	0.997E-07	0.052
5059	30.236	0.06043	150.845	19.8741	0.04773	0.008	150.116	0.995E-07	0.069
5060	30.237	0.04795	150.673	19.8961	0.04784	0.011	150.115	0.101E-06	0.098
5053	32.158	0.08975	151.187	20.7795	0.04888	0.005	150.118	0.941E-07	0.041
5054	32.158	0.07436	150.989	20.8054	0.04899	0.006	150.116	0.943E-07	0.054
5055	32.159	0.06042	150.821	20.8275	0.04888	0.008	150.118	0.929E-07	0.069
5056	32.160	0.04795	150.652	20.8498	0.04889	0.012	150.118	0.966E-07	0.100
5049	34.356	0.10660	151.360	21.8008	0.05043	0.003	150.123	0.949E-07	0.022
5050	34.358	0.08976	151.166	21.8275	0.05027	0.005	150.124	0.932E-07	0.042
5051	34.359	0.07436	150.978	21.8529	0.05029	0.006	150.122	0.922E-07	0.056
5052	34.359	0.06042	150.801	21.8766	0.05023	0.008	150.123	0.915E-07	0.073
5045	36.545	0.10659	151.322	22.8044	0.05171	0.004	150.121	0.894E-07	0.032
5046	36.547	0.08974	151.120	22.8325	0.05151	0.005	150.118	0.868E-07	0.043
5047	36.547	0.07436	150.953	22.8557	0.05161	0.006	150.120	0.896E-07	0.055
5048	36.548	0.06042	150.798	22.8773	0.05150	0.009	150.119	0.864E-07	0.076
5041	38.911	0.10657	151.294	23.8436	0.05313	0.003	150.130	0.888E-07	0.024
5042	38.913	0.08973	151.095	23.8720	0.05305	0.005	150.130	0.860E-07	0.043
5043	38.913	0.07435	150.920	23.8969	0.05323	0.007	150.129	0.888E-07	0.057
5044	38.913	0.06042	150.770	23.9179	0.05288	0.009	150.126	0.844E-07	0.078
5037	41.318	0.10659	151.261	24.8576	0.05445	0.003	150.137	0.837E-07	0.026
5038	41.319	0.08975	151.081	24.8837	0.05428	0.004	150.139	0.827E-07	0.031
5039	41.319	0.07436	150.920	24.9070	0.05466	0.005	150.136	0.874E-07	0.044
5040	41.319	0.06042	150.779	24.9271	0.05431	0.007	150.137	0.844E-07	0.055
5033	43.578	0.10660	151.228	25.7719	0.05591	0.003	150.133	0.830E-07	0.025
5034	43.578	0.08974	151.041	25.7991	0.05594	0.004	150.131	0.829E-07	0.033
5035	43.579	0.07436	150.871	25.8240	0.05591	0.005	150.131	0.801E-07	0.044
5036	43.579	0.06043	150.732	25.8444	0.05581	0.007	150.133	0.799E-07	0.056
5029	46.198	0.11855	151.303	26.7717	0.05751	0.003	150.113	0.876E-07	0.023
5030	46.199	0.09514	151.066	26.8070	0.05740	0.004	150.111	0.863E-07	0.030
5031	46.199	0.07431	150.838	26.8405	0.05738	0.005	150.113	0.876E-07	0.045
5032	46.199	0.05608	150.652	26.8684	0.05748	0.008	150.112	0.921E-07	0.068
5025	49.048	0.11855	151.270	27.8260	0.05920	0.003	150.114	0.862E-07	0.023
5026	49.049	0.09514	151.038	27.8612	0.05916	0.004	150.115	0.846E-07	0.033
5027	49.051	0.07431	150.829	27.8932	0.05925	0.005	150.116	0.871E-07	0.045
5028	49.051	0.05607	150.636	27.9222	0.05909	0.008	150.117	0.892E-07	0.069
5021	51.868	0.11852	151.238	28.8219	0.06078	0.003	150.118	0.826E-07	0.024
5022	51.870	0.09512	151.014	28.8565	0.06081	0.004	150.115	0.855E-07	0.032
5023	51.871	0.07432	150.805	28.8885	0.06084	0.005	150.115	0.871E-07	0.046
5024	51.871	0.05608	150.603	28.9191	0.06031	0.008	150.117	0.788E-07	0.069
5017	55.109	0.11852	151.216	29.9099	0.06276	0.003	150.113	0.941E-07	0.022
5018	55.110	0.09512	150.986	29.9454	0.06264	0.003	150.113	0.890E-07	0.028
5019	55.112	0.07431	150.778	29.9779	0.06272	0.005	150.111	0.959E-07	0.041
5020	55.114	0.05608	150.637	30.0000	0.06274	0.008	150.110	0.102E-06	0.065
5013	58.085	0.13119	151.287	30.8481	0.06458	0.002	150.107	0.906E-07	0.019

Table 1. The thermal conductivity and thermal diffusivity of pure neon. (continued)

Run point	P_{cell} MPa	Q $W \cdot m^{-1}$	T_{exp} K	ρ_{calc} $mol \cdot L^{-1}$	λ_{exp} $W \cdot m^{-1} \cdot K^{-1}$	STAT	T_{cell} K	a $m^2 \cdot s^{-1}$	DSTAT
5014	58.086	0.10648	151.066	30.8826	0.06432	0.003	150.109	0.892E-07	0.025
5015	58.087	0.08438	150.874	30.9123	0.06444	0.004	150.109	0.932E-07	0.037
5016	58.088	0.06486	150.663	30.9450	0.06443	0.006	150.109	0.923E-07	0.052
5009	61.587	0.13117	151.244	31.9184	0.06652	0.002	150.112	0.854E-07	0.020
5010	61.589	0.10646	151.021	31.9533	0.06637	0.003	150.111	0.833E-07	0.026
5011	61.590	0.08437	150.836	31.9824	0.06645	0.004	150.110	0.865E-07	0.037
5012	61.591	0.06485	150.651	32.0112	0.06653	0.006	150.110	0.890E-07	0.054
5005	64.755	0.13114	151.210	32.8403	0.06847	0.002	150.112	0.841E-07	0.019
5006	64.757	0.10646	150.995	32.8739	0.06814	0.003	150.113	0.819E-07	0.028
5007	64.758	0.08436	150.818	32.9018	0.06835	0.004	150.112	0.829E-07	0.038
5008	64.758	0.06485	150.627	32.9314	0.06816	0.007	150.111	0.848E-07	0.057
5001	68.624	0.14441	151.271	33.8964	0.07063	0.002	150.107	0.795E-07	0.017
5002	68.622	0.11844	151.055	33.9293	0.07058	0.003	150.108	0.774E-07	0.022
5003	68.621	0.09506	150.872	33.9576	0.07022	0.004	150.106	0.740E-07	0.032
5004	68.620	0.07427	150.701	33.9840	0.07082	0.005	150.106	0.769E-07	0.046
Nominal temperature = 201 K									
3121	0.837	0.13236	203.007	0.4941	0.03712	0.002	199.876	0.365E-05	0.026
3122	0.837	0.11029	202.490	0.4953	0.03704	0.003	199.876	0.366E-05	0.034
3123	0.837	0.09025	202.011	0.4965	0.03688	0.004	199.876	0.349E-05	0.046
3124	0.837	0.07224	201.589	0.4975	0.03697	0.005	199.873	0.370E-05	0.063
3117	1.795	0.13234	202.884	1.0540	0.03754	0.002	199.868	0.157E-05	0.022
3118	1.795	0.11028	202.388	1.0566	0.03743	0.002	199.873	0.153E-05	0.028
3119	1.795	0.09024	201.932	1.0590	0.03728	0.003	199.870	0.150E-05	0.037
3120	1.795	0.07223	201.514	1.0612	0.03728	0.005	199.869	0.148E-05	0.051
3113	2.540	0.13227	202.742	1.4869	0.03797	0.002	199.860	0.111E-05	0.022
3114	2.540	0.11023	202.264	1.4904	0.03787	0.003	199.860	0.108E-05	0.028
3115	2.540	0.09021	201.823	1.4937	0.03781	0.003	199.856	0.108E-05	0.037
3116	2.540	0.07222	201.436	1.4965	0.03776	0.005	199.859	0.106E-05	0.051
3109	3.514	0.13226	202.546	2.0486	0.03857	0.001	199.877	0.876E-06	0.013
3110	3.514	0.11020	202.103	2.0531	0.03851	0.002	199.877	0.870E-06	0.022
3111	3.514	0.09019	201.701	2.0572	0.03845	0.003	199.880	0.863E-06	0.030
3112	3.514	0.07219	201.335	2.0609	0.03836	0.004	199.877	0.860E-06	0.041
3105	4.402	0.13211	202.471	2.5554	0.03895	0.002	199.884	0.720E-06	0.017
3106	4.402	0.11010	202.034	2.5609	0.03890	0.002	199.881	0.707E-06	0.022
3107	4.402	0.09010	201.642	2.5659	0.03882	0.003	199.881	0.686E-06	0.030
3108	4.402	0.07217	201.292	2.5704	0.03870	0.004	199.879	0.680E-06	0.040
3101	5.188	0.13210	202.400	2.9998	0.03928	0.002	199.879	0.610E-06	0.017
3102	5.188	0.11010	201.982	3.0060	0.03922	0.002	199.881	0.603E-06	0.021
3103	5.188	0.09009	201.599	3.0117	0.03918	0.003	199.880	0.598E-06	0.029
3104	5.188	0.07212	201.256	3.0169	0.03904	0.004	199.880	0.590E-06	0.040
3097	6.112	0.13209	202.341	3.5174	0.03967	0.002	199.883	0.528E-06	0.017
3098	6.112	0.11009	201.935	3.5245	0.03958	0.002	199.885	0.524E-06	0.022
3099	6.112	0.09008	201.555	3.5311	0.03955	0.003	199.884	0.503E-06	0.029
3100	6.112	0.07211	201.224	3.5369	0.03943	0.004	199.881	0.503E-06	0.040

Table 1. The thermal conductivity and thermal diffusivity of pure neon. (continued)

Run point	P_{cell} MPa	Q $W \cdot m^{-1}$	T_{exp} K	ρ_{calc} $mol \cdot L^{-1}$	λ_{exp} $W \cdot m^{-1} \cdot K^{-1}$	STAT	T_{cell} K	a $m^2 \cdot s^{-1}$	DSTAT
3093	7.765	0.13206	202.263	4.4295	0.04037	0.002	199.878	0.472E-06	0.017
3094	7.765	0.11006	201.868	4.4381	0.04027	0.002	199.877	0.472E-06	0.022
3095	7.765	0.09008	201.505	4.4461	0.04029	0.003	199.875	0.474E-06	0.030
3096	7.765	0.07210	201.186	4.4532	0.04012	0.004	199.873	0.479E-06	0.040
3089	9.896	0.13208	202.108	5.5826	0.04126	0.002	199.878	0.375E-06	0.024
3090	9.896	0.11006	201.747	5.5925	0.04114	0.003	199.883	0.375E-06	0.030
3091	9.896	0.09008	201.403	5.6021	0.04116	0.004	199.878	0.377E-06	0.041
3092	9.896	0.07211	201.095	5.6106	0.04110	0.006	199.879	0.388E-06	0.059
3085	11.950	0.13207	202.019	6.6652	0.04212	0.002	199.880	0.315E-06	0.024
3086	11.950	0.11007	201.673	6.6766	0.04204	0.003	199.884	0.318E-06	0.031
3087	11.950	0.09009	201.336	6.6877	0.04193	0.004	199.875	0.312E-06	0.042
3088	11.950	0.07212	201.052	6.6971	0.04199	0.006	199.878	0.334E-06	0.059
3081	13.746	0.13205	201.948	7.5901	0.04284	0.002	199.878	0.275E-06	0.024
3082	13.746	0.11008	201.610	7.6027	0.04281	0.003	199.882	0.280E-06	0.031
3083	13.746	0.09008	201.295	7.6145	0.04277	0.004	199.881	0.277E-06	0.041
3084	13.747	0.07213	201.007	7.6256	0.04271	0.006	199.875	0.279E-06	0.061
3077	15.941	0.13137	201.868	8.6927	0.04377	0.003	199.878	0.247E-06	0.025
3078	15.941	0.10948	201.543	8.7065	0.04368	0.003	199.881	0.246E-06	0.034
3079	15.941	0.08960	201.235	8.7196	0.04368	0.004	199.878	0.251E-06	0.042
3080	15.941	0.07173	200.971	8.7308	0.04366	0.006	199.879	0.257E-06	0.061
3073	17.944	0.13140	201.804	9.6720	0.04464	0.003	199.881	0.219E-06	0.025
3074	17.944	0.10951	201.483	9.6871	0.04460	0.004	199.875	0.223E-06	0.035
3075	17.944	0.08963	201.192	9.7007	0.04449	0.005	199.878	0.222E-06	0.044
3076	17.944	0.07175	200.923	9.7134	0.04461	0.007	199.874	0.232E-06	0.063
3069	19.982	0.13148	201.742	10.6432	0.04552	0.003	199.879	0.197E-06	0.025
3070	19.982	0.10958	201.430	10.6591	0.04546	0.004	199.876	0.199E-06	0.033
3071	19.982	0.08970	201.148	10.6736	0.04539	0.005	199.877	0.198E-06	0.043
3072	19.982	0.07174	200.889	10.6869	0.04536	0.006	199.879	0.202E-06	0.060
3065	22.274	0.13151	201.691	11.7048	0.04652	0.003	199.881	0.184E-06	0.026
3066	22.274	0.10962	201.385	11.7218	0.04647	0.004	199.879	0.182E-06	0.034
3067	22.274	0.08971	201.118	11.7367	0.04634	0.005	199.882	0.180E-06	0.046
3068	22.274	0.07182	200.853	11.7515	0.04640	0.007	199.877	0.184E-06	0.062
3061	24.620	0.13162	201.635	12.7585	0.04749	0.002	199.886	0.167E-06	0.019
3062	24.620	0.10961	201.344	12.7760	0.04750	0.003	199.884	0.171E-06	0.024
3063	24.620	0.08972	201.065	12.7928	0.04736	0.004	199.878	0.167E-06	0.033
3064	24.620	0.07180	200.825	12.8074	0.04753	0.005	199.881	0.176E-06	0.047
3057	26.960	0.14736	201.804	13.7639	0.04860	0.002	199.884	0.169E-06	0.016
3058	26.959	0.12411	201.504	13.7828	0.04857	0.002	199.884	0.171E-06	0.022
3059	26.959	0.10287	201.226	13.8006	0.04853	0.003	199.883	0.177E-06	0.027
3060	26.959	0.08361	200.984	13.8162	0.04846	0.004	199.883	0.181E-06	0.040
3053	29.418	0.14735	201.759	14.7999	0.04971	0.002	199.894	0.160E-06	0.016
3054	29.418	0.12411	201.461	14.8202	0.04966	0.002	199.887	0.162E-06	0.021
3055	29.417	0.10287	201.192	14.8383	0.04961	0.003	199.885	0.166E-06	0.028
3056	29.417	0.08361	200.941	14.8554	0.04960	0.004	199.887	0.171E-06	0.037

Table 1. The thermal conductivity and thermal diffusivity of pure neon. (continued)

Run point	P_{cell} MPa	Q W·m^{-1}	T_{exp} K	ρ_{calc} mol·L^{-1}	λ_{exp} W·m^{-1}·K^{-1}	STAT	T_{cell} K	a m^2·s^{-1}	DSTAT
3049	31.936	0.14741	201.697	15.8285	0.05100	0.002	199.886	0.157E-06	0.017
3050	31.936	0.12415	201.413	15.8489	0.05075	0.002	199.887	0.153E-06	0.022
3051	31.936	0.10289	201.149	15.8679	0.05073	0.003	199.886	0.155E-06	0.028
3052	31.936	0.08363	200.920	15.8847	0.05072	0.004	199.887	0.159E-06	0.040
3045	34.631	0.14741	201.640	16.8923	0.05199	0.002	199.887	0.140E-06	0.017
3046	34.631	0.12413	201.371	16.9127	0.05199	0.002	199.892	0.143E-06	0.021
3047	34.633	0.10289	201.110	16.9330	0.05192	0.003	199.883	0.144E-06	0.028
3048	34.633	0.08363	200.878	16.9506	0.05195	0.004	199.885	0.151E-06	0.038
3041	37.123	0.16405	201.784	17.8281	0.05316	0.002	199.886	0.134E-06	0.015
3042	37.125	0.13948	201.494	17.8514	0.05307	0.002	199.881	0.132E-06	0.018
3043	37.125	0.11687	201.230	17.8722	0.05308	0.003	199.878	0.132E-06	0.023
3044	37.126	0.09627	200.985	17.8921	0.05297	0.003	199.879	0.133E-06	0.031
3037	39.998	0.16358	201.730	18.8868	0.05439	0.001	199.892	0.127E-06	0.013
3038	39.998	0.13913	201.451	18.9096	0.05440	0.002	199.891	0.127E-06	0.016
3039	39.998	0.11659	201.198	18.9304	0.05434	0.002	199.886	0.128E-06	0.021
3040	39.998	0.09605	200.966	18.9495	0.05439	0.003	199.885	0.134E-06	0.028
3033	42.835	0.16366	201.663	19.8956	0.05588	0.002	199.889	0.120E-06	0.014
3034	42.835	0.13897	201.400	19.9179	0.05574	0.002	199.886	0.122E-06	0.017
3035	42.835	0.11647	201.155	19.9388	0.05559	0.003	199.886	0.122E-06	0.023
3029	45.715	0.16381	201.616	20.8822	0.05695	0.002	199.884	0.114E-06	0.014
3030	45.715	0.13924	201.348	20.9057	0.05696	0.002	199.883	0.112E-06	0.018
3031	45.715	0.11672	201.109	20.9267	0.05700	0.003	199.881	0.115E-06	0.023
3032	45.714	0.09615	200.876	20.9467	0.05694	0.003	199.874	0.111E-06	0.030
3025	48.900	0.18079	201.717	21.9188	0.05871	0.001	199.875	0.109E-06	0.013
3026	48.899	0.15494	201.452	21.9426	0.05857	0.002	199.879	0.106E-06	0.016
3027	48.899	0.13113	201.211	21.9641	0.05857	0.002	199.875	0.109E-06	0.019
3028	48.899	0.10930	200.974	21.9856	0.05849	0.003	199.875	0.104E-06	0.026
3021	52.241	0.18078	201.699	22.9737	0.06019	0.002	199.882	0.118E-06	0.013
3022	52.238	0.15498	201.434	22.9976	0.06004	0.002	199.874	0.120E-06	0.017
3023	52.238	0.13118	201.203	23.0191	0.05985	0.002	199.877	0.123E-06	0.021
3024	52.238	0.10935	200.978	23.0400	0.05971	0.003	199.876	0.122E-06	0.026
3017	55.425	0.18085	201.654	23.9430	0.06139	0.001	199.879	0.114E-06	0.013
3018	55.423	0.15500	201.398	23.9665	0.06126	0.002	199.877	0.113E-06	0.017
3019	55.423	0.13118	201.168	23.9885	0.06132	0.002	199.878	0.116E-06	0.020
3020	55.423	0.10934	200.949	24.0093	0.06123	0.003	199.877	0.117E-06	0.029
3013	58.900	0.18075	201.580	24.9624	0.06294	0.002	199.866	0.107E-06	0.014
3014	58.897	0.15492	201.338	24.9851	0.06279	0.002	199.869	0.106E-06	0.017
3015	58.898	0.13116	201.113	25.0071	0.06283	0.003	199.867	0.107E-06	0.022
3016	58.898	0.10937	200.897	25.0281	0.06284	0.003	199.862	0.110E-06	0.028
3009	62.358	0.19913	201.723	25.9159	0.06446	0.001	199.888	0.104E-06	0.012
3010	62.356	0.17194	201.470	25.9401	0.06431	0.002	199.885	0.103E-06	0.014
3011	62.354	0.14681	201.236	25.9629	0.06441	0.002	199.884	0.104E-06	0.018
3012	62.356	0.12363	201.027	25.9839	0.06433	0.003	199.886	0.106E-06	0.023
3005	66.079	0.19698	201.638	26.9234	0.06575	0.002	199.864	0.101E-06	0.014

Table 1. The thermal conductivity and thermal diffusivity of pure neon. (continued)

Run point	P_{cell} MPa	Q $W \cdot m^{-1}$	T_{exp} K	ρ_{calc} $mol \cdot L^{-1}$	λ_{exp} $W \cdot m^{-1} \cdot K^{-1}$	STAT	T_{cell} K	a $m^2 \cdot s^{-1}$	DSTAT
3006	66.078	0.17062	201.399	26.9472	0.06568	0.002	199.872	0.973E-07	0.017
3007	66.077	0.14592	201.181	26.9689	0.06570	0.002	199.871	0.990E-07	0.021
3008	66.077	0.12312	200.969	26.9902	0.06576	0.003	199.874	0.974E-07	0.027
3001	68.873	0.19861	201.627	27.6481	0.06730	0.002	199.885	0.100E-06	0.014
3002	68.871	0.17089	201.382	27.6726	0.06704	0.002	199.876	0.985E-07	0.017
3003	68.871	0.14578	201.149	27.6960	0.06702	0.002	199.873	0.982E-07	0.020
3004	68.870	0.12273	200.951	27.7160	0.06677	0.003	199.870	0.968E-07	0.028
Nominal temperature = 252 K									
4097	1.605	0.15865	253.002	0.7569	0.04374	0.001	249.839	0.262E-05	0.015
4098	1.605	0.13153	252.466	0.7585	0.04373	0.002	249.841	0.265E-05	0.019
4099	1.605	0.10695	251.976	0.7600	0.04373	0.002	249.840	0.268E-05	0.027
4100	1.605	0.08492	251.541	0.7613	0.04375	0.003	249.839	0.283E-05	0.038
4093	2.665	0.15865	252.895	1.2504	0.04408	0.002	249.840	0.154E-05	0.019
4094	2.665	0.13154	252.375	1.2530	0.04415	0.002	249.840	0.159E-05	0.023
4095	2.665	0.10695	251.899	1.2553	0.04414	0.003	249.837	0.160E-05	0.031
4096	2.665	0.08492	251.477	1.2574	0.04411	0.004	249.839	0.162E-05	0.045
4089	3.744	0.15865	252.757	1.7480	0.04462	0.002	249.830	0.112E-05	0.018
4090	3.744	0.13154	252.262	1.7514	0.04463	0.002	249.834	0.114E-05	0.024
4091	3.744	0.10695	251.813	1.7545	0.04465	0.003	249.834	0.117E-05	0.033
4092	3.744	0.08493	251.410	1.7573	0.04460	0.004	249.834	0.118E-05	0.044
4085	4.786	0.15863	252.654	2.2234	0.04503	0.002	249.824	0.870E-06	0.018
4086	4.786	0.13151	252.173	2.2276	0.04512	0.002	249.825	0.894E-06	0.023
4087	4.786	0.10695	251.735	2.2315	0.04510	0.003	249.825	0.893E-06	0.031
4088	4.786	0.08492	251.339	2.2350	0.04489	0.004	249.823	0.858E-06	0.041
4081	5.869	0.18824	253.111	2.7068	0.04551	0.001	249.842	0.736E-06	0.013
4082	5.869	0.15861	252.591	2.7123	0.04555	0.002	249.838	0.743E-06	0.017
4083	5.869	0.13149	252.121	2.7173	0.04559	0.002	249.840	0.751E-06	0.023
4084	5.869	0.10693	251.691	2.7219	0.04552	0.003	249.835	0.750E-06	0.030
4077	6.885	0.18819	253.044	3.1594	0.04586	0.001	249.849	0.637E-06	0.013
4078	6.885	0.15853	252.540	3.1656	0.04590	0.002	249.847	0.647E-06	0.016
4079	6.885	0.13150	252.086	3.1712	0.04600	0.002	249.848	0.669E-06	0.021
4080	6.885	0.10693	251.663	3.1765	0.04593	0.003	249.847	0.663E-06	0.031
4073	9.496	0.18824	252.915	4.3018	0.04683	0.001	249.865	0.494E-06	0.013
4074	9.496	0.15860	252.439	4.3097	0.04683	0.002	249.867	0.500E-06	0.017
4075	9.497	0.13149	251.997	4.3174	0.04696	0.002	249.866	0.517E-06	0.022
4076	9.497	0.10689	251.601	4.3241	0.04679	0.003	249.866	0.502E-06	0.030
4069	11.901	0.18813	252.778	5.3277	0.04764	0.001	249.843	0.420E-06	0.009
4070	11.900	0.15850	252.320	5.3368	0.04767	0.001	249.841	0.420E-06	0.015
4071	11.899	0.13141	251.893	5.3453	0.04764	0.002	249.839	0.423E-06	0.020
4072	11.899	0.10685	251.516	5.3528	0.04769	0.002	249.840	0.439E-06	0.025
4065	14.180	0.18813	252.681	6.2762	0.04844	0.001	249.846	0.357E-06	0.009
4066	14.180	0.15850	252.236	6.2866	0.04849	0.001	249.847	0.362E-06	0.010
4067	14.180	0.13141	251.827	6.2964	0.04847	0.001	249.843	0.367E-06	0.015
4068	14.179	0.10684	251.457	6.3051	0.04845	0.002	249.842	0.369E-06	0.019

Table 1. The thermal conductivity and thermal diffusivity of pure neon. (continued)

Run point	P_{cell} MPa	Q $W \cdot m^{-1}$	T_{exp} K	ρ_{calc} $mol \cdot L^{-1}$	λ_{exp} $W \cdot m^{-1} \cdot K^{-1}$	STAT	T_{cell} K	a $m^2 \cdot s^{-1}$	DSTAT
4061	16.756	0.20929	252.894	7.3122	0.04933	0.001	249.847	0.308E-06	0.007
4062	16.756	0.17795	252.442	7.3244	0.04933	0.001	249.850	0.309E-06	0.009
4063	16.755	0.14917	252.017	7.3360	0.04941	0.001	249.846	0.313E-06	0.012
4064	16.755	0.12291	251.639	7.3466	0.04935	0.002	249.847	0.314E-06	0.015
4057	19.467	0.20924	252.796	8.3798	0.05025	0.001	249.851	0.268E-06	0.008
4058	19.466	0.17795	252.359	8.3933	0.05026	0.001	249.854	0.269E-06	0.010
4059	19.465	0.14917	251.962	8.4056	0.05036	0.001	249.857	0.281E-06	0.012
4060	19.465	0.12290	251.590	8.4171	0.05031	0.002	249.855	0.279E-06	0.015
4053	22.089	0.23155	253.011	9.3730	0.05132	0.001	249.849	0.247E-06	0.009
4054	22.089	0.18810	252.418	9.3937	0.05130	0.001	249.849	0.246E-06	0.012
4055	22.089	0.14916	251.883	9.4124	0.05127	0.002	249.847	0.245E-06	0.016
4056	22.088	0.11474	251.416	9.4286	0.05123	0.003	249.851	0.243E-06	0.025
4049	24.614	0.23155	252.920	10.3131	0.05223	0.001	249.835	0.232E-06	0.009
4050	24.614	0.18809	252.346	10.3349	0.05219	0.001	249.836	0.234E-06	0.012
4051	24.613	0.14916	251.825	10.3545	0.05214	0.002	249.833	0.235E-06	0.017
4052	24.613	0.11473	251.366	10.3722	0.05217	0.003	249.833	0.237E-06	0.025
4045	27.445	0.23157	252.833	11.3372	0.05325	0.001	249.852	0.204E-06	0.009
4046	27.445	0.18811	252.269	11.3605	0.05321	0.001	249.849	0.201E-06	0.012
4047	27.446	0.14917	251.764	11.3817	0.05318	0.002	249.848	0.198E-06	0.017
4048	27.446	0.11474	251.320	11.4003	0.05315	0.003	249.847	0.197E-06	0.025
4041	30.494	0.23155	252.786	12.4044	0.05433	0.001	249.865	0.203E-06	0.009
4042	30.494	0.18810	252.234	12.4290	0.05428	0.001	249.857	0.205E-06	0.012
4043	30.495	0.14916	251.746	12.4512	0.05425	0.002	249.856	0.210E-06	0.017
4044	30.495	0.11474	251.319	12.4704	0.05427	0.003	249.862	0.215E-06	0.026
4037	33.644	0.23161	252.697	13.4733	0.05543	0.001	249.861	0.187E-06	0.009
4038	33.644	0.18814	252.164	13.4990	0.05543	0.001	249.858	0.189E-06	0.012
4039	33.644	0.14919	251.688	13.5219	0.05540	0.001	249.857	0.191E-06	0.013
4040	33.644	0.11474	251.265	13.5424	0.05536	0.002	249.857	0.190E-06	0.020
4033	36.233	0.25509	252.899	14.3124	0.05644	0.001	249.852	0.176E-06	0.008
4034	36.234	0.20935	252.353	14.3400	0.05642	0.001	249.850	0.178E-06	0.011
4035	36.235	0.16814	251.860	14.3654	0.05647	0.002	249.846	0.182E-06	0.015
4036	36.236	0.13145	251.424	14.3877	0.05640	0.002	249.849	0.180E-06	0.021
4029	39.795	0.25494	252.799	15.4483	0.05770	0.001	249.843	0.166E-06	0.006
4030	39.794	0.20924	252.272	15.4762	0.05766	0.001	249.846	0.165E-06	0.008
4031	39.793	0.16806	251.794	15.5014	0.05778	0.001	249.842	0.171E-06	0.012
4032	39.792	0.13140	251.365	15.5243	0.05769	0.002	249.840	0.167E-06	0.021
4025	43.143	0.25496	252.706	16.4793	0.05888	0.001	249.839	0.152E-06	0.008
4026	43.142	0.20924	252.189	16.5079	0.05885	0.001	249.836	0.152E-06	0.011
4027	43.142	0.16808	251.724	16.5341	0.05886	0.001	249.833	0.153E-06	0.012
4028	43.141	0.13139	251.308	16.5575	0.05886	0.002	249.834	0.150E-06	0.021
4021	46.444	0.25497	252.656	17.4602	0.06012	0.001	249.837	0.157E-06	0.009
4022	46.444	0.20925	252.155	17.4894	0.06004	0.001	249.837	0.158E-06	0.011
4023	46.444	0.16806	251.697	17.5163	0.06008	0.002	249.835	0.159E-06	0.015
4024	46.444	0.13138	251.295	17.5401	0.06013	0.002	249.833	0.166E-06	0.022

Table 1. The thermal conductivity and thermal diffusivity of pure neon. (continued)

Run point	P_{cell} MPa	Q W·m^{-1}	T_{exp} K	ρ_{calc} mol·L^{-1}	λ_{exp} W·m^{-1}·K^{-1}	STAT	T_{cell} K	a m^2·s^{-1}	DSTAT
4018	50.179	0.29221	252.977	18.5086	0.06149	0.001	249.842	0.147E-06	0.007
4018	50.179	0.23158	252.338	18.5476	0.06148	0.001	249.848	0.150E-06	0.010
4019	50.178	0.17796	251.758	18.5827	0.06149	0.002	249.844	0.152E-06	0.014
4020	50.178	0.13140	251.260	18.6134	0.06146	0.002	249.842	0.156E-06	0.022
4013	53.676	0.29219	252.909	19.4771	0.06276	0.001	249.851	0.142E-06	0.007
4014	53.676	0.23155	252.277	19.5171	0.06281	0.001	249.852	0.144E-06	0.010
4015	53.676	0.17796	251.716	19.5527	0.06277	0.002	249.847	0.146E-06	0.015
4016	53.676	0.13140	251.228	19.5837	0.06269	0.002	249.849	0.145E-06	0.020
4009	57.410	0.29224	252.829	20.4762	0.06410	0.001	249.850	0.136E-06	0.006
4010	57.409	0.23158	252.206	20.5167	0.06415	0.001	249.844	0.138E-06	0.010
4011	57.409	0.17798	251.660	20.5526	0.06415	0.001	249.845	0.138E-06	0.013
4012	57.409	0.13141	251.184	20.5840	0.06413	0.002	249.844	0.139E-06	0.021
4005	61.329	0.29227	252.724	21.4895	0.06557	0.001	249.831	0.128E-06	0.006
4006	61.329	0.23159	252.119	21.5303	0.06561	0.001	249.832	0.127E-06	0.008
4007	61.329	0.17798	251.590	21.5662	0.06546	0.001	249.832	0.125E-06	0.011
4008	61.329	0.13142	251.121	21.5980	0.06542	0.002	249.829	0.122E-06	0.017
4001	66.574	0.29230	252.620	22.7870	0.06747	0.001	249.831	0.121E-06	0.006
4002	66.574	0.23162	252.031	22.8280	0.06753	0.001	249.827	0.119E-06	0.008
4003	66.574	0.17801	251.513	22.8644	0.06734	0.001	249.826	0.113E-06	0.012
4004	66.574	0.13143	251.066	22.8958	0.06728	0.002	249.825	0.109E-06	0.018
Nominal temperature = 299 K									
1057	1.409	0.21203	300.170	0.5607	0.04913	0.002	296.329	0.392E-05	0.027
1058	1.409	0.17778	299.559	0.5618	0.04903	0.003	296.337	0.384E-05	0.036
1059	1.409	0.14657	298.982	0.5629	0.04919	0.004	296.332	0.404E-05	0.049
1060	1.409	0.11833	298.432	0.5639	0.04908	0.006	296.328	0.396E-05	0.070
1053	2.265	0.22407	300.349	0.8974	0.04937	0.001	296.337	0.238E-05	0.013
1054	2.265	0.18853	299.712	0.8993	0.04930	0.001	296.337	0.235E-05	0.016
1055	2.265	0.15659	299.145	0.9010	0.04915	0.002	296.334	0.236E-05	0.021
1056	2.265	0.12742	298.625	0.9026	0.04914	0.002	296.337	0.234E-05	0.028
1049	3.335	0.22398	300.162	1.3154	0.04956	0.001	296.344	0.145E-05	0.013
1050	3.335	0.18887	299.553	1.3181	0.04965	0.001	296.342	0.145E-05	0.015
1051	3.335	0.15672	299.016	1.3204	0.04957	0.002	296.348	0.144E-05	0.019
1052	3.335	0.12747	298.509	1.3226	0.04968	0.002	296.347	0.145E-05	0.027
1045	4.475	0.22449	300.052	1.7562	0.05008	0.001	296.350	0.115E-05	0.012
1046	4.475	0.18919	299.465	1.7596	0.05001	0.001	296.351	0.111E-05	0.016
1047	4.475	0.15673	298.932	1.7627	0.04993	0.002	296.352	0.109E-05	0.021
1048	4.475	0.12743	298.442	1.7655	0.04998	0.002	296.346	0.110E-05	0.026
1041	5.904	0.24995	300.347	2.2994	0.05086	0.001	296.361	0.949E-06	0.010
1042	5.904	0.21221	299.754	2.3039	0.05057	0.001	296.361	0.921E-06	0.012
1043	5.904	0.17784	299.208	2.3080	0.05022	0.002	296.368	0.857E-06	0.017
1044	5.904	0.14669	298.697	2.3119	0.05023	0.002	296.358	0.849E-06	0.021
1037	7.008	0.25013	300.173	2.7171	0.05111	0.001	296.267	0.810E-06	0.010
1038	7.008	0.21272	299.594	2.7223	0.05101	0.001	296.272	0.796E-06	0.012
1039	7.008	0.17831	299.051	2.7271	0.05083	0.001	296.270	0.762E-06	0.015

Table 1. The thermal conductivity and thermal diffusivity of pure neon. (continued)

Run point	P_{cell} MPa	Q W·m^{-1}	T_{exp} K	ρ_{calc} mol·L^{-1}	λ_{exp} W·m^{-1}·K^{-1}	STAT	T_{cell} K	a m^2·s^{-1}	DSTAT
1040	7.008	0.14701	298.567	2.7315	0.05093	0.002	296.272	0.784E-06	0.020
1033	8.492	0.24998	300.077	3.2705	0.05111	0.001	296.261	0.646E-06	0.013
1034	8.492	0.21272	299.510	3.2765	0.05123	0.001	296.259	0.667E-06	0.014
1035	8.492	0.17840	298.989	3.2821	0.05139	0.002	296.262	0.696E-06	0.016
1036	8.492	0.14710	298.508	3.2873	0.05139	0.002	296.257	0.699E-06	0.022
1029	11.564	0.27664	300.292	4.3875	0.05249	0.001	296.261	0.532E-06	0.009
1030	11.564	0.23728	299.720	4.3956	0.05244	0.001	296.261	0.529E-06	0.010
1031	11.564	0.20087	299.194	4.4030	0.05209	0.001	296.264	0.503E-06	0.014
1032	11.564	0.16757	298.709	4.4100	0.05228	0.002	296.262	0.523E-06	0.017
1025	13.987	0.27646	300.147	5.2499	0.05312	0.001	296.249	0.436E-06	0.009
1026	13.987	0.23718	299.594	5.2592	0.05299	0.001	296.247	0.430E-06	0.011
1027	13.987	0.20100	299.082	5.2678	0.05291	0.001	296.253	0.415E-06	0.013
1028	13.987	0.16764	298.614	5.2758	0.05298	0.002	296.255	0.419E-06	0.017
1021	16.612	0.27683	300.027	6.1622	0.05396	0.001	296.245	0.376E-06	0.009
1022	16.612	0.23738	299.482	6.1728	0.05364	0.001	296.244	0.351E-06	0.010
1023	16.612	0.20097	298.984	6.1826	0.05351	0.001	296.247	0.340E-06	0.013
1024	16.612	0.16761	298.525	6.1917	0.05394	0.002	296.247	0.359E-06	0.017
1017	20.213	0.30480	300.276	7.3692	0.05499	0.001	296.239	0.336E-06	0.008
1018	20.213	0.26336	299.726	7.3819	0.05493	0.001	296.240	0.331E-06	0.008
1019	20.213	0.22511	299.221	7.3936	0.05475	0.001	296.240	0.323E-06	0.012
1020	20.213	0.18967	298.750	7.4045	0.05468	0.002	296.240	0.316E-06	0.015
1013	23.345	0.30484	300.149	8.3936	0.05599	0.001	296.233	0.301E-06	0.008
1014	23.345	0.26343	299.610	8.4076	0.05597	0.001	296.227	0.298E-06	0.010
1015	23.345	0.22499	299.114	8.4205	0.05551	0.001	296.221	0.281E-06	0.011
1016	23.345	0.18974	298.671	8.4322	0.05560	0.001	296.225	0.290E-06	0.015
1009	26.509	0.30488	300.026	9.3991	0.05687	0.001	296.227	0.263E-06	0.007
1010	26.509	0.26353	299.518	9.4138	0.05684	0.001	296.230	0.265E-06	0.009
1011	26.509	0.22512	299.046	9.4274	0.05672	0.001	296.239	0.258E-06	0.011
1012	26.509	0.18978	298.596	9.4405	0.05700	0.001	296.231	0.269E-06	0.014
1005	30.179	0.33426	300.266	10.5179	0.05826	0.001	296.230	0.246E-06	0.006
1006	30.180	0.29087	299.741	10.5348	0.05821	0.001	296.231	0.243E-06	0.007
1007	30.180	0.25039	299.258	10.5502	0.05804	0.001	296.235	0.238E-06	0.009
1008	30.181	0.21300	298.808	10.5648	0.05812	0.001	296.235	0.243E-06	0.011
1001	32.989	0.33457	300.151	11.3580	0.05914	0.001	296.223	0.219E-06	0.005
1002	32.989	0.29110	299.636	11.3757	0.05888	0.001	296.220	0.211E-06	0.007
1003	32.989	0.25063	299.160	11.3919	0.05889	0.001	296.223	0.208E-06	0.008
1004	32.990	0.21317	298.719	11.4072	0.05886	0.001	296.224	0.206E-06	0.010
6093	1.128	0.15919	303.013	0.4454	0.04950	0.002	300.207	0.492E-05	0.030
6094	1.128	0.12947	302.475	0.4462	0.04944	0.003	300.203	0.496E-05	0.041
6095	1.128	0.10282	302.011	0.4469	0.04955	0.004	300.202	0.519E-05	0.055
6096	1.128	0.07923	301.566	0.4476	0.04952	0.007	300.203	0.529E-05	0.085
6089	2.575	0.15920	302.774	1.0106	0.05033	0.003	300.204	0.226E-05	0.034
6090	2.575	0.12947	302.304	1.0121	0.05032	0.004	300.211	0.230E-05	0.045
6091	2.575	0.10284	301.838	1.0137	0.05027	0.005	300.207	0.234E-05	0.059

Table 1. The thermal conductivity and thermal diffusivity of pure neon. (continued)

Run point	P_{cell} MPa	Q W·m^{-1}	T_{exp} K	ρ_{calc} mol·L^{-1}	λ_{exp} W·m^{-1}·K^{-1}	STAT	T_{cell} K	a m^2·s^{-1}	DSTAT
6092	2.575	0.07924	301.500	1.0148	0.05027	0.008	300.208	0.240E-05	0.095
6085	4.007	0.15923	302.657	1.5628	0.05098	0.003	300.207	0.152E-05	0.034
6086	4.007	0.12950	302.199	1.5651	0.05098	0.004	300.208	0.155E-05	0.048
6087	4.007	0.10283	301.780	1.5673	0.05085	0.005	300.209	0.152E-05	0.062
6088	4.007	0.07924	301.372	1.5694	0.05100	0.008	300.209	0.163E-05	0.096
6081	5.449	0.15919	302.652	2.1110	0.05136	0.002	300.226	0.111E-05	0.020
6082	5.449	0.12947	302.195	2.1142	0.05131	0.002	300.225	0.112E-05	0.024
6083	5.449	0.10282	301.792	2.1170	0.05120	0.003	300.226	0.111E-05	0.033
6084	5.449	0.07922	301.428	2.1195	0.05142	0.005	300.226	0.116E-05	0.052
6073	6.620	0.19191	303.077	2.5469	0.05162	0.001	300.225	0.911E-06	0.016
6077	6.620	0.19192	303.053	2.5471	0.05152	0.003	300.220	0.837E-06	0.038
6074	6.620	0.15916	302.594	2.5509	0.05154	0.002	300.229	0.903E-06	0.020
6078	6.620	0.15917	302.564	2.5511	0.05143	0.005	300.219	0.810E-06	0.050
6075	6.620	0.12946	302.148	2.5546	0.05159	0.003	300.223	0.917E-06	0.028
6080	6.620	0.12944	302.118	2.5548	0.05127	0.006	300.219	0.762E-06	0.068
6076	6.620	0.10281	301.749	2.5579	0.05135	0.004	300.220	0.892E-06	0.039
6080	6.620	0.10282	301.721	2.5581	0.05115	0.009	300.218	0.715E-06	0.095
6069	8.092	0.19190	302.995	3.0929	0.05202	0.001	300.230	0.730E-06	0.016
6070	8.092	0.15915	302.518	3.0977	0.05215	0.002	300.231	0.739E-06	0.021
6071	8.092	0.12943	302.090	3.1020	0.05220	0.003	300.225	0.754E-06	0.028
6072	8.092	0.10279	301.703	3.1059	0.05203	0.004	300.229	0.717E-06	0.040
6065	9.548	0.19191	302.928	3.6257	0.05238	0.001	300.232	0.615E-06	0.016
6066	9.548	0.15917	302.457	3.6312	0.05257	0.002	300.231	0.617E-06	0.020
6067	9.548	0.12944	302.047	3.6360	0.05266	0.003	300.234	0.635E-06	0.027
6068	9.548	0.10279	301.658	3.6406	0.05251	0.004	300.230	0.608E-06	0.039
6061	10.965	0.19191	302.863	4.1374	0.05299	0.001	300.229	0.555E-06	0.015
6062	10.964	0.15916	302.415	4.1430	0.05301	0.002	300.234	0.553E-06	0.020
6063	10.964	0.12944	301.995	4.1486	0.05301	0.003	300.229	0.539E-06	0.029
6064	10.964	0.10279	301.625	4.1536	0.05303	0.004	300.230	0.539E-06	0.039
6057	13.792	0.19193	302.796	5.1377	0.05353	0.002	300.229	0.478E-06	0.016
6058	13.792	0.15917	302.356	5.1448	0.05379	0.002	300.229	0.499E-06	0.020
6059	13.792	0.12944	301.962	5.1513	0.05390	0.003	300.226	0.521E-06	0.029
6060	13.791	0.10279	301.597	5.1570	0.05379	0.004	300.226	0.522E-06	0.039
6053	16.789	0.22774	303.214	6.1607	0.05453	0.001	300.223	0.402E-06	0.010
6054	16.789	0.19194	302.744	6.1698	0.05448	0.001	300.225	0.397E-06	0.011
6055	16.789	0.15918	302.312	6.1782	0.05445	0.001	300.221	0.401E-06	0.014
6056	16.789	0.12944	301.924	6.1857	0.05457	0.002	300.222	0.412E-06	0.019
6049	19.864	0.22776	303.115	7.1897	0.05524	0.001	300.222	0.335E-06	0.009
6050	19.864	0.19194	302.660	7.1998	0.05526	0.001	300.223	0.335E-06	0.011
6051	19.864	0.15918	302.244	7.2092	0.05511	0.001	300.223	0.328E-06	0.014
6052	19.864	0.12945	301.864	7.2177	0.05528	0.002	300.224	0.333E-06	0.019
6045	22.962	0.22775	303.052	8.1966	0.05608	0.001	300.226	0.312E-06	0.009
6046	22.962	0.19194	302.613	8.2077	0.05616	0.001	300.225	0.323E-06	0.011
6047	22.962	0.15917	302.205	8.2180	0.05611	0.001	300.227	0.319E-06	0.014

Table 1. The thermal conductivity and thermal diffusivity of pure neon. (continued)

Run point	P_{cell} MPa	Q W·m^{-1}	T_{exp} K	ρ_{calc} mol·L^{-1}	λ_{exp} W·m^{-1}·K^{-1}	STAT	T_{cell} K	a m^2·s^{-1}	DSTAT
6048	22.962	0.12945	301.838	8.2273	0.05611	0.002	300.225	0.327E-06	0.019
6041	26.151	0.22778	303.027	9.2024	0.05720	0.001	300.220	0.280E-06	0.008
6042	26.151	0.19195	302.594	9.2146	0.05722	0.001	300.225	0.285E-06	0.011
6043	26.151	0.15918	302.189	9.2259	0.05687	0.001	300.224	0.270E-06	0.013
6044	26.151	0.12945	301.823	9.2362	0.05690	0.002	300.220	0.278E-06	0.017
6037	29.565	0.22782	302.961	10.2487	0.05793	0.001	300.228	0.246E-06	0.008
6037	29.565	0.19198	302.531	10.2619	0.05807	0.001	300.229	0.252E-06	0.010
6039	29.565	0.15921	302.136	10.2741	0.05814	0.001	300.225	0.256E-06	0.014
6040	29.565	0.12947	301.783	10.2850	0.05817	0.002	300.229	0.260E-06	0.018
6033	32.935	0.22785	302.876	11.2506	0.05940	0.001	300.232	0.230E-06	0.008
6034	32.935	0.19200	302.464	11.2643	0.05928	0.001	300.231	0.230E-06	0.011
6035	32.935	0.15922	302.073	11.2774	0.05931	0.001	300.229	0.223E-06	0.013
6036	32.935	0.12949	301.728	11.2890	0.05947	0.002	300.229	0.230E-06	0.018
6029	36.486	0.26649	303.258	12.2578	0.06056	0.001	300.235	0.223E-06	0.007
6030	36.486	0.22763	302.817	12.2736	0.06054	0.001	300.234	0.223E-06	0.008
6031	36.486	0.19184	302.406	12.2882	0.06054	0.001	300.230	0.222E-06	0.010
6032	36.485	0.15909	302.035	12.3013	0.06049	0.001	300.230	0.223E-06	0.013
6025	40.226	0.26650	303.172	13.3008	0.06176	0.001	300.237	0.205E-06	0.007
6026	40.226	0.22766	302.746	13.3171	0.06178	0.001	300.240	0.206E-06	0.008
6027	40.226	0.19184	302.352	13.3323	0.06183	0.001	300.239	0.207E-06	0.011
6028	40.226	0.15910	301.991	13.3462	0.06182	0.001	300.237	0.209E-06	0.014
6021	43.942	0.28003	303.257	14.2973	0.06285	0.001	300.234	0.200E-06	0.006
6022	43.942	0.22756	302.693	14.3201	0.06286	0.001	300.236	0.201E-06	0.008
6023	43.942	0.18050	302.192	14.3405	0.06284	0.001	300.239	0.205E-06	0.012
6024	43.943	0.13888	301.742	14.3592	0.06297	0.002	300.235	0.214E-06	0.017
6017	47.901	0.28003	303.177	15.3311	0.06388	0.001	300.237	0.182E-06	0.006
6018	47.901	0.22758	302.625	15.3548	0.06382	0.001	300.235	0.181E-06	0.008
6019	47.900	0.18051	302.133	15.3758	0.06392	0.001	300.236	0.185E-06	0.012
6020	47.899	0.13887	301.698	15.3942	0.06413	0.002	300.237	0.192E-06	0.018
6013	51.969	0.28012	303.091	16.3584	0.06525	0.001	300.238	0.168E-06	0.006
6014	51.969	0.22762	302.553	16.3827	0.06517	0.001	300.238	0.165E-06	0.008
6015	51.968	0.18055	302.069	16.4042	0.06523	0.001	300.234	0.165E-06	0.011
6016	51.969	0.13889	301.643	16.4237	0.06542	0.002	300.233	0.168E-06	0.016
6009	56.019	0.30834	303.308	17.3333	0.06653	0.001	300.249	0.159E-06	0.005
6010	56.019	0.25317	302.754	17.3592	0.06655	0.001	300.243	0.159E-06	0.007
6011	56.018	0.20340	302.256	17.3825	0.06647	0.001	300.242	0.156E-06	0.010
6012	56.018	0.15907	301.808	17.4037	0.06655	0.001	300.236	0.156E-06	0.013
6005	60.103	0.30817	303.232	18.2973	0.06777	0.001	300.234	0.157E-06	0.006
6006	60.103	0.25301	302.694	18.3236	0.06788	0.001	300.234	0.159E-06	0.008
6007	60.103	0.20326	302.210	18.3473	0.06792	0.001	300.229	0.163E-06	0.011
6008	60.102	0.15895	301.777	18.3682	0.06793	0.002	300.229	0.164E-06	0.016
6001	65.946	0.30818	303.149	19.6219	0.06956	0.001	300.249	0.149E-06	0.006
6002	65.946	0.25304	302.624	19.6489	0.06950	0.001	300.244	0.147E-06	0.008
6003	65.946	0.20329	302.158	19.6729	0.06964	0.001	300.245	0.150E-06	0.011

Table 1. The thermal conductivity and thermal diffusivity of pure neon. (continued)

Run point	P_{cell} MPa	Q $W \cdot m^{-1}$	T_{exp} K	ρ_{calc} $mol \cdot L^{-1}$	λ_{exp} $W \cdot m^{-1} \cdot K^{-1}$	STAT	T_{cell} K	a $m^2 \cdot s^{-1}$	DSTAT
6004	65.946	0.15896	301.730	19.6949	0.06986	0.002	300.239	0.151E-06	0.017

Table 2. Thermal conductivity and thermal diffusivity of the 75.007 % neon – 24.993 % nitrogen mixture.

Run point	P_{cell} MPa	Q W·m^{-1}	T_{exp} K	ρ_{calc} mol·L^{-1}	λ_{exp} W·m^{-1}·K^{-1}	STAT	T_{cell} K	a m^2·s^{-1}	DSTAT
Nominal temperature = 111 K									
11085	0.639	0.03836	111.567	0.6971	0.01941	0.002	109.932	0.158E-05	0.022
11086	0.639	0.03275	111.332	0.6986	0.01934	0.002	109.929	0.161E-05	0.029
11087	0.639	0.02758	111.114	0.7001	0.01934	0.003	109.929	0.166E-05	0.037
11088	0.639	0.02287	110.921	0.7013	0.01933	0.004	109.932	0.175E-05	0.049
11081	1.092	0.03832	111.429	1.2026	0.01992	0.002	109.927	0.882E-06	0.022
11082	1.092	0.03271	111.215	1.2051	0.01984	0.002	109.927	0.888E-06	0.027
11083	1.092	0.02755	111.016	1.2075	0.01983	0.003	109.927	0.931E-06	0.035
11084	1.092	0.02285	110.834	1.2096	0.01980	0.004	109.926	0.973E-06	0.046
11077	2.176	0.03826	111.191	2.4465	0.02087	0.004	109.924	0.408E-06	0.037
11078	2.176	0.03267	111.051	2.4501	0.02095	0.003	109.925	0.426E-06	0.028
11079	2.176	0.02753	110.882	2.4545	0.02088	0.003	109.926	0.440E-06	0.035
11080	2.176	0.02283	110.723	2.4586	0.02076	0.005	109.925	0.440E-06	0.046
11073	3.111	0.03822	111.078	3.5537	0.02186	0.004	109.921	0.280E-06	0.036
11074	3.111	0.03263	110.912	3.5603	0.02185	0.005	109.921	0.287E-06	0.046
11075	3.111	0.02750	110.755	3.5665	0.02179	0.006	109.923	0.285E-06	0.058
11076	3.111	0.02281	110.622	3.5719	0.02173	0.008	109.920	0.301E-06	0.077
11069	4.170	0.03819	110.974	4.8421	0.02305	0.004	109.927	0.198E-06	0.036
11070	4.170	0.03262	110.833	4.8503	0.02298	0.005	109.927	0.207E-06	0.047
11071	4.170	0.02749	110.695	4.8583	0.02293	0.006	109.926	0.212E-06	0.060
11072	4.170	0.02280	110.541	4.8672	0.02298	0.009	109.925	0.228E-06	0.083
11065	5.851	0.03815	110.859	6.9431	0.02526	0.004	109.939	0.145E-06	0.039
11066	5.851	0.03258	110.730	6.9548	0.02518	0.005	109.938	0.151E-06	0.049
11067	5.851	0.02747	110.608	6.9660	0.02512	0.007	109.938	0.152E-06	0.063
11068	5.851	0.02279	110.471	6.9785	0.02505	0.009	109.937	0.164E-06	0.084
11061	7.176	0.03813	110.755	8.6326	0.02716	0.005	109.928	0.115E-06	0.041
11062	7.176	0.03256	110.635	8.6470	0.02708	0.006	109.929	0.116E-06	0.052
11063	7.176	0.02744	110.516	8.6614	0.02698	0.007	109.929	0.115E-06	0.066
11064	7.176	0.02277	110.430	8.6718	0.02696	0.009	109.928	0.125E-06	0.082
11057	8.705	0.03833	110.642	10.5878	0.02956	0.007	109.920	0.812E-07	0.055
11058	8.705	0.03274	110.524	10.6060	0.02948	0.009	109.921	0.785E-07	0.072
11059	8.705	0.02760	110.444	10.6185	0.02923	0.011	109.919	0.771E-07	0.094
11060	8.705	0.02290	110.324	10.6372	0.02924	0.015	109.921	0.758E-07	0.121
11053	10.449	0.03831	110.573	12.7703	0.03268	0.006	109.930	0.761E-07	0.050
11054	10.450	0.03273	110.468	12.7913	0.03226	0.007	109.932	0.703E-07	0.057
11055	10.450	0.02759	110.400	12.8053	0.03158	0.009	109.930	0.605E-07	0.071
11056	10.450	0.02290	110.314	12.8220	0.03225	0.011	109.932	0.721E-07	0.092
11049	11.808	0.03829	110.528	14.4053	0.03441	0.005	109.926	0.620E-07	0.043
11050	11.809	0.03271	110.444	14.4244	0.03441	0.006	109.925	0.642E-07	0.053
11051	11.809	0.02758	110.345	14.4469	0.03404	0.008	109.925	0.602E-07	0.067
11052	11.810	0.02289	110.235	14.4720	0.03441	0.011	109.924	0.636E-07	0.089
11045	13.512	0.04430	110.578	16.3150	0.03726	0.004	109.933	0.615E-07	0.037
11046	13.513	0.03828	110.478	16.3408	0.03717	0.006	109.931	0.594E-07	0.045
11047	13.515	0.03270	110.394	16.3629	0.03708	0.007	109.933	0.590E-07	0.056

Table 2. Thermal conductivity and thermal diffusivity of the 75.007 % neon – 24.993 % nitrogen mixture. (continued)

Run point	P_{cell} MPa	Q W·m^{-1}	T_{exp} K	ρ_{calc} mol·L^{-1}	λ_{exp} W·m^{-1}·K^{-1}	STAT	T_{cell} K	a m^2·s^{-1}	DSTAT
11048	13.515	0.02757	110.324	16.3809	0.03674	0.009	109.932	0.579E-07	0.070
11041	15.465	0.05074	110.622	18.3164	0.04021	0.004	109.945	0.579E-07	0.032
11042	15.467	0.04428	110.532	18.3411	0.04012	0.005	109.943	0.587E-07	0.040
11043	15.468	0.03827	110.429	18.3695	0.04011	0.006	109.944	0.583E-07	0.049
11044	15.469	0.03270	110.360	18.3885	0.04010	0.007	109.945	0.612E-07	0.060
11037	17.346	0.05763	110.648	20.0484	0.04307	0.004	109.938	0.552E-07	0.032
11038	17.348	0.05072	110.553	20.0761	0.04296	0.005	109.939	0.553E-07	0.039
11039	17.350	0.04426	110.482	20.0966	0.04287	0.006	109.938	0.547E-07	0.046
11040	17.350	0.03826	110.391	20.1221	0.04286	0.006	109.940	0.549E-07	0.051
11033	19.619	0.05760	110.572	21.9302	0.04627	0.004	109.930	0.515E-07	0.033
11034	19.623	0.05070	110.506	21.9513	0.04619	0.005	109.932	0.519E-07	0.041
11035	19.627	0.04425	110.411	21.9802	0.04610	0.006	109.931	0.509E-07	0.049
11036	19.629	0.03824	110.331	22.0038	0.04609	0.008	109.931	0.501E-07	0.062
11029	22.707	0.07271	110.694	24.0634	0.05040	0.003	109.937	0.538E-07	0.027
11030	22.712	0.06117	110.575	24.0995	0.05026	0.004	109.941	0.523E-07	0.034
11031	22.710	0.05069	110.449	24.1324	0.05004	0.006	109.938	0.522E-07	0.046
11032	22.714	0.04119	110.351	24.1617	0.05027	0.008	109.940	0.524E-07	0.061
11025	25.841	0.08957	110.794	25.8973	0.05438	0.003	109.928	0.524E-07	0.022
11026	25.845	0.07672	110.665	25.9341	0.05437	0.003	109.929	0.516E-07	0.026
11027	25.848	0.06488	110.547	25.9674	0.05434	0.004	109.927	0.505E-07	0.034
11028	25.852	0.05406	110.431	26.0005	0.05439	0.006	109.928	0.496E-07	0.045
11021	30.026	0.10821	110.897	27.9578	0.05945	0.002	109.929	0.554E-07	0.019
11022	30.029	0.08950	110.731	28.0015	0.05926	0.003	109.932	0.520E-07	0.024
11023	30.033	0.07262	110.578	28.0430	0.05938	0.004	109.931	0.532E-07	0.031
11024	30.037	0.05754	110.427	28.0837	0.05925	0.006	109.929	0.498E-07	0.045
11017	34.843	0.12866	111.003	29.9234	0.06477	0.002	109.917	0.651E-07	0.015
11018	34.843	0.10818	110.828	29.9661	0.06479	0.002	109.916	0.661E-07	0.020
11019	34.844	0.08951	110.669	30.0055	0.06469	0.003	109.918	0.669E-07	0.025
11020	34.844	0.07262	110.534	30.0384	0.06479	0.004	109.919	0.678E-07	0.034
11013	40.061	0.13956	110.992	31.7291	0.07034	0.002	109.917	0.622E-07	0.018
11014	40.066	0.11819	110.829	31.7686	0.07036	0.003	109.918	0.622E-07	0.023
11015	40.071	0.09862	110.676	31.8057	0.07025	0.004	109.918	0.615E-07	0.029
11016	40.076	0.08086	110.524	31.8426	0.07033	0.005	109.918	0.605E-07	0.039
11009	47.868	0.15077	111.001	33.9476	0.07804	0.002	109.941	0.661E-07	0.014
11010	47.871	0.12851	110.839	33.9832	0.07803	0.002	109.942	0.658E-07	0.018
11011	47.878	0.10807	110.692	34.0171	0.07802	0.003	109.942	0.663E-07	0.023
11012	47.883	0.08945	110.552	34.0488	0.07816	0.004	109.940	0.658E-07	0.032
11005	56.657	0.20054	111.223	35.9362	0.08618	0.001	109.941	0.679E-07	0.011
11006	56.663	0.16851	111.017	35.9790	0.08617	0.002	109.940	0.679E-07	0.014
11007	56.666	0.13933	110.818	36.0200	0.08626	0.002	109.939	0.666E-07	0.018
11008	56.671	0.11298	110.648	36.0555	0.08614	0.003	109.941	0.666E-07	0.024
11001	67.250	0.23511	111.275	37.9436	0.09519	0.001	109.906	0.708E-07	0.008
11002	67.249	0.20029	111.069	37.9821	0.09529	0.002	109.905	0.719E-07	0.013

Table 2. Thermal conductivity and thermal diffusivity of the 75.007 % neon – 24.993 % nitrogen mixture. (continued)

Run point	P_{cell} MPa	Q $W \cdot m^{-1}$	T_{exp} K	ρ_{calc} $mol \cdot L^{-1}$	λ_{exp} $W \cdot m^{-1} \cdot K^{-1}$	STAT	T_{cell} K	a $m^2 \cdot s^{-1}$	DSTAT
11003	67.247	0.16831	110.890	38.0157	0.09527	0.002	109.907	0.724E-07	0.019
11004	67.247	0.13918	110.709	38.0497	0.09534	0.003	109.905	0.709E-07	0.024
Nominal temperature = 201 K									
12061	1.083	0.09012	202.258	0.6424	0.03065	0.001	199.711	0.212E-05	0.017
12062	1.085	0.07212	201.755	0.6448	0.03060	0.002	199.711	0.214E-05	0.023
12063	1.083	0.05613	201.311	0.6455	0.03044	0.003	199.715	0.210E-05	0.033
12064	1.083	0.04215	200.917	0.6467	0.03049	0.005	199.710	0.230E-05	0.053
12057	1.893	0.09010	202.045	1.1212	0.03119	0.001	199.714	0.122E-05	0.012
12058	1.893	0.07211	201.584	1.1234	0.03114	0.002	199.712	0.124E-05	0.017
12059	1.893	0.05613	201.207	1.1256	0.03097	0.003	199.714	0.125E-05	0.033
12060	1.893	0.04215	200.833	1.1277	0.03103	0.004	199.711	0.129E-05	0.050
12053	3.206	0.10320	202.151	1.8896	0.03199	0.001	199.709	0.749E-06	0.012
12054	3.206	0.08386	201.698	1.8940	0.03190	0.001	199.710	0.742E-06	0.016
12055	3.206	0.06655	201.313	1.8977	0.03184	0.002	199.708	0.745E-06	0.019
12056	3.206	0.05125	200.949	1.9013	0.03180	0.003	199.710	0.761E-06	0.027
12049	4.596	0.10318	202.017	2.6966	0.03268	0.001	199.713	0.530E-06	0.012
12050	4.596	0.08385	201.586	2.7026	0.03259	0.002	199.712	0.525E-06	0.017
12051	4.596	0.06654	201.206	2.7075	0.03249	0.002	199.713	0.530E-06	0.023
12052	4.596	0.05124	200.861	2.7124	0.03250	0.003	199.710	0.540E-06	0.033
12045	5.949	0.10317	201.872	3.4730	0.03330	0.002	199.718	0.416E-06	0.018
12046	5.949	0.08385	201.470	3.4803	0.03326	0.002	199.716	0.419E-06	0.022
12048	5.949	0.06654	201.107	3.4869	0.03315	0.003	199.714	0.417E-06	0.031
12048	5.949	0.05124	200.794	3.4926	0.03336	0.005	199.717	0.464E-06	0.048
12041	9.686	0.11712	201.893	5.5538	0.03526	0.001	199.705	0.260E-06	0.014
12042	9.686	0.09645	201.510	5.5650	0.03520	0.002	199.709	0.258E-06	0.018
12043	9.686	0.07785	201.165	5.5752	0.03513	0.003	199.708	0.257E-06	0.024
12044	9.686	0.06121	200.853	5.5844	0.03510	0.004	199.708	0.259E-06	0.036
12037	13.198	0.11712	201.698	7.4287	0.03710	0.001	199.698	0.191E-06	0.014
12038	13.199	0.09645	201.346	7.4430	0.03711	0.002	199.697	0.192E-06	0.019
12039	13.199	0.07783	201.026	7.4556	0.03699	0.003	199.696	0.188E-06	0.025
12040	13.199	0.06121	200.736	7.4675	0.03700	0.004	199.695	0.187E-06	0.035
12033	17.312	0.11703	201.553	9.5060	0.03938	0.002	199.709	0.161E-06	0.020
12034	17.312	0.09640	201.230	9.5221	0.03935	0.003	199.710	0.164E-06	0.026
12035	17.312	0.07779	200.938	9.5368	0.03931	0.003	199.710	0.168E-06	0.025
12036	17.311	0.06117	200.679	9.5495	0.03931	0.006	199.710	0.172E-06	0.052
12029	21.457	0.13186	201.635	11.4531	0.04175	0.002	199.702	0.144E-06	0.017
12030	21.455	0.10303	201.211	11.4772	0.04172	0.003	199.698	0.147E-06	0.025
12031	21.454	0.07777	200.841	11.4990	0.04168	0.004	199.698	0.149E-06	0.039
12032	21.453	0.05607	200.522	11.5177	0.04165	0.007	199.699	0.158E-06	0.063
12025	26.169	0.13183	201.477	13.5182	0.04443	0.002	199.697	0.125E-06	0.019
12026	26.168	0.10300	201.089	13.5444	0.04443	0.003	199.700	0.125E-06	0.027
12027	26.168	0.07775	200.756	13.5672	0.04444	0.005	199.700	0.130E-06	0.042
12028	26.168	0.05607	200.457	13.5878	0.04431	0.007	199.698	0.134E-06	0.063

Table 2. Thermal conductivity and thermal diffusivity of the 75.007 % neon – 24.993 % nitrogen mixture. (continued)

Run point	P_{cell} MPa	Q $W \cdot m^{-1}$	T_{exp} K	ρ_{calc} $mol \cdot L^{-1}$	λ_{exp} $W \cdot m^{-1} \cdot K^{-1}$	STAT	T_{cell} K	a $m^2 \cdot s^{-1}$	DSTAT
12021	31.256	0.13181	201.346	15.5598	0.04738	0.002	199.703	0.110E-06	0.019
12022	31.256	0.10300	200.985	15.5872	0.04734	0.003	199.700	0.113E-06	0.027
12023	31.255	0.07775	200.670	15.6107	0.04724	0.005	199.701	0.113E-06	0.043
12024	31.255	0.05605	200.385	15.6324	0.04727	0.008	199.698	0.116E-06	0.069
12017	36.558	0.14752	201.389	17.4824	0.05045	0.002	199.695	0.973E-07	0.017
12018	36.558	0.11693	201.033	17.5115	0.05052	0.003	199.691	0.986E-07	0.024
12019	36.558	0.08991	200.727	17.5363	0.05041	0.004	199.693	0.966E-07	0.036
12020	36.556	0.06645	200.452	17.5584	0.05037	0.006	199.690	0.974E-07	0.054
12013	42.778	0.16411	201.448	19.5127	0.05410	0.001	199.682	0.100E-06	0.011
12014	42.777	0.13175	201.104	19.5422	0.05409	0.002	199.683	0.102E-06	0.017
12015	42.778	0.10296	200.792	19.5698	0.05399	0.004	199.682	0.103E-06	0.032
12016	42.778	0.07773	200.524	19.5930	0.05402	0.005	199.683	0.106E-06	0.048
12009	49.619	0.18155	201.526	21.5031	0.05799	0.001	199.712	0.969E-07	0.011
12010	49.620	0.13947	201.105	21.5414	0.05795	0.002	199.711	0.975E-07	0.015
12011	49.619	0.10296	200.736	21.5742	0.05800	0.003	199.701	0.102E-06	0.025
12012	49.619	0.07197	200.420	21.6027	0.05799	0.005	199.703	0.104E-06	0.042
12005	56.613	0.18160	201.388	23.3374	0.06192	0.002	199.701	0.922E-07	0.015
12006	56.615	0.13950	200.993	23.3741	0.06189	0.003	199.698	0.908E-07	0.022
12007	56.618	0.10297	200.659	23.4056	0.06190	0.004	199.700	0.944E-07	0.035
12008	56.619	0.07197	200.371	23.4325	0.06181	0.007	199.700	0.965E-07	0.060
12001	65.541	0.22928	201.654	25.3717	0.06685	0.001	199.699	0.855E-07	0.012
12002	65.544	0.18160	201.240	25.4107	0.06685	0.002	199.697	0.840E-07	0.016
12003	65.546	0.13950	200.879	25.4449	0.06688	0.003	199.697	0.822E-07	0.024
12004	65.545	0.10296	200.557	25.4748	0.06687	0.004	199.694	0.811E-07	0.036
Nominal temperature = 302 K									
13049	1.661	0.15889	302.901	0.6546	0.04122	0.001	299.555	0.247E-05	0.015
13050	1.660	0.12924	302.265	0.6557	0.04128	0.002	299.547	0.250E-05	0.020
13051	1.660	0.10265	301.720	0.6568	0.04124	0.002	299.552	0.258E-05	0.027
13052	1.660	0.07910	301.227	0.6579	0.04109	0.003	299.553	0.259E-05	0.041
13045	3.734	0.15893	302.619	1.4586	0.04222	0.001	299.544	0.114E-05	0.011
13046	3.734	0.12926	302.051	1.4613	0.04222	0.001	299.545	0.117E-05	0.014
13047	3.733	0.10266	301.530	1.4636	0.04225	0.002	299.542	0.117E-05	0.020
13048	3.733	0.07912	301.076	1.4655	0.04227	0.003	299.540	0.121E-05	0.029
13041	6.462	0.15893	302.413	2.4924	0.04319	0.001	299.542	0.720E-06	0.010
13042	6.462	0.12926	301.878	2.4969	0.04325	0.001	299.543	0.733E-06	0.012
13043	6.461	0.10265	301.400	2.5005	0.04326	0.002	299.540	0.755E-06	0.018
13044	6.461	0.07910	300.977	2.5040	0.04333	0.002	299.541	0.787E-06	0.024
13037	9.413	0.15893	302.248	3.5792	0.04428	0.001	299.546	0.511E-06	0.010
13038	9.413	0.12926	301.742	3.5852	0.04418	0.001	299.542	0.507E-06	0.014
13039	9.413	0.10265	301.295	3.5905	0.04426	0.002	299.544	0.528E-06	0.018
13040	9.413	0.07910	300.895	3.5952	0.04432	0.003	299.544	0.549E-06	0.026
13033	12.071	0.19148	302.670	4.5211	0.04508	0.001	299.541	0.417E-06	0.007
13034	12.071	0.15880	302.134	4.5290	0.04515	0.001	299.539	0.424E-06	0.010

Table 2. Thermal conductivity and thermal diffusivity of the 75.007 % neon – 24.993 % nitrogen mixture. (continued)

Run point	P_{cell} MPa	Q $W \cdot m^{-1}$	T_{exp} K	ρ_{calc} $mol \cdot L^{-1}$	λ_{exp} $W \cdot m^{-1} \cdot K^{-1}$	STAT	T_{cell} K	a $m^2 \cdot s^{-1}$	DSTAT
13035	12.071	0.12914	301.658	4.5358	0.04505	0.001	299.541	0.428E-06	0.014
13036	12.071	0.10256	301.223	4.5423	0.04503	0.002	299.541	0.430E-06	0.017
13029	15.159	0.19149	302.529	5.5891	0.04624	0.001	299.543	0.342E-06	0.007
13030	15.158	0.15882	302.018	5.5978	0.04619	0.001	299.542	0.339E-06	0.009
13031	15.157	0.12916	301.555	5.6060	0.04616	0.001	299.540	0.341E-06	0.012
13032	15.156	0.10258	301.144	5.6133	0.04606	0.002	299.539	0.343E-06	0.017
13025	17.978	0.19149	302.396	6.5330	0.04730	0.001	299.530	0.291E-06	0.007
13026	17.978	0.15882	301.917	6.5431	0.04714	0.001	299.538	0.285E-06	0.009
13027	17.978	0.12917	301.467	6.5526	0.04724	0.001	299.532	0.290E-06	0.013
13028	17.978	0.10258	301.062	6.5611	0.04701	0.002	299.529	0.274E-06	0.017
13021	24.202	0.22722	302.767	8.4971	0.04927	0.001	299.534	0.225E-06	0.007
13022	24.202	0.18027	302.102	8.5148	0.04919	0.001	299.534	0.226E-06	0.011
13023	24.202	0.13871	301.510	8.5306	0.04925	0.002	299.537	0.225E-06	0.015
13024	24.202	0.10258	300.996	8.5444	0.04939	0.003	299.538	0.236E-06	0.025
13017	31.170	0.25277	302.890	10.5387	0.05202	0.001	299.535	0.197E-06	0.007
13018	31.170	0.20311	302.236	10.5598	0.05184	0.001	299.538	0.193E-06	0.010
13019	31.169	0.15884	301.644	10.5788	0.05174	0.001	299.535	0.191E-06	0.014
13020	31.169	0.11997	301.131	10.5953	0.05181	0.002	299.534	0.200E-06	0.020
13013	38.857	0.25281	302.651	12.6216	0.05463	0.001	299.542	0.156E-06	0.008
13014	38.857	0.20314	302.037	12.6445	0.05480	0.001	299.540	0.160E-06	0.009
13015	38.857	0.15886	301.496	12.6648	0.05474	0.001	299.544	0.159E-06	0.014
13016	38.857	0.11999	301.011	12.6830	0.05488	0.002	299.539	0.161E-06	0.022
13009	47.207	0.27970	302.756	14.6761	0.05799	0.001	299.537	0.148E-06	0.006
13010	47.206	0.22731	302.154	14.7010	0.05799	0.001	299.539	0.148E-06	0.008
13011	47.205	0.18034	301.614	14.7233	0.05809	0.001	299.540	0.150E-06	0.012
13012	47.205	0.13874	301.137	14.7434	0.05812	0.002	299.538	0.153E-06	0.018
13005	56.351	0.27978	302.526	16.7347	0.06106	0.001	299.528	0.125E-06	0.006
13006	56.349	0.22734	301.960	16.7602	0.06117	0.001	299.529	0.125E-06	0.009
13007	56.348	0.18034	301.448	16.7834	0.06119	0.001	299.526	0.124E-06	0.013
13008	56.348	0.13875	300.995	16.8040	0.06151	0.002	299.522	0.127E-06	0.018
13001	67.079	0.27977	302.334	18.9107	0.06499	0.001	299.513	0.127E-06	0.007
13002	67.079	0.22733	301.805	18.9365	0.06518	0.001	299.512	0.131E-06	0.009
13003	67.078	0.18032	301.330	18.9596	0.06546	0.001	299.510	0.138E-06	0.013
13004	67.078	0.13871	300.911	18.9800	0.06566	0.002	299.512	0.143E-06	0.019

Table 3. Thermal conductivity and thermal diffusivity of the 49.936 % neon – 50.064 % nitrogen mixture.

Run point	P_{cell} MPa	Q W·m^{-1}	T_{exp} K	ρ_{calc} mol·L^{-1}	λ_{exp} W·m^{-1}·K^{-1}	STAT	T_{cell} K	a m^2·s^{-1}	DSTAT
Nominal temperature = 121 K									
22077	0.562	0.03114	121.498	0.5676	0.01687	0.004	119.964	0.136E-05	0.049
22078	0.562	0.02582	121.235	0.5689	0.01688	0.006	119.961	0.140E-05	0.063
22079	0.562	0.02100	121.003	0.5701	0.01684	0.007	119.964	0.144E-05	0.084
22080	0.562	0.01669	120.783	0.5712	0.01687	0.010	119.960	0.152E-05	0.119
22073	1.270	0.03111	121.274	1.3163	0.01778	0.005	119.945	0.561E-06	0.049
22074	1.270	0.02580	121.046	1.3191	0.01774	0.006	119.942	0.557E-06	0.065
22075	1.270	0.02098	120.839	1.3218	0.01766	0.008	119.941	0.558E-06	0.087
22076	1.270	0.01669	120.656	1.3241	0.01758	0.012	119.944	0.550E-06	0.122
22069	2.077	0.03107	121.076	2.2204	0.01852	0.004	119.957	0.311E-06	0.043
22070	2.077	0.02578	120.939	2.2236	0.01858	0.006	119.958	0.332E-06	0.057
22071	2.077	0.02097	120.748	2.2281	0.01844	0.008	119.957	0.323E-06	0.080
22072	2.077	0.01667	120.583	2.2320	0.01844	0.012	119.958	0.343E-06	0.114
22065	2.867	0.03105	120.953	3.1573	0.01963	0.005	119.948	0.210E-06	0.044
22066	2.867	0.02575	120.787	3.1634	0.01964	0.006	119.951	0.213E-06	0.059
22067	2.867	0.02096	120.630	3.1692	0.01967	0.009	119.949	0.220E-06	0.082
22068	2.867	0.01666	120.475	3.1750	0.01947	0.012	119.949	0.209E-06	0.111
22061	3.796	0.03102	120.856	4.3270	0.02104	0.005	119.941	0.179E-06	0.047
22062	3.796	0.02574	120.713	4.3351	0.02097	0.007	119.943	0.182E-06	0.060
22063	3.796	0.02094	120.550	4.3444	0.02097	0.009	119.942	0.195E-06	0.084
22064	3.796	0.01665	120.425	4.3515	0.02102	0.013	119.943	0.219E-06	0.123
22057	5.319	0.03100	120.681	6.4146	0.02415	0.006	119.927	0.107E-06	0.049
22058	5.319	0.02571	120.532	6.4296	0.02414	0.007	119.924	0.107E-06	0.065
22059	5.319	0.02093	120.422	6.4407	0.02379	0.010	119.924	0.104E-06	0.087
22060	5.319	0.01665	120.322	6.4509	0.02393	0.014	119.924	0.122E-06	0.124
22053	6.872	0.03097	120.531	8.7312	0.02808	0.007	119.941	0.632E-07	0.055
22054	6.872	0.02570	120.426	8.7478	0.02786	0.009	119.940	0.598E-07	0.074
22055	6.872	0.02092	120.334	8.7625	0.02795	0.012	119.941	0.614E-07	0.099
21056	6.872	0.01664	120.264	8.7737	0.02835	0.013	119.940	0.692E-07	0.111
22049	7.972	0.03096	120.454	10.4337	0.03132	0.006	119.945	0.583E-07	0.052
22050	7.972	0.02569	120.353	10.4543	0.03122	0.008	119.945	0.594E-07	0.066
22051	7.972	0.02092	120.250	10.4753	0.03107	0.012	119.947	0.566E-07	0.098
22052	7.972	0.01664	120.233	10.4788	0.03104	0.016	119.947	0.616E-07	0.132
22045	9.370	0.03674	120.533	12.5327	0.03510	0.006	119.978	0.598E-07	0.048
22046	9.370	0.03096	120.432	12.5581	0.03493	0.007	119.975	0.606E-07	0.061
22047	9.371	0.02570	120.333	12.5843	0.03504	0.010	119.974	0.637E-07	0.078
22048	9.372	0.02092	120.281	12.5987	0.03490	0.013	119.975	0.681E-07	0.109
22041	10.312	0.03671	120.488	13.8923	0.03742	0.007	119.972	0.498E-07	0.055
22042	10.313	0.03095	120.409	13.9152	0.03718	0.009	119.971	0.527E-07	0.074
22043	10.313	0.02569	120.319	13.9412	0.03726	0.012	119.971	0.521E-07	0.096
22044	10.313	0.02091	120.232	13.9654	0.03728	0.016	119.970	0.594E-07	0.129
22037	11.765	0.04294	120.519	15.7734	0.04081	0.006	119.970	0.488E-07	0.049
22038	11.766	0.03669	120.412	15.8058	0.04074	0.008	119.970	0.494E-07	0.060
22039	11.767	0.03094	120.352	15.8246	0.04069	0.010	119.970	0.485E-07	0.076

Table 3. Thermal conductivity and thermal diffusivity of the 49.936 % neon – 50.064 % nitrogen mixture. (continued)

Run point	P_{cell} MPa	Q $W \cdot m^{-1}$	T_{exp} K	ρ_{calc} $mol \cdot L^{-1}$	λ_{exp} $W \cdot m^{-1} \cdot K^{-1}$	STAT	T_{cell} K	a $m^2 \cdot s^{-1}$	DSTAT
22040	11.767	0.02568	120.244	15.8572	0.04073	0.013	119.968	0.506E-07	0.103
22033	13.377	0.04970	120.531	17.5724	0.04407	0.005	119.966	0.449E-07	0.042
22034	13.379	0.04295	120.465	17.5942	0.04425	0.006	119.967	0.463E-07	0.051
22035	13.381	0.03670	120.400	17.6151	0.04386	0.008	119.967	0.454E-07	0.063
22036	13.382	0.03095	120.311	17.6432	0.04470	0.010	119.966	0.500E-07	0.083
22029	15.543	0.05696	120.583	19.5488	0.04818	0.004	119.970	0.467E-07	0.030
22030	15.543	0.04971	120.487	19.5765	0.04812	0.005	119.969	0.455E-07	0.037
22031	15.543	0.04297	120.423	19.5950	0.04836	0.006	119.968	0.487E-07	0.048
22032	15.543	0.03672	120.344	19.6179	0.04788	0.007	119.968	0.441E-07	0.056
22025	18.138	0.07653	120.751	21.3994	0.05254	0.003	119.970	0.583E-07	0.026
22026	18.142	0.06410	120.618	21.4384	0.05249	0.004	119.969	0.596E-07	0.034
22027	18.145	0.05278	120.516	21.4679	0.05255	0.005	119.968	0.632E-07	0.044
22028	18.145	0.04258	120.389	21.5029	0.05263	0.008	119.967	0.691E-07	0.062
22021	21.810	0.09001	120.800	23.4618	0.05815	0.003	119.969	0.587E-07	0.023
22022	21.813	0.07648	120.676	23.4939	0.05826	0.003	119.970	0.608E-07	0.028
22023	21.814	0.06406	120.565	23.5217	0.05824	0.005	119.971	0.625E-07	0.038
22024	21.817	0.05275	120.441	23.5538	0.05822	0.006	119.971	0.674E-07	0.050
22017	27.285	0.10969	120.892	25.7283	0.06593	0.002	119.983	0.644E-07	0.020
22018	27.291	0.09468	120.759	25.7594	0.06587	0.003	119.983	0.652E-07	0.024
22019	27.295	0.08081	120.643	25.7864	0.06590	0.004	119.981	0.686E-07	0.032
22020	27.299	0.06804	120.553	25.8077	0.06600	0.005	119.981	0.727E-07	0.042
22013	33.549	0.15504	121.133	27.6232	0.07371	0.002	119.984	0.648E-07	0.014
22014	33.555	0.13132	120.959	27.6588	0.07373	0.002	119.983	0.661E-07	0.017
22015	33.561	0.10960	120.798	27.6919	0.07375	0.003	119.984	0.670E-07	0.023
22016	33.564	0.08988	120.637	27.7240	0.07394	0.003	119.983	0.672E-07	0.029
22009	42.193	0.22290	121.449	29.5963	0.08335	0.002	119.976	0.675E-07	0.013
22010	42.200	0.18732	121.215	29.6382	0.08340	0.002	119.976	0.679E-07	0.016
22011	42.206	0.15490	120.999	29.6770	0.08356	0.003	119.977	0.677E-07	0.021
22012	42.209	0.12561	120.794	29.7131	0.08351	0.004	119.976	0.667E-07	0.030
22005	53.598	0.26127	121.506	31.6146	0.09467	0.001	119.974	0.709E-07	0.011
22006	53.602	0.22262	121.276	31.6505	0.09477	0.002	119.974	0.705E-07	0.014
22007	53.606	0.18712	121.066	31.6836	0.09478	0.002	119.973	0.692E-07	0.018
22008	53.611	0.15477	120.870	31.7145	0.09505	0.003	119.974	0.693E-07	0.024
22001	68.338	0.30259	121.525	33.6128	0.10776	0.001	119.926	0.853E-07	0.011
22002	68.339	0.26087	121.302	33.6436	0.10788	0.002	119.926	0.860E-07	0.013
22003	68.341	0.22229	121.103	33.6713	0.10801	0.002	119.928	0.875E-07	0.017
22004	68.342	0.18687	120.913	33.6975	0.10793	0.003	119.926	0.879E-07	0.022
Nominal temperature = 203 K									
21057	1.027	0.10444	205.225	0.6028	0.02599	0.001	201.797	0.180E-05	0.013
21058	1.027	0.08486	204.588	0.6047	0.02591	0.002	201.796	0.178E-05	0.019
21060	1.027	0.06735	204.021	0.6065	0.02585	0.002	201.800	0.179E-05	0.019
21060	1.027	0.05186	203.513	0.6080	0.02579	0.002	201.796	0.181E-05	0.028
21053	2.190	0.10441	204.861	1.2899	0.02679	0.001	201.795	0.782E-06	0.014

Table 3. Thermal conductivity and thermal diffusivity of the 49.936 % neon – 50.064 % nitrogen mixture. (continued)

Run point	P_{cell} MPa	Q W·m^{-1}	T_{exp} K	ρ_{calc} mol·L^{-1}	λ_{exp} W·m^{-1}·K^{-1}	STAT	T_{cell} K	a m^2·s^{-1}	DSTAT
21054	2.190	0.08484	204.310	1.2936	0.02672	0.002	201.791	0.848E-06	0.020
21055	2.190	0.06732	203.798	1.2970	0.02664	0.003	201.793	0.850E-06	0.027
21056	2.190	0.05183	203.340	1.3001	0.02657	0.004	201.794	0.842E-06	0.039
21049	3.723	0.10438	204.636	2.1969	0.02774	0.002	201.796	0.524E-06	0.016
21050	3.723	0.08482	204.105	2.2031	0.02766	0.002	201.792	0.520E-06	0.020
21051	3.723	0.06731	203.635	2.2086	0.02756	0.003	201.793	0.522E-06	0.027
21052	3.723	0.05183	203.216	2.2136	0.02752	0.004	201.794	0.527E-06	0.041
21045	5.149	0.10436	204.350	3.0403	0.02854	0.001	201.785	0.372E-06	0.014
21046	5.149	0.08480	203.872	3.0483	0.02843	0.002	201.785	0.364E-06	0.018
21047	5.149	0.06730	203.447	3.0554	0.02844	0.003	201.785	0.378E-06	0.026
21048	5.149	0.05182	203.070	3.0617	0.02841	0.004	201.785	0.388E-06	0.041
21041	8.752	0.10431	203.969	5.1416	0.03082	0.002	201.790	0.216E-06	0.020
21042	8.752	0.08477	203.557	5.1538	0.03077	0.003	201.787	0.216E-06	0.026
21043	8.751	0.06728	203.195	5.1641	0.03068	0.004	201.787	0.217E-06	0.038
21044	8.751	0.05181	202.879	5.1735	0.03066	0.006	201.786	0.226E-06	0.055
21037	12.360	0.10429	203.747	7.1714	0.03331	0.002	201.803	0.163E-06	0.020
21038	12.360	0.08476	203.380	7.1865	0.03330	0.003	201.802	0.162E-06	0.027
21039	12.360	0.06727	203.062	7.2000	0.03329	0.004	201.804	0.167E-06	0.039
21040	12.360	0.05181	202.771	7.2124	0.03327	0.006	201.803	0.176E-06	0.057
21033	15.974	0.10425	203.563	9.0963	0.03602	0.002	201.811	0.134E-06	0.022
21034	15.974	0.08474	203.231	9.1142	0.03596	0.003	201.808	0.133E-06	0.030
21035	15.973	0.06726	202.944	9.1294	0.03602	0.005	201.810	0.140E-06	0.042
21036	15.973	0.05180	202.686	9.1434	0.03595	0.007	201.808	0.143E-06	0.060
21029	19.555	0.11837	203.618	10.8629	0.03874	0.002	201.806	0.114E-06	0.019
21030	19.555	0.09750	203.297	10.8833	0.03872	0.003	201.806	0.114E-06	0.025
21031	19.555	0.07867	203.013	10.9014	0.03864	0.004	201.806	0.115E-06	0.034
21032	19.555	0.06186	202.758	10.9177	0.03872	0.005	201.805	0.119E-06	0.048
21025	23.513	0.11835	203.449	12.6695	0.04178	0.002	201.798	0.100E-06	0.020
21026	23.514	0.09749	203.152	12.6911	0.04176	0.003	201.798	0.993E-07	0.027
21027	23.514	0.07867	202.887	12.7102	0.04175	0.004	201.798	0.992E-07	0.037
21028	23.514	0.06186	202.664	12.7264	0.04169	0.006	201.798	0.101E-06	0.052
21021	28.934	0.13319	203.478	14.8552	0.04585	0.002	201.801	0.938E-07	0.014
21022	28.934	0.11102	203.203	14.8770	0.04586	0.002	201.802	0.954E-07	0.017
21023	28.932	0.09087	202.946	14.8970	0.04581	0.003	201.801	0.940E-07	0.023
21024	28.932	0.07275	202.712	14.9154	0.04586	0.004	201.801	0.967E-07	0.033
21017	33.999	0.15735	203.625	16.6300	0.04965	0.001	201.799	0.927E-07	0.012
21018	33.998	0.13315	203.348	16.6526	0.04966	0.002	201.799	0.948E-07	0.015
21019	33.997	0.11099	203.089	16.6741	0.04962	0.002	201.796	0.951E-07	0.019
21020	33.997	0.09085	202.858	16.6936	0.04961	0.003	201.795	0.975E-07	0.025
21013	40.689	0.17455	203.629	18.6693	0.05450	0.001	201.802	0.864E-07	0.011
21014	40.689	0.14902	203.360	18.6926	0.05443	0.001	201.799	0.860E-07	0.013
21015	40.689	0.12551	203.112	18.7138	0.05449	0.002	201.799	0.867E-07	0.016
21016	40.688	0.10403	202.890	18.7329	0.05438	0.003	201.802	0.861E-07	0.023

Table 3. Thermal conductivity and thermal diffusivity of the 49.936 % neon – 50.064 % nitrogen mixture. (continued)

Run point	P_{cell} MPa	Q W·m^{-1}	T_{exp} K	ρ_{calc} mol·L^{-1}	λ_{exp} W·m^{-1}·K^{-1}	STAT	T_{cell} K	a m^2·s^{-1}	DSTAT
21009	48.279	0.20195	203.722	20.6232	0.05977	0.001	201.808	0.818E-07	0.010
21010	48.279	0.17447	203.454	20.6465	0.05978	0.001	201.805	0.805E-07	0.011
21011	48.279	0.14899	203.211	20.6676	0.05984	0.002	201.806	0.809E-07	0.014
21012	48.278	0.12549	202.983	20.6874	0.05982	0.002	201.802	0.805E-07	0.019
21005	56.947	0.24181	203.905	22.4994	0.06568	0.001	201.806	0.856E-07	0.008
21006	56.946	0.20190	203.564	22.5285	0.06568	0.001	201.809	0.864E-07	0.011
21007	56.945	0.16567	203.243	22.5561	0.06568	0.002	201.805	0.870E-07	0.014
21008	56.942	0.13300	202.962	22.5799	0.06580	0.002	201.805	0.891E-07	0.019
21001	67.572	0.26304	203.823	24.4511	0.07263	0.001	201.761	0.846E-07	0.008
21002	67.571	0.22138	203.492	24.4789	0.07269	0.001	201.760	0.839E-07	0.010
21003	67.570	0.18329	203.194	24.5038	0.07262	0.002	201.758	0.850E-07	0.014
21004	67.568	0.14885	202.919	24.5269	0.07278	0.002	201.756	0.863E-07	0.018
Nominal temperature = 302 K									
23045	1.550	0.12858	302.584	0.6126	0.03507	0.001	299.377	0.201E-05	0.015
23046	1.550	0.10212	301.925	0.6140	0.03521	0.002	299.376	0.212E-05	0.022
23047	1.550	0.07870	301.350	0.6152	0.03521	0.002	299.382	0.216E-05	0.029
23048	1.550	0.05830	300.833	0.6162	0.03533	0.004	299.374	0.231E-05	0.051
23041	4.175	0.12861	302.198	1.6349	0.03638	0.001	299.370	0.786E-06	0.016
23042	4.175	0.10215	301.616	1.6382	0.03642	0.002	299.372	0.785E-06	0.023
23043	4.175	0.07871	301.101	1.6410	0.03636	0.003	299.371	0.797E-06	0.033
23044	4.175	0.05831	300.655	1.6435	0.03652	0.005	299.373	0.828E-06	0.049
23037	6.746	0.15813	302.616	2.6082	0.03752	0.001	299.383	0.519E-06	0.011
23038	6.746	0.12863	302.016	2.6135	0.03751	0.001	299.385	0.521E-06	0.013
23039	6.746	0.10216	301.471	2.6184	0.03746	0.002	299.382	0.516E-06	0.021
23040	6.746	0.07872	300.989	2.6227	0.03751	0.003	299.381	0.516E-06	0.032
23033	9.634	0.15818	302.451	3.6750	0.03862	0.001	299.398	0.396E-06	0.011
23034	9.634	0.12864	301.885	3.6821	0.03870	0.001	299.398	0.410E-06	0.015
23035	9.634	0.10218	301.372	3.6886	0.03864	0.002	299.390	0.416E-06	0.021
23036	9.634	0.07873	300.916	3.6944	0.03860	0.003	299.387	0.428E-06	0.027
23029	12.431	0.15820	302.303	4.6762	0.03967	0.001	299.405	0.312E-06	0.008
23030	12.431	0.12867	301.761	4.6849	0.03942	0.001	299.402	0.297E-06	0.011
23031	12.431	0.10218	301.267	4.6928	0.03956	0.002	299.398	0.305E-06	0.017
23032	12.431	0.07873	300.833	4.6998	0.03977	0.002	299.396	0.317E-06	0.024
23025	15.301	0.19080	302.737	5.6584	0.04090	0.001	299.411	0.262E-06	0.007
23026	15.301	0.15825	302.160	5.6695	0.04091	0.001	299.401	0.263E-06	0.009
23027	15.301	0.12869	301.652	5.6793	0.04068	0.001	299.409	0.252E-06	0.012
23028	15.301	0.10220	301.188	5.6883	0.04085	0.002	299.406	0.264E-06	0.016
23021	21.429	0.19085	302.440	7.6577	0.04361	0.001	299.411	0.202E-06	0.007
23022	21.429	0.15827	301.926	7.6708	0.04359	0.001	299.414	0.201E-06	0.009
23023	21.428	0.12873	301.449	7.6829	0.04361	0.001	299.408	0.201E-06	0.011
23024	21.428	0.10222	301.032	7.6937	0.04362	0.002	299.411	0.203E-06	0.016
23017	28.582	0.22640	302.684	9.7730	0.04673	0.001	299.403	0.167E-06	0.006
23018	28.581	0.19080	302.173	9.7891	0.04667	0.001	299.403	0.168E-06	0.007

Table 3. Thermal conductivity and thermal diffusivity of the 49.936 % neon – 50.064 % nitrogen mixture. (continued)

Run point	P_{cell} MPa	Q $W \cdot m^{-1}$	T_{exp} K	ρ_{calc} $mol \cdot L^{-1}$	λ_{exp} $W \cdot m^{-1} \cdot K^{-1}$	STAT	T_{cell} K	a $m^2 \cdot s^{-1}$	DSTAT
23019	28.580	0.15825	301.700	9.8039	0.04644	0.001	299.403	0.162E-06	0.008
23020	28.580	0.12868	301.268	9.8177	0.04652	0.001	299.401	0.164E-06	0.012
23013	36.133	0.22647	302.406	11.7989	0.05012	0.001	299.406	0.142E-06	0.005
23014	36.133	0.19086	301.933	11.8163	0.05012	0.001	299.407	0.141E-06	0.007
23015	36.133	0.15827	301.496	11.8324	0.04965	0.001	299.404	0.130E-06	0.009
23016	36.133	0.12871	301.104	11.8470	0.04986	0.001	299.406	0.131E-06	0.012
23009	45.070	0.27873	302.793	13.9032	0.05406	0.000	299.413	0.128E-06	0.004
23010	45.071	0.22652	302.162	13.9292	0.05389	0.001	299.416	0.124E-06	0.007
23011	45.071	0.17969	301.591	13.9527	0.05391	0.001	299.413	0.124E-06	0.008
23012	45.072	0.13826	301.084	13.9738	0.05416	0.001	299.410	0.129E-06	0.012
23005	56.654	0.30696	302.770	16.2855	0.05918	0.001	299.427	0.111E-06	0.005
23006	56.653	0.25203	302.158	16.3127	0.05933	0.001	299.422	0.111E-06	0.005
23007	56.655	0.20249	301.620	16.3370	0.05936	0.001	299.424	0.110E-06	0.007
23008	56.659	0.15834	301.145	16.3591	0.05934	0.001	299.432	0.109E-06	0.010
23001	69.441	0.33658	302.744	18.5313	0.06482	0.000	299.417	0.106E-06	0.004
23002	69.442	0.27894	302.162	18.5588	0.06483	0.001	299.413	0.104E-06	0.006
23003	69.443	0.22666	301.645	18.5831	0.06506	0.001	299.414	0.106E-06	0.007
23004	69.445	0.17979	301.175	18.6056	0.06520	0.001	299.409	0.106E-06	0.010