

NL Series— Ferrite Wirewound Inductor

Features

- Wirewound on ferrite core design
- Shows high reliability under mechanical and environmental stresses
- Robust termination for outstanding mechanical strength
- Provides Exceptional Q values characteristics
- High Current option available
- For Inductance values outside those listed in the datasheet contact factory
- Find Frequency Curves, Environmental and Packaging specs in related supplemental documents



Applications

- Micro Televisions
- Video Camera
- Car Radios
- Radios
- Liquid Crystal Televisions
- Portable VCRs
- Mobile Telephones

Inductance and Current ranges

• NL05	0.12 ~ 10 μ H	1100 ~ 180 mA
• NL08	0.12 ~ 100 μ H	1500 ~ 120 mA
• NL10	0.01 ~ 220 μ H	450 ~ 50 mA
• NL12	0.01 ~ 1000 μ H	1050 ~ 30 mA
• NL20	1.0 ~ 10000 μ H	1800 ~ 25 mA

How to Order

NL		05		K		T		C		R10	
SEI Type		Dimensions		Tolerance		Packaging		Design		Inductance	
Type	Description	Code	EIA	Code	Tolerance	Code	Design	Code	Design	Code	Inductance
NL	Wirewound	05	0805	J	$\pm 5\%$		Standard	R12	0.12 μ H		
		08	1008	K	$\pm 10\%$		High Current	2R7	2.7 μ H		
		10	1210	M	$\pm 20\%$	C		100	10 μ H		
		12	1812					101	100 μ H		
		20	2220								

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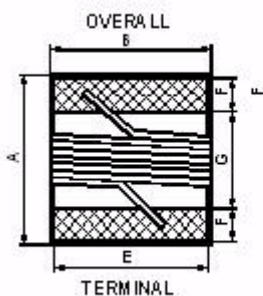


Fig 1

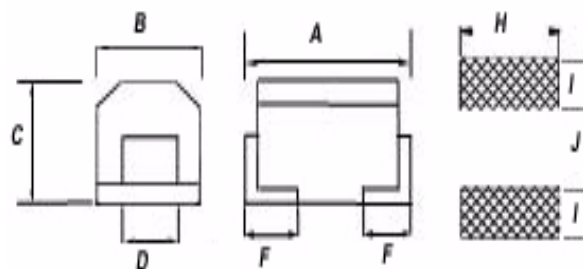


Fig 2

Mechanical Specifications - Standard

Type/Code	Figure	A Max.	B Max.	C Max.	D Ref.	E	F	G	H	I	J	Units
NL05	1	0.090 2.29	0.067 1.71	0.057 1.45	0.020 0.51	0.050 1.27	0.017 0.44	0.040 1.02	0.070 1.78	0.040 1.02	0.030 0.76	inches mm
NL08	1	0.115 2.92	0.110 2.79	0.083 2.10	0.047 1.20	0.080 2.03	0.018 0.45	0.060 1.52	0.100 2.54	0.040 1.02	0.050 1.27	inches mm
NL10	2	0.138 3.50	0.110 2.80	0.098 2.50	0.055 1.40	-	0.024 0.60	-	0.079 2.00	0.047 1.20	0.063 1.60	inches mm
NL12	2	0.189 4.80	0.138 3.50	0.138 3.50	0.071 1.80	-	0.035 0.90	-	0.110 2.80	0.059 1.50	0.118 3.00	inches mm
NL20	2	0.232 5.90	0.205 5.20	0.205 5.20	0.083 2.10	-	0.051 1.30	-	0.177 4.50	0.079 2.00	0.157 4.00	inches mm

Mechanical Specifications - High Current

Type/Code	Figure	A Max.	B Max.	C Max.	D Ref.	E	F	G	H	I	J	Units
NL08(C)	1	0.115 2.92	0.110 2.79	0.083 2.10	0.047 1.20	0.080 2.03	0.020 0.51	0.060 1.52	0.100 2.54	0.040 1.02	0.050 1.27	inches mm
NL12(C)	2	0.189 4.80	0.138 3.50	0.138 3.50	0.055 1.40	-	0.035 0.90	-	0.110 2.80	0.059 1.50	0.118 3.00	inches mm
NL20(C)	2	0.232 5.90	0.205 5.20	0.205 5.20	0.071 1.80	-	0.051 1.30	-	0.177 4.50	0.079 2.00	0.157 4.00	inches mm

NL Series — Ferrite Wirewound Inductor

Electrical Characteristics - NL05 Standard							
Part Number	L (μH)	Q Factor /Min	Test Freq (MHz)	Tolerance (%)	SRF (MHz)	DCR (Ω) Max	I DC (mA) Max
NL05-TR12	0.12	20	25.2	5, 10	700	0.18	1100
NL05-TR15	0.15	20	25.2	5, 10	900	0.18	1100
NL05-TR18	0.18	20	25.2	5, 10	600	0.20	800
NL05-TR22	0.22	20	25.2	5, 10	550	0.25	700
NL05-TR27	0.27	20	25.2	5, 10	550	0.30	700
NL05-TR33	0.33	20	25.2	5, 10	550	0.35	650
NL05-TR39	0.39	20	25.2	5, 10	420	0.35	600
NL05-TR47	0.47	20	25.2	5, 10	350	0.45	600
NL05-TR56	0.56	20	25.2	5, 10	300	0.45	550
NL05-TR68	0.68	20	25.2	5, 10	300	0.60	500
NL05-TR82	0.82	20	25.2	5, 10	300	0.55	500
NL05-T1R0	1.00	15	7.96	5, 10	280	0.80	450
NL05-T1R2	1.20	15	7.96	5, 10	280	0.90	400
NL05-T1R5	1.50	15	7.96	5, 10	250	1.05	350
NL05-T1R8	1.80	15	7.96	5, 10	120	0.90	350
NL05-T2R2	2.20	15	7.96	5, 10	110	1.10	320
NL05-T2R7	2.70	15	7.96	5, 10	70	1.20	320
NL05-T3R3	3.30	15	7.96	5, 10	60	1.50	300
NL05-T3R9	3.90	15	7.96	5, 10	55	1.60	300
NL05-T4R7	4.70	15	7.96	5, 10	45	2.10	200
NL05-T5R6	5.60	15	7.96	5, 10	40	2.30	250
NL05-T6R8	6.80	15	7.96	5, 10	36	2.70	200
NL05-T8R2	8.20	15	7.96	5, 10	33	3.30	180
NL05-T100	10.00	10	2.52	5, 10	30	4.00	180

Electrical Characteristics - NL08 Standard							
Part Number	L (μH)	Q Factor /Min	Test Freq (MHz)	Tolerance (%)	SRF (MHz)	DCR (Ω) Max	I DC (mA) Max
NL08-TR12	0.12	30	25.2	5, 10	800	0.10	1200
NL08-TR15	0.15	30	25.2	5, 10	800	0.15	1200
NL08-TR18	0.18	30	25.2	5, 10	600	0.20	1200
NL08-TR22	0.22	30	25.2	5, 10	600	0.25	1200
NL08-TR27	0.27	30	25.2	5, 10	425	0.30	1200
NL08-TR33	0.33	30	25.2	5, 10	400	0.20	1100
NL08-TR39	0.39	30	25.2	5, 10	375	0.40	1000
NL08-TR47	0.47	30	25.2	5, 10	350	0.45	900
NL08-TR56	0.56	30	25.2	5, 10	325	0.30	850
NL08-TR68	0.68	30	25.2	5, 10	300	0.40	800
NL08-TR82	0.82	30	25.2	5, 10	260	0.45	800
NL08-T1R0	1.00	25	7.96	5, 10	245	0.50	800
NL08-T1R2	1.20	25	7.96	5, 10	230	0.55	800
NL08-T1R5	1.50	25	7.96	5, 10	182	0.65	750

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Electrical Characteristics - NL08 Standard							
Part Number	L (μH)	Q Factor /Min	Test Freq (MHz)	Tolerance (%)	SRF (MHz)	DCR (Ω) Max	I DC (mA) Max
NL08-T1R8	1.80	25	7.96	5, 10	135	0.80	750
NL08-T2R2	2.20	25	7.96	5, 10	105	0.95	750
NL08-T2R7	2.70	25	7.96	5, 10	70	1.05	750
NL08-T3R3	3.30	25	7.96	5, 10	55	1.15	730
NL08-T3R9	3.90	25	7.96	5, 10	48	1.25	700
NL08-T4R7	4.70	25	7.96	5, 10	43	1.28	650
NL08-T5R6	5.60	25	7.96	5, 10	42	1.35	640
NL08-T6R8	6.80	25	7.96	5, 10	39	1.60	630
NL08-T8R2	8.20	25	7.96	5, 10	36	1.80	600
NL08-T100	10.00	25	2.52	5, 10	33	2.30	600
NL08-T120	12.00	20	2.52	5, 10	28	2.40	550
NL08-T150	15.00	20	2.52	5, 10	24	2.70	450
NL08-T180	18.00	20	2.52	5, 10	20	2.80	400
NL08-T220	22.00	20	2.52	5, 10	18	3.30	400
NL08-T270	27.00	20	2.52	5, 10	17	3.50	360
NL08-T330	33.00	20	2.52	5, 10	16	4.00	350
NL08-T390	39.00	18	2.52	5, 10	15	5.50	330
NL08-T470	47.00	18	2.52	5, 10	14	5.90	300
NL08-T560	56.00	18	2.52	5, 10	13	6.80	270
NL08-T680	68.00	18	2.52	5, 10	12	9.50	250
NL08-T820	82.00	18	2.52	5, 10	10	11.00	200
NL08-T101	100.00	12	1.00	5, 10	8	11.00	120

Electrical Characteristics - NL10 Standard							
Part Number	L (μH)	Q Factor /Min	Test Freq (MHz)	Tolerance (%)	SRF (MHz)	DCR (Ω) Max	I DC (mA) Max
NL10-T10N	0.010	15	100	10, 20	2500	0.13	450
NL10-T12N	0.012	17	100	10, 20	2300	0.14	450
NL10-T15N	0.015	19	100	10, 20	2100	0.16	450
NL10-T18N	0.018	21	100	10, 20	1900	0.18	450
NL10-T22N	0.022	23	100	10, 20	1700	0.20	450
NL10-T27N	0.027	23	100	10, 20	1500	0.22	450
NL10-T33N	0.033	25	100	10, 20	1400	0.24	450
NL10-T39N	0.039	25	100	10, 20	1300	0.27	450
NL10-T47N	0.047	26	100	10, 20	1200	0.30	450
NL10-T56N	0.056	26	100	10, 20	1100	0.33	450
NL10-T68N	0.068	27	100	10, 20	1000	0.36	450
NL10-T82N	0.082	27	100	10, 20	900	0.40	450
NL10-TR10	0.10	30	25.2	10	700	0.44	450
NL10-TR12	0.12	30	25.2	10	500	0.22	450
NL10-TR15	0.15	30	25.2	10	450	0.25	450
NL10-TR18	0.18	30	25.2	10	400	0.28	450
NL10-TR22	0.22	30	25.2	10	350	0.32	450

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Electrical Characteristics - NL10 Standard							
Part Number	L (μH)	Q Factor /Min	Test Freq (MHz)	Tolerance (%)	SRF (MHz)	DCR (Ω) Max	I DC (mA) Max
NL10-TR27	0.27	30	25.2	10	320	0.36	450
NL10-TR33	0.33	30	25.2	10	300	0.40	450
NL10-TR39	0.39	30	25.2	10	250	0.45	450
NL10-TR47	0.47	30	25.2	10	220	0.50	450
NL10-TR56	0.56	30	25.2	10	180	0.55	450
NL10-TR68	0.68	30	25.2	10	160	0.60	450
NL10-TR82	0.82	30	25.2	10	140	0.65	450
NL10-T1R0	1.0	30	7.96	10	95	0.70	400
NL10-T1R2	1.2	30	7.96	10	80	0.75	390
NL10-T1R5	1.5	30	7.96	10	70	0.85	370
NL10-T1R8	1.8	30	7.96	10	60	0.90	350
NL10-T2R2	2.2	30	7.96	10	50	1.00	320
NL10-T2R7	2.7	30	7.96	10	45	1.10	290
NL10-T3R3	3.3	30	7.96	10	40	1.20	260
NL10-T3R9	3.9	30	7.96	10	37	1.30	250
NL10-T4R7	4.7	30	7.96	10	32	1.50	220
NL10-T5R6	5.6	30	7.96	10	30	1.60	200
NL10-T6R8	6.8	30	7.96	10	27	1.80	180
NL10-T8R2	8.2	30	7.96	10	25	2.00	170
NL10-T100	10.0	30	2.52	10	20	2.10	150
NL10-T120	12.0	30	2.52	10	18	2.50	140
NL10-T150	15.0	30	2.52	10	17	2.80	130
NL10-T180	18.0	30	2.52	10	15	3.30	120
NL10-T220	22.0	30	2.52	10	14	3.70	110
NL10-T270	27.0	30	2.52	10	13	5.00	80
NL10-T330	33.0	30	2.52	10	12	5.60	70
NL10-T390	39.0	30	2.52	10	12	6.40	65
NL10-T470	47.0	30	2.52	10	10	7.00	60
NL10-T560	56.0	30	2.52	10	9	8.00	55
NL10-T680	68.0	30	2.52	10	9	9.00	50
NL10-T820	82.0	30	2.52	10	8	10.00	45
NL10-T101	100	20	0.796	10	7	11.00	40
NL10-T121	120	20	0.796	10	7	12.00	70
NL10-T151	150	20	0.796	10	6	15.00	65
NL10-T181	180	20	0.796	10	6	17.00	60
NL10-T221	220	20	0.796	10	5	21.00	50

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Electrical Characteristics - NL12 Standard							
Part Number	L (μH)	Q Factor /Min	Test Freq (MHz)	Tolerance (%)	SRF (MHz)	DCR (Ω) Max	I DC (mA) Max
NL12-TR10	0.10	28	25.2	10	700	0.44	450
NL12-TR12	0.12	30	25.2	10	500	0.22	450
NL12-TR15	0.15	30	25.2	10	450	0.25	450
NL12-TR18	0.18	30	25.2	10	400	0.28	450
NL12-TR22	0.22	30	25.2	10	350	0.32	450
NL12-TR27	0.27	30	25.2	10	320	0.36	450
NL12-TR33	0.33	30	25.2	10	300	0.40	450
NL12-TR39	0.39	30	25.2	10	350	0.45	450
NL12-TR47	0.47	30	25.2	10	220	0.50	450
NL12-TR56	0.56	30	25.2	10	180	0.55	450
NL12-TR68	0.68	30	25.2	10	160	0.60	450
NL12-TR82	0.82	30	25.2	10	140	0.67	450
NL12-T1R0	1.0	50	7.96	10	100	0.50	450
NL12-T1R2	1.2	50	7.96	10	80	0.55	430
NL12-T1R5	1.5	50	7.96	10	70	0.60	410
NL12-T1R8	1.8	50	7.96	10	60	0.65	390
NL12-T2R2	2.2	50	7.96	10	55	0.70	380
NL12-T2R7	2.7	50	7.96	10	50	0.75	370
NL12-T3R3	3.3	50	7.96	10	45	0.80	355
NL12-T3R9	3.9	50	7.96	10	40	0.90	330
NL12-T4R7	4.7	50	7.96	10	35	1.00	315
NL12-T5R6	5.6	50	7.96	10	33	1.10	300
NL12-T6R8	6.8	50	7.96	10	27	1.20	285
NL12-T8R2	8.2	50	7.96	10	25	1.40	270
NL12-T100	10	50	2.52	10	20	1.60	250
NL12-T120	12	50	2.52	10	18	2.00	225
NL12-T150	15	50	2.52	10	17	2.50	200
NL12-T180	18	50	2.52	10	15	2.80	190
NL12-T220	22	50	2.52	10	13	3.20	180
NL12-T270	27	50	2.52	10	12	3.60	170
NL12-T330	33	50	2.52	10	11	4.00	160
NL12-T390	39	50	2.52	10	10	4.50	150
NL12-T470	47	50	2.52	10	10	5.00	140
NL12-T560	56	50	2.52	10	9	5.50	135
NL12-T680	68	50	2.52	10	9	6.00	130
NL12-T820	82	50	2.52	10	8	7.00	120
NL12-T101	100	40	0.796	10	7	8.00	110
NL12-T121	120	40	0.796	10	6	8.00	110
NL12-T151	150	40	0.796	10	5	9.00	105
NL12-T181	180	40	0.796	10	5	9.50	102
NL12-T221	220	40	0.796	10	4	12.00	100
NL12-T271	270	40	0.796	10	3	12.00	92
NL12-T331	330	40	0.796	10	3	14.00	85
NL12-T391	390	40	0.796	10	3	16.00	80
NL12-T471	470	40	0.796	10	3	26.00	62
NL12-T561	560	30	0.796	10	2	30.00	50
NL12-T681	680	30	0.796	10	2	40.00	50
NL12-T821	820	30	0.796	10	2	35.00	30
NL12-T102	1000	30	0.252	10	2	46.00	30

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Electrical Characteristics - NL20 Standard

Part Number	L (μH)	Q Factor /Min	Test Freq (MHz)	Tolerance (%)	SRF (MHz)	DCR (Ω) Max	I DC (mA) Max
NL20-T122	1.2	30	0.252	5, 10	1.5	17	75
NL20-T152	1.5	30	0.252	5, 10	1.4	20	70
NL20-T182	1.8	30	0.252	5, 10	1.3	30	60
NL20-T222	2.2	30	0.252	5, 10	1.2	35	55
NL20-T272	2.7	30	0.252	5, 10	1.1	55	45
NL20-T332	3.3	30	0.252	5, 10	1.0	60	40
NL20-T392	3.9	30	0.252	5, 10	1.0	70	38
NL20-T472	4.7	30	0.252	5, 10	0.9	78	36
NL20-T562	5.6	30	0.252	5, 10	0.8	85	33
NL20-T682	6.8	30	0.252	5, 10	0.7	110	30
NL20-T822	8.2	30	0.252	5, 10	0.6	125	28
NL20-T103	10.0	20	0.0796	5, 10	0.5	150	25

Electrical Characteristics - NL08 High Current

Part Number	L (μH)	Q Factor /Min	Test Freq (MHz)	Tolerance (%)	SRF (MHz)	DCR (Ω) Max	I DC (mA) Max
NL08-TC1R0	1.0	22	7.96	5, 10	350	0.35	1500
NL08-TC1R2	1.2	25	7.96	5, 10	300	0.40	1200
NL08-TC1R5	1.5	25	7.96	5, 10	300	0.45	1200
NL08-TC1R8	1.8	25	7.96	5, 10	300	0.55	1100
NL08-TC2R2	2.2	22	7.96	5, 10	250	0.60	1050
NL08-TC2R7	2.7	25	7.96	5, 10	70	0.70	1000
NL08-TC3R3	3.3	22	7.96	5, 10	55	0.75	900
NL08-TC3R9	3.9	25	7.96	5, 10	50	0.80	900
NL08-TC4R7	4.7	22	7.96	5, 10	45	0.90	800
NL08-TC5R6	5.6	22	7.96	5, 10	42	1.05	750
NL08-TC6R8	6.8	22	7.96	5, 10	40	1.00	750
NL08-TC8R2	8.2	22	7.96	5, 10	36	1.30	700
NL08-TC100	10.0	20	2.52	5, 10	35	1.50	700
NL08-TC120	12.0	20	2.52	5, 10	30	1.70	550
NL08-TC150	15.0	20	2.52	5, 10	24	1.90	500
NL08-TC180	18.0	20	2.52	5, 10	20	2.60	470
NL08-TC220	22.0	20	2.52	5, 10	18	2.80	470
NL08-TC270	27.0	20	2.52	5, 10	17	3.40	400
NL08-TC330	33.0	20	2.52	5, 10	16	3.50	400

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Electrical Characteristics - NL12 High Current							
Part Number	L (μH)	Q Factor /Min	Test Freq (MHz)	Tolerance (%)	SRF (MHz)	DCR (Ω) Max	I DC (mA) Max
NL12-TC1R0	1.0	10	7.96	10	200	0.11	1050
NL12-TC1R2	1.2	10	7.96	10	160	0.12	1000
NL12-TC1R5	1.5	10	7.96	10	130	0.15	950
NL12-TC1R8	1.8	10	7.96	10	100	0.16	900
NL12-TC2R2	2.2	10	7.96	10	80	0.18	850
NL12-TC2R7	2.7	10	7.96	10	60	0.20	800
NL12-TC3R3	3.3	10	7.96	10	45	0.22	750
NL12-TC3R9	3.9	10	7.96	10	40	0.24	700
NL12-TC4R7	4.7	10	7.96	10	35	0.27	650
NL12-TC5R6	5.6	10	7.96	10	30	0.30	650
NL12-TC6R8	6.8	10	7.96	10	28	0.35	600
NL12-TC8R2	8.2	10	7.96	10	25	0.40	600
NL12-TC100	10.0	10	2.52	10	22	0.50	550
NL12-TC120	12.0	10	2.52	10	21	0.60	500
NL12-TC150	15.0	10	2.52	10	20	0.70	450
NL12-TC180	18.0	10	2.52	10	19	0.80	400
NL12-TC220	22.0	10	2.52	10	18	0.90	370
NL12-TC270	27.0	10	2.52	10	16	1.20	330
NL12-TC330	33.0	10	2.52	10	14	1.40	300
NL12-TC390	39.0	10	2.52	10	12	1.60	280
NL12-TC470	47.0	10	2.52	10	11.5	1.90	260
NL12-TC560	56.0	10	2.52	10	11	2.20	240
NL12-TC680	68.0	10	2.52	10	10	2.60	220
NL12-TC820	82.0	10	2.52	10	9	3.50	200
NL12-TC101	100.0	20	0.796	10	8	4.00	180
NL12-TC121	120.0	20	0.796	10	7.5	4.50	160
NL12-TC151	150.0	20	0.796	10	7	6.50	140
NL12-TC181	180.0	20	0.796	10	6.5	7.50	120
NL12-TC221	220.0	20	0.796	10	5.5	9.00	120
NL12-TC271	270.0	20	0.796	10	5	11.00	100
NL12-TC331	330.0	20	0.796	10	4	13.00	90
NL12-TC391	390.0	20	0.796	10	3.8	23.00	80
NL12-TC471	470.0	20	0.796	10	3.5	26.00	75
NL12-TC561	560.0	20	0.796	10	2.8	30.00	70
NL12-TC681	680.0	20	0.796	10	2.6	40.00	65
NL12-TC821	820.0	20	0.796	10	2.5	45.00	60
NL12-TC102	1000.0	20	0.796	10	2.3	50.00	55

NL Series — Ferrite Wirewound Inductor

Electrical Characteristics - NL12 High Current							
Part Number	L (μH)	Q Factor /Min	Test Freq (MHz)	Tolerance (%)	SRF (MHz)	DCR (Ω) Max	I DC (mA) Max
NL20-TC1R0	1.0	10	7.96	5, 10	95.0	0.03	1800
NL20-TC1R2	1.2	10	7.96	5, 10	70.0	0.035	1700
NL20-TC1R5	1.5	10	7.96	5, 10	55.0	0.04	1600
NL20-TC1R8	1.8	10	7.96	5, 10	47.0	0.05	1400
NL20-TC2R2	2.2	10	7.96	5, 10	42.0	0.06	1300
NL20-TC2R7	2.7	10	7.96	5, 10	37.0	0.07	1200
NL20-TC3R3	3.3	10	7.96	5, 10	34.0	0.08	1120
NL20-TC3R9	3.9	10	7.96	5, 10	32.0	0.09	1050
NL20-TC4R7	4.7	10	7.96	5, 10	29.0	0.11	950
NL20-TC5R6	5.6	10	7.96	5, 10	26.0	0.13	880
NL20-TC6R8	6.8	10	7.96	5, 10	24.0	0.15	810
NL20-TC8R2	8.2	10	7.96	5, 10	22.0	0.18	750
NL20-TC100	10.0	10	2.52	5, 10	19.0	0.21	690
NL20-TC120	12.0	10	2.52	5, 10	17.0	0.25	630
NL20-TC150	15.0	10	2.52	5, 10	16.0	0.30	580
NL20-TC180	18.0	10	2.52	5, 10	14.0	0.36	530
NL20-TC220	22.	10	2.52	5, 10	13.0	0.43	480
NL20-TC270	27.0	10	2.52	5, 10	11.5	0.52	440
NL20-TC330	33.0	10	2.52	5, 10	10.5	0.62	400
NL20-TC390	39.0	10	2.52	5, 10	9.5	0.72	370
NL20-TC470	47.0	10	2.52	5, 10	8.5	0.85	340
NL20-TC560	56.0	10	2.52	5, 10	7.8	1.00	310
NL20-TC680	68.0	10	2.52	5, 10	7.0	1.20	290
NL20-TC820	82.0	10	2.52	5, 10	6.4	1.40	270
NL20-TC101	100.0	20	0.796	5, 10	6.0	1.60	250
NL20-TC121	120.0	20	0.796	5, 10	5.4	1.90	230
NL20-TC151	150.0	20	0.796	5, 10	4.8	2.20	210
NL20-TC181	180.0	20	0.796	5, 10	4.4	2.80	190
NL20-TC221	220.0	20	0.796	5, 10	3.9	3.40	170
NL20-TC271	270.0	20	0.796	5, 10	3.6	4.20	155
NL20-TC331	330.0	20	0.796	5, 10	3.2	4.90	140
NL20-TC391	390.0	20	0.796	5, 10	2.9	5.80	130
NL20-TC471	470.0	20	0.796	5, 10	2.6	7.00	120
NL20-TC561	560.0	20	0.796	5, 10	2.4	8.50	110
NL20-TC681	680.0	20	0.796	5, 10	2.2	10.00	100
NL20-TC821	820.0	20	0.796	5, 10	2.0	13.00	90
NL20-TC102	1000.0	20	0.252	5, 10	1.8	15.00	85