

Technical Data Sheet

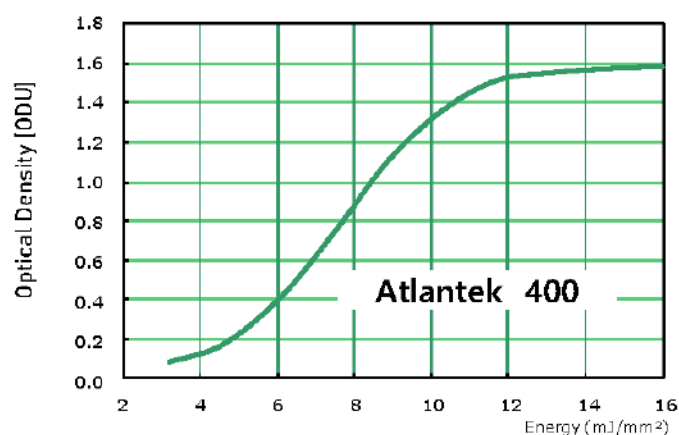
NTC AF 44

Applications	POS receipt, ATM receipt, Bank waiting list ticket and etc
Description	Standard sensitivity, BPA Free 10 years image life, 3 years storage life (Under proper storage conditions for thermal paper)

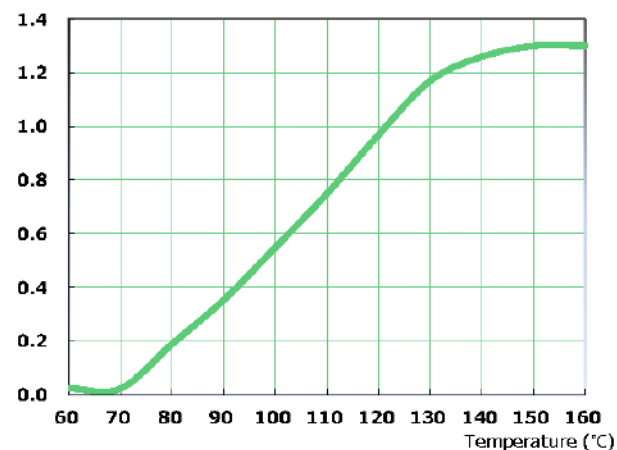
Physical Properties	Value	Unit	Test Method
Basis Weight	44 ± 5	g/m ²	ISO 536
	11.7 ± 1.3	lbs	17 × 22 - 500
Thickness	49 ± 5	um	ISO 534
	1.93 ± 0.20	mil	
Tensile Strength (MD)	>30	N/15mm	ISO 1924/2
Tensile Strength (CD)	>10	N/15mm	
Smoothness	>350	Sec	ISO 5627
Brightness(Thermal Side)	86 ± 3	%	ISO 2470

Preservation Properties		Printer : Okura Denki TH-M2/N1	
Item	Condition	Optical density before ageing	Optical density After ageing
Heat Resistance	60°C/24h	1.33	>1.00
Moisture Resistance	40°C/90%R.H/24h	1.33	>1.15
Light Resistance	5,000Lux, 24h	1.33	>1.25

► Dynamic Sensitivity



► Static Sensitivity



All figures mentioned above may be subject to technical changes.

Technical Data Sheet

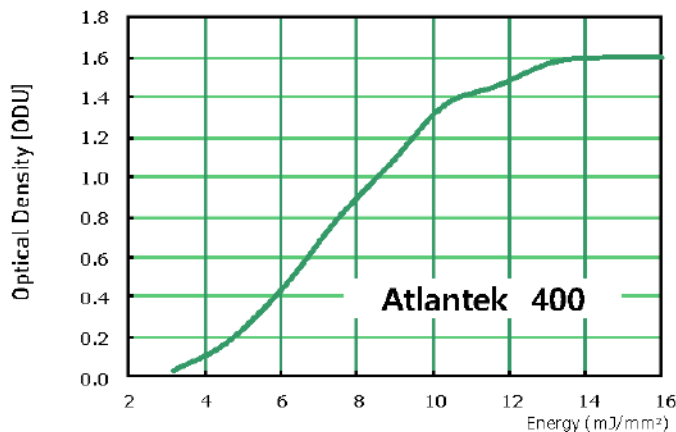
NTC AFH 58

Applications POS receipt, ATM receipt, Bank waiting list ticket and etc
Description Standard sensitivity, BPA Free
 10 years image life, 3 years storage life (Under proper storage conditions for thermal paper)

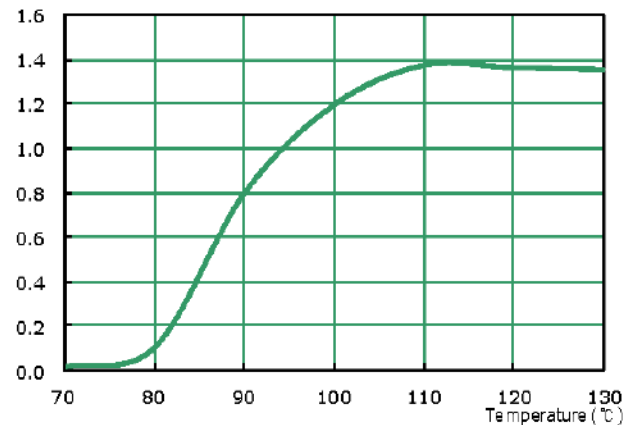
Physical Properties	Value	Unit	Test Method
Basis Weight	58 ± 5	g/m ²	ISO 536
	15.4 ± 1.3	Lbs	17 × 22 - 500
Thickness	71 ± 5	Um	ISO 534
	2.80 ± 0.20	Mil	
Tensile Strength (MD)	>39	N/15mm	ISO 1924/2
Tensile Strength (CD)	>12	N/15mm	
Smoothness	>200	Sec	ISO 5627
Brightness(Thermal Side)	86±3	%	ISO 2470

Preservation Properties		Printer : Okura Denki TH-M2/N1	
Item	Condition	Optical density before ageing	Optical density After ageing
Heat Resistance	60°C/24h	1.33	>1.00
Moisture Resistance	40°C/90%R.H/24h	1.33	>1.15
Light Resistance	5,000Lux, 24h	1.33	>1.25

► Dynamic Sensitivity



► Static Sensitivity



Technical Data Sheet

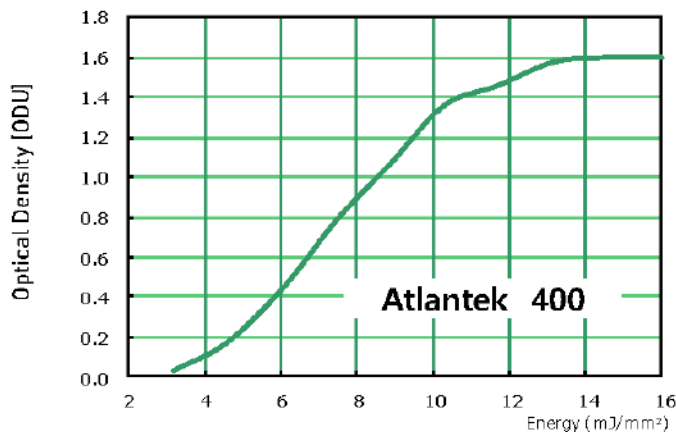
NTC AFH 70

Applications POS receipt, ATM receipt, Bank waiting list ticket and etc
Description Standard sensitivity, High bulk, BPA Free
 10 years image life, 3 years storage life (Under proper storage conditions for thermal paper)

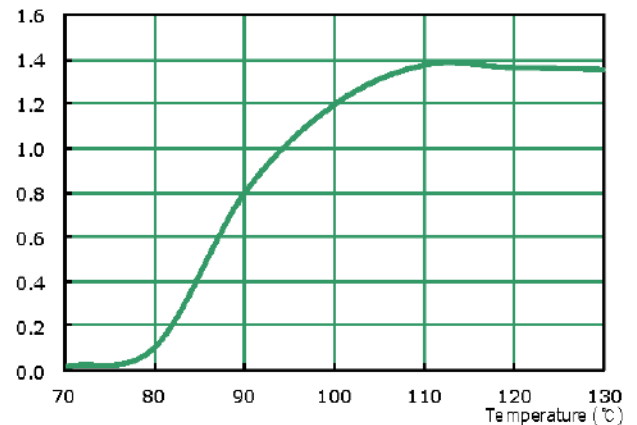
Physical Properties	Value	Unit	Test Method
Basis Weight	70 ± 5	g/m ²	ISO 536
	18.6 ± 1.3	Lbs	17 × 22 - 500
Thickness	87 ± 5	Um	ISO 534
	3.42 ± 0.20	Mil	
Tensile Strength (MD)	>42	N/15mm	ISO 1924/2
Tensile Strength (CD)	>15	N/15mm	
Smoothness	>150	Sec	ISO 5627
Brightness(Thermal Side)	86±3	%	ISO 2470

Preservation Properties		Printer : Okura Denki TH-M2/N1	
Item	Condition	Optical density before ageing	Optical density After ageing
Heat Resistance	60°C/24h	1.33	>1.00
Moisture Resistance	40°C/90%R.H/24h	1.33	>1.15
Light Resistance	5,000Lux, 24h	1.33	>1.25

► Dynamic Sensitivity



► Static Sensitivity



All figures mentioned above may be subject to technical changes.

Technical Data Sheet

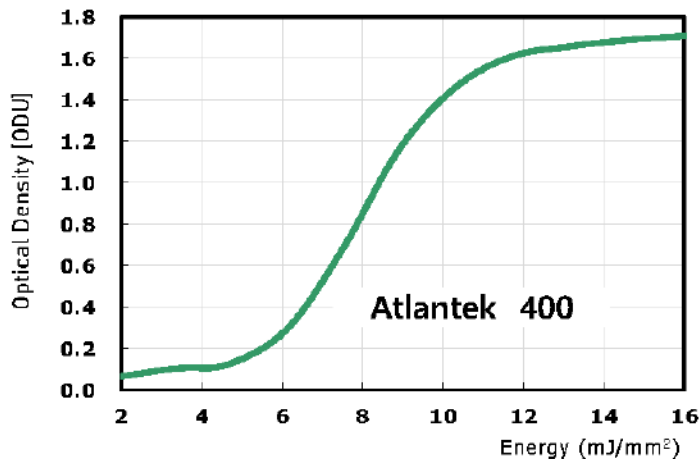
NTC HS AF 55

Applications Self-adhesive label, POS receipt, ATM receipt and etc
Description High sensitivity, Standard bar-code scanning, BPA Free
 10 years image life, 3 years storage life (Under proper storage conditions for thermal paper)

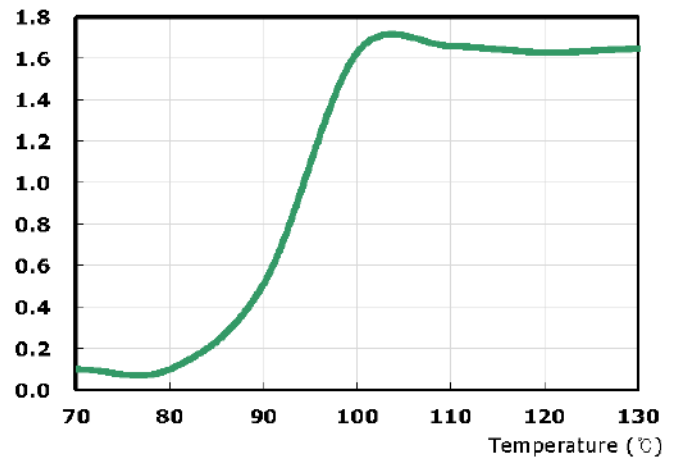
Physical Properties	Value	Unit	Test Method
Basis Weight	55 ± 5	g/m ²	ISO 536
	14.6 ± 1.3	Lbs	17 × 22 - 500
Thickness	59 ± 5	Um	ISO 534
	2.32 ± 0.20	Mil	
Tensile Strength (MD)	>39	N/15mm	ISO 1924/2
Tensile Strength (CD)	>12	N/15mm	
Smoothness	>350	Sec	ISO 5627
Brightness(Thermal Side)	86±3	%	ISO 2470

Preservation Properties		Printer : Okura Denki TH-M2/N1	
Item	Condition	Optical density before ageing	Optical density After ageing
Heat Resistance	60°C/24h	1.55	>1.26
Moisture Resistance	40°C/90%R.H/24h	1.55	>1.26
Light Resistance	5,000Lux, 24h	1.55	>1.45

► Dynamic Sensitivity



► Static Sensitivity



Technical Data Sheet

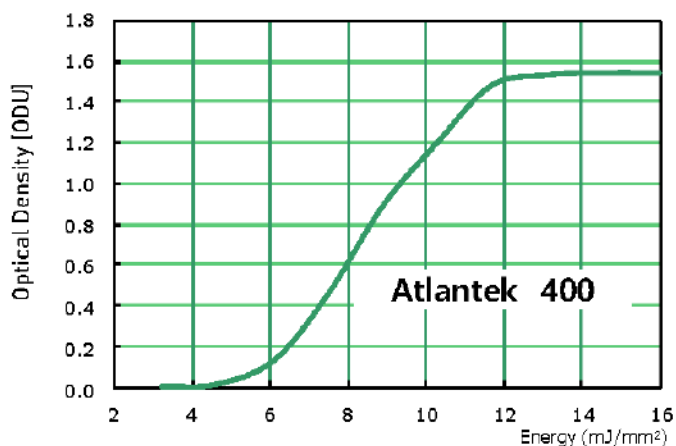
NTC HS AF 80

Applications Medical charts, POS receipt, Ticket and etc
Description High sensitivity, Standard bar-code scanning, BPA Free
 10 years image life, 3 years storage life (Under proper storage conditions for thermal paper)

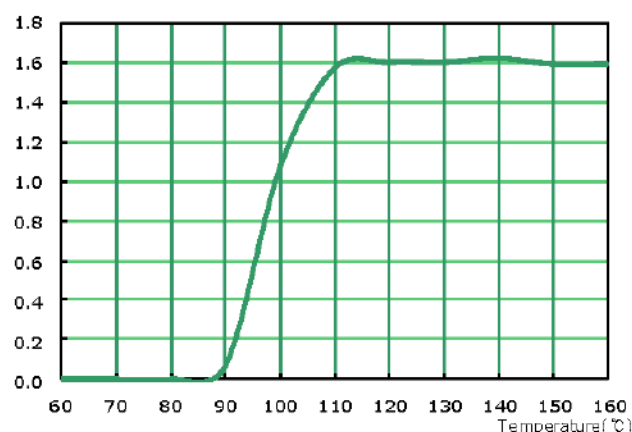
Physical Properties	Value	Unit	Test Method
Basis Weight	80 ± 5	g/m ²	ISO 536
	21.3 ± 1.3	Lbs	17 × 22 - 500
Thickness	88 ± 5	Um	ISO 534
	3.46 ± 0.20	Mil	
Tensile Strength (MD)	>59	N/15mm	ISO 1924/2
Tensile Strength (CD)	>22	N/15mm	
Smoothness	>230	Sec	ISO 5627
Brightness(Thermal Side)	86 ± 5	g/m ²	ISO 536

Preservation Properties		Printer : Okura Denki TH-M2/N1	
Item	Condition	Optical density before ageing	Optical density After ageing
Heat Resistance	60°C/24h	1.50	>1.30
Moisture Resistance	40°C/90%R.H/24h	1.50	>1.00
Light Resistance	5,000Lux, 24h	1.50	>1.40

► Dynamic Sensitivity



► Static Sensitivity



Technical Data Sheet

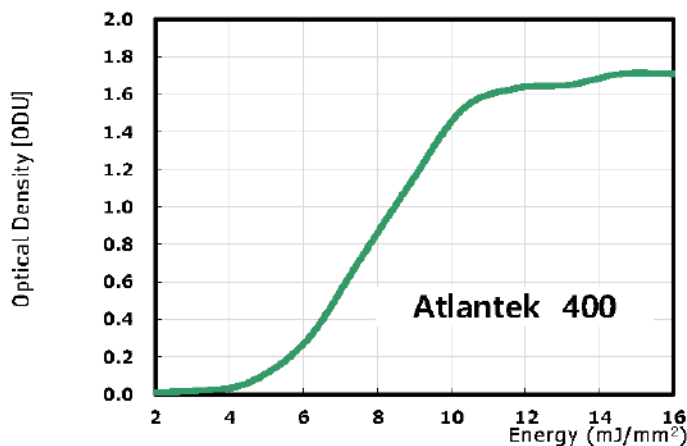
NTC HS AF 82

Applications Self-adhesive label, Medical charts, Game ticket, Clothing tag and etc
Description High sensitivity, Standard bar-code scanning, BPA Free
 10 years image life, 3 years storage life (Under proper storage conditions for thermal paper)

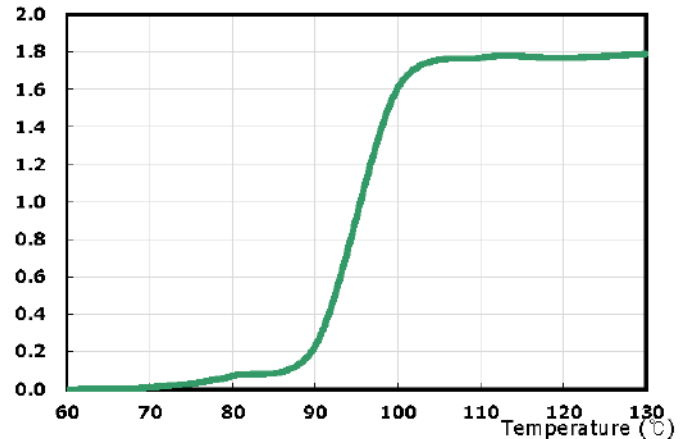
Physical Properties	Value	Unit	Test Method
Basis Weight	82 ± 5	g/m ²	ISO 536
	21.8 ± 1.3	Lbs	17 × 22 - 500
Thickness	92 ± 3	Um	ISO 534
	3.62 ± 0.12	Mil	
Tensile Strength (MD)	>73	N/15mm	ISO 1924/2
Tensile Strength (CD)	>20	N/15mm	
Smoothness	>180	Sec	ISO 5627
Brightness(Thermal Side)	86±3	%	ISO 2470

Preservation Properties		Printer : Okura Denki TH-M2/N1	
Item	Condition	Optical density before ageing	Optical density After ageing
Heat Resistance	60°C/24h	1.79	>1.25
Moisture Resistance	40°C/90%R.H/24h	1.79	>1.30
Light Resistance	5,000Lux, 24h	1.79	>1.65

► Dynamic Sensitivity



► Static Sensitivity



Technical Data Sheet

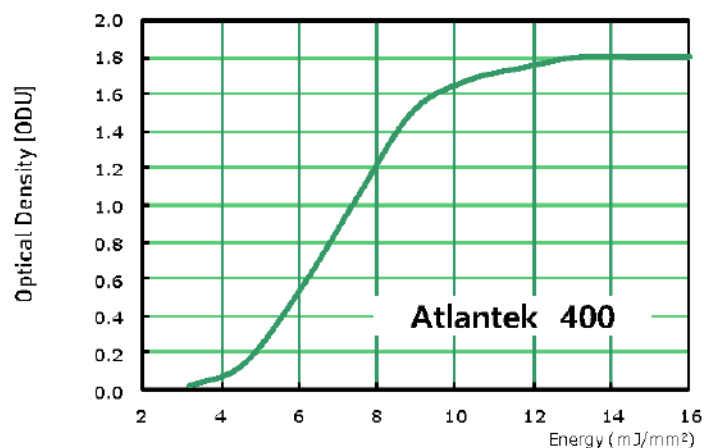
NTC HS AF 138

Applications Public transportation ticket, Parking ticket, Game ticket and etc
Description High sensitivity
 8 years image life, 3 years storage life (Under proper storage conditions for thermal paper)

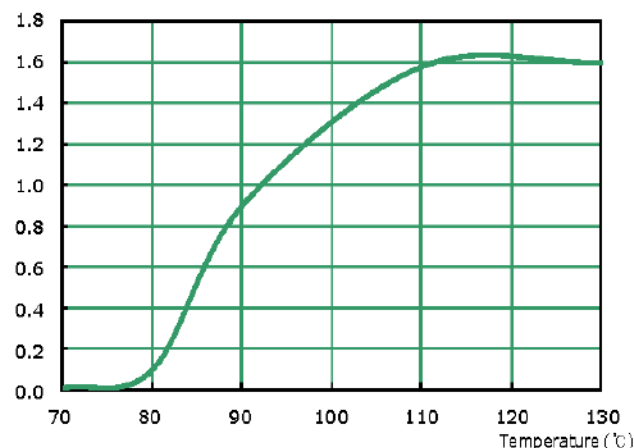
Physical Properties	Value	Unit	Test Method
Basis Weight	138 ± 7	g/m ²	ISO 536
	36.7 ± 1.9	Lbs	17 × 22 - 500
Thickness	145 ± 7	Um	ISO 534
	5.71 ± 0.28	Mil	
Tensile Strength (MD)	>98	N/15mm	ISO 1924/2
Tensile Strength (CD)	>59	N/15mm	
Smoothness	>130	Sec	ISO 5627
Brightness(Thermal Side)	86±3	%	ISO 2470

Preservation Properties		Printer : Okura Denki TH-M2/N1	
Item	Condition	Optical density before ageing	Optical density After ageing
Heat Resistance	60°C/24h	1.55	>1.10
Moisture Resistance	40°C/90%R.H/24h	1.55	>1.20
Light Resistance	5,000Lux, 24h	1.55	>1.45

► Dynamic Sensitivity



► Static Sensitivity



All figures mentioned above may be subject to technical changes.

Technical Data Sheet

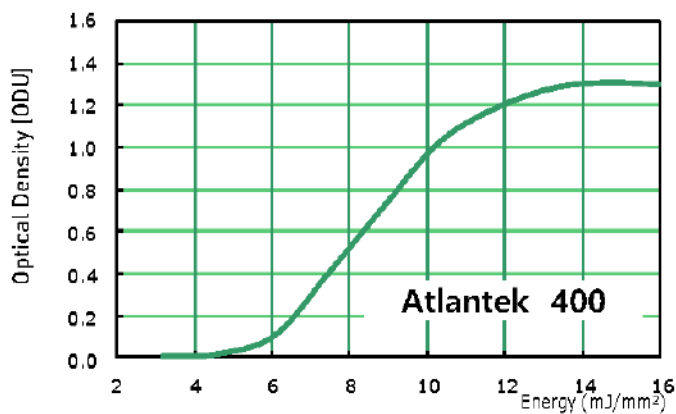
NTC PF 65

Applications POS receipt, ATM receipt and etc
Description Standard sensitivity, Phenol free
 10 years image life, 3 years storage life (Under proper storage conditions for thermal paper)

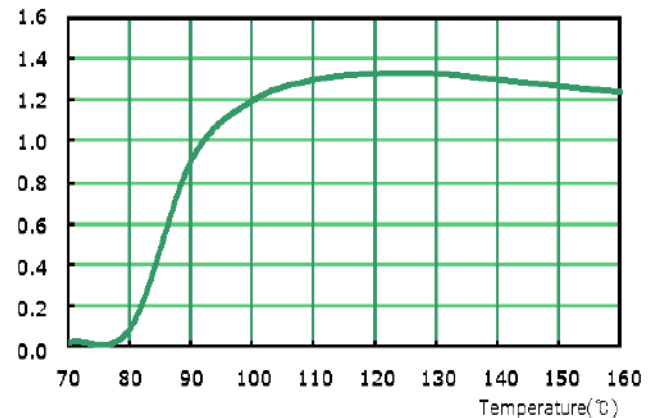
Physical Properties	Value	Unit	Test Method
Basis Weight	65 ± 5	g/m ²	ISO 536
	17.3 ± 1.3	Lbs	17 × 22 - 500
Thickness	73 ± 5	Um	ISO 534
	2.87 ± 0.20	Mil	
Tensile Strength (MD)	>54	N/15mm	ISO 1924/2
Tensile Strength (CD)	>15	N/15mm	
Smoothness	>320	Sec	ISO 5627
Brightness(Thermal Side)	89±3	%	ISO 2470

Preservation Properties		Printer : Okura Denki TH-M2/N1	
Item	Condition	Optical density before ageing	Optical density After ageing
Heat Resistance	60°C/24h	1.20	>0.90
Moisture Resistance	40°C/90%R.H/24h	1.20	>0.85
Light Resistance	5,000Lux, 24h	1.20	>1.10

► Dynamic Sensitivity



► Static Sensitivity



Technical Data Sheet

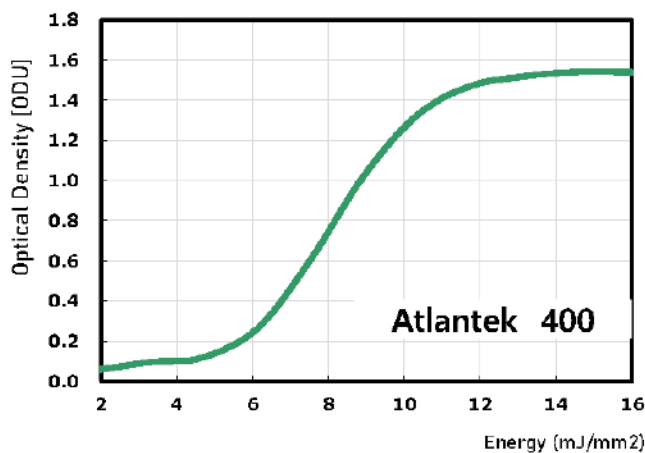
Hansol NTC EL AF 70

Applications Self-adhesive label
Description High sensitivity, Standard bar-code scanning, Non-top coated, BPA free
 10 years image life, 3 years storage life (Under proper storage conditions for thermal paper)

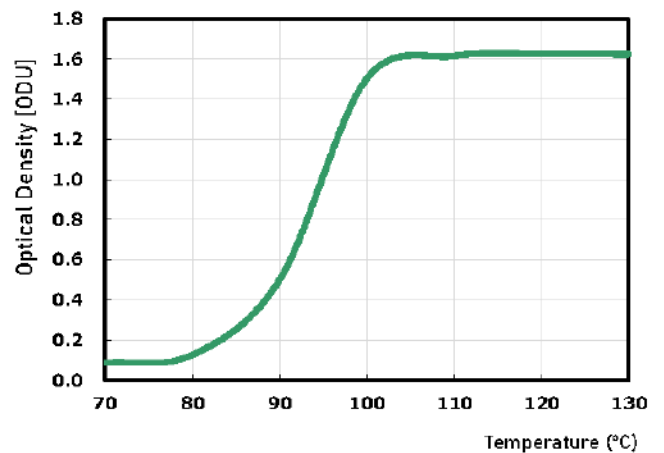
Physical Properties	Value	Unit	Test Method
Basis Weight	70 ± 5	g/m ²	ISO 536
	18.6 ± 1.3	Lbs	17 × 22 - 500
Thickness	77±5	Um	ISO 534
	3.03 ± 0.20	Mil	
Tensile Strength (MD)	>55	N/15mm	ISO 1924/2
Tensile Strength (CD)	>30	N/15mm	
Smoothness	>350	Sec	ISO 5627
Brightness(Thermal Side)	88±3	%	ISO 2470

Preservation Properties		Printer : Okura Denki TH-M2/N1	
Item	Condition	Optical Density Before Ageing	Optical Density After Ageing
Heat Resistance	60°C/24h	1.45	>1.25
Moisture Resistance	40°C/90%R.H/24h	1.45	>0.95
Light Resistance	5,000Lux, 24h	1.45	>1.35

► Dynamic Sensitivity



► Static Sensitivity



Technical Data Sheet

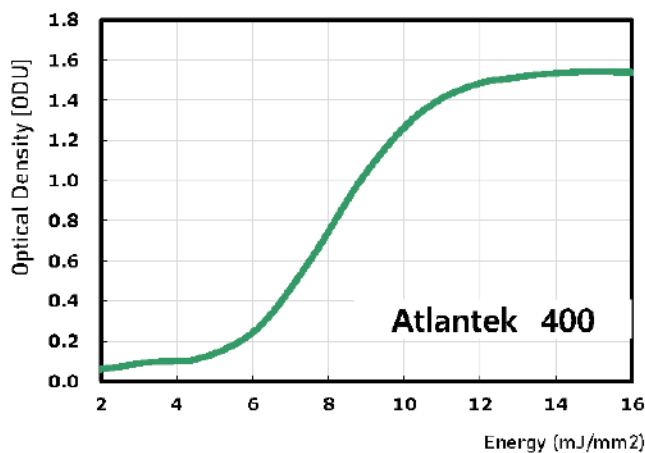
Hansol NTC EL AF Slim 65

Applications Self-adhesive label
Description High sensitivity, Standard bar-code Scanning, Non-top coated, BPA free
 10 years image life, 3 years storage life (Under proper storage conditions for thermal paper)

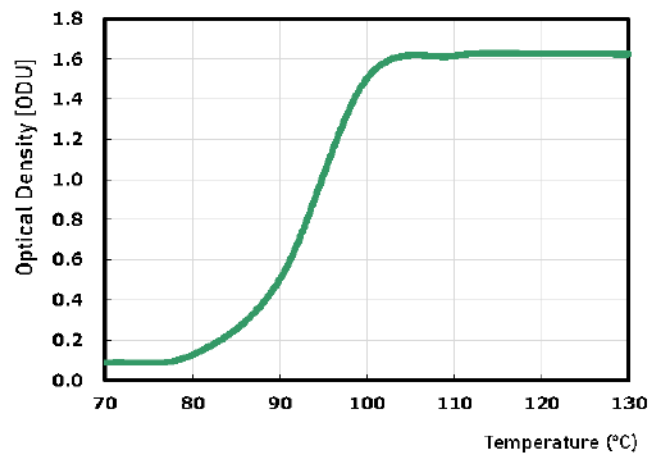
Physical Properties	Value	Unit	Test Method
Basis Weight	65 ± 5	g/m ²	ISO 536
	17.3 ± 1.3	Lbs	17 × 22 - 500
Thickness	70±5	Um	ISO 534
	2.75 ± 0.20	Mil	
Tensile Strength (MD)	>55	N/15mm	ISO 1924/2
Tensile Strength (CD)	>30	N/15mm	
Smoothness	>350	Sec	ISO 5627
Brightness(Thermal Side)	88±3	%	ISO 2470

Preservation Properties		Printer : Okura Denki TH-M2/N1	
Item	Condition	Optical Density Before Ageing	Optical Density After Ageing
Heat Resistance	60°C/24h	1.45	>1.25
Moisture Resistance	40°C/90%R.H/24h	1.45	>0.95
Light Resistance	5,000Lux, 24h	1.45	>1.35

► Dynamic Sensitivity



► Static Sensitivity



All figures mentioned above may be subject to technical changes.

Technical Data Sheet

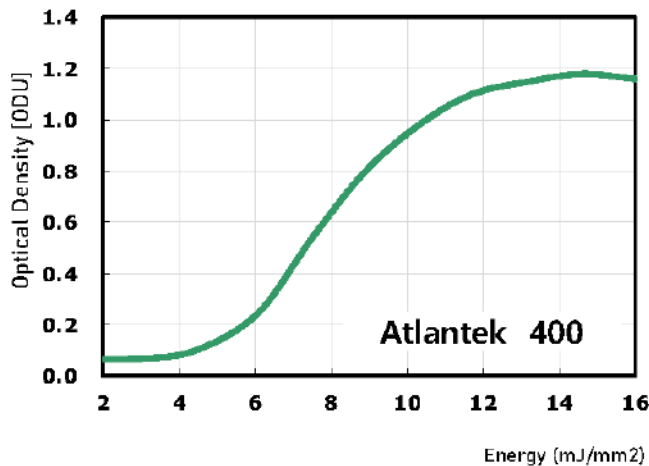
Hansol NTC EL PF 70 (Provisional)

Applications Self-adhesive label
Description High sensitivity, Standard bar-code Scanning, Non-top coated, Phenol free
 10 years image life, 3 years storage life (Under proper storage conditions for thermal paper)

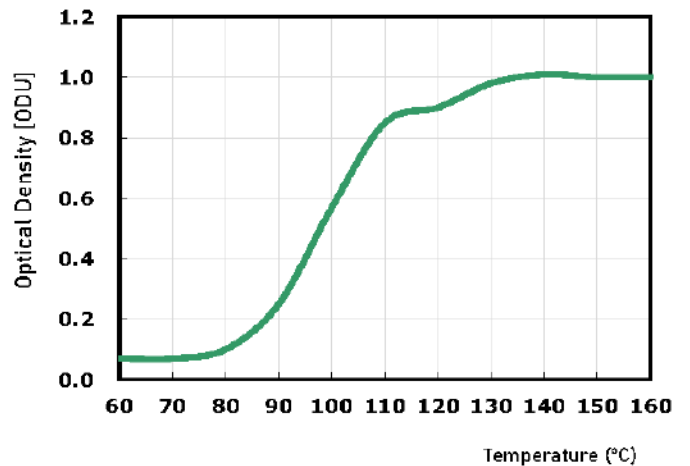
Physical Properties	Value	Unit	Test Method
Basis Weight	70±5	g/m ²	ISO 536
	18.6±1.3	Lbs	17 × 22 - 500
Thickness	77±5	Um	ISO 534
	3.03±0.20	Mil	
Tensile Strength (MD)	>55	N/15mm	ISO 1924/2
Tensile Strength (CD)	>30	N/15mm	
Smoothness	>350	Sec	ISO 5627
Brightness(Thermal Side)	89±3	%	ISO 2470

Preservation Properties		Printer : Okura Denki TH-M2/N1	
Item	Condition	Optical Density Before Ageing	Optical Density After Ageing
Heat Resistance	60°C/24h	1.20	>0.90
Moisture Resistance	40°C/90%R.H/24h	1.20	>0.80
Light Resistance	5,000Lux, 24h	1.20	>1.00

► Dynamic Sensitivity



► Static Sensitivity



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Technical Data Sheet

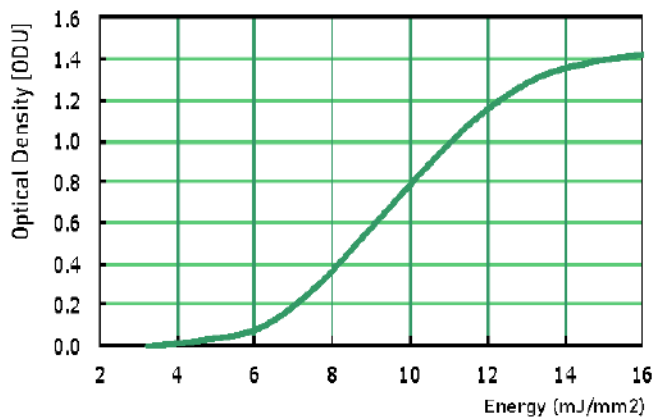
TC CL 65

Applications Self-adhesive label (Under 90°C heat resistance)
Description Bar-code scanning, Top coated, BPA free
 15 years image life, 3 years storage life (Under proper storage conditions for thermal paper)

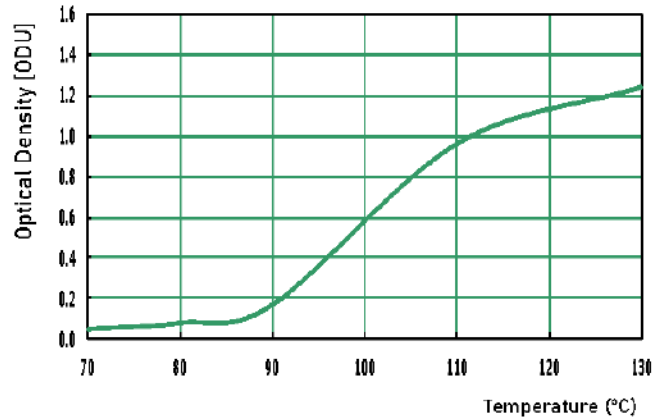
Physical Properties	Value	Unit	Test Method
Basis Weight	65±5	g/m ²	ISO 536
	17.3±1.3	Lbs	17 × 22 - 500
Thickness	70±5	Um	ISO 534
	2.76±0.20	Mil	
Tensile Strength (MD)	>60	N/15mm	ISO 1924/2
Tensile Strength (CD)	>30	N/15mm	
Smoothness	>700	Sec	ISO 5627
Brightness(Thermal Side)	85±3	%	ISO 2470

Preservation Properties		Printer : Okura Denki TH-M2/N1	
Item	Condition	Optical Density Before Ageing	Optical Density After Ageing
Heat Resistance	60°C/24h	1.40	>1.10
Moisture Resistance	40°C/90%R.H/24h	1.40	>0.95
Light Resistance	5,000Lux, 24h	1.40	>1.10

► Dynamic Sensitivity



► Static Sensitivity



All figures mentioned above may be subject to technical changes.

Technical Data Sheet

TC HL 74

Applications Self-adhesive label (Under 90°C heat resistance)

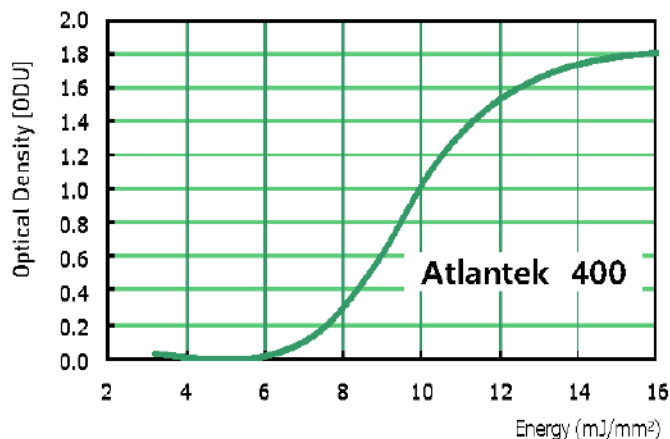
Description High resistance, High bar-code Scanning, Top Coated, BP free

15 years image life, 3 years storage life (Under proper storage conditions for thermal paper)

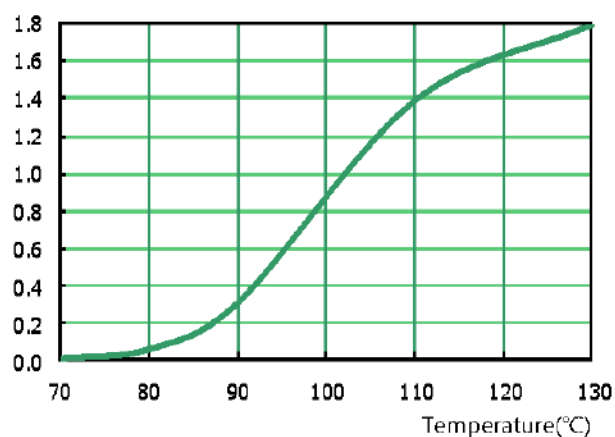
Physical Properties	Value	Unit	Test Method
Basis Weight	74 ± 5	g/m ²	ISO 536
	19.7 ± 1.3	Lbs	17 × 22 - 500
Thickness	78±5	Um	ISO 534
	3.07 ± 0.20	Mil	
Tensile Strength (MD)	>75	N/15mm	ISO 1924/2
Tensile Strength (CD)	>30	N/15mm	
Smoothness	>900	Sec	ISO 5627
Brightness(Thermal Side)	88±3	%	ISO 2470

Preservation Properties		Printer : Okura Denki TH-M2/N1	
Item	Condition	Optical Density Before Ageing	Optical Density After Ageing
Heat Resistance	60°C/24h	1.70	>1.50
Moisture Resistance	40°C/90%R.H/24h	1.70	>1.50
Light Resistance	5,000Lux, 24h	1.70	>1.50

► Dynamic Sensitivity



► Static Sensitivity



Technical Data Sheet

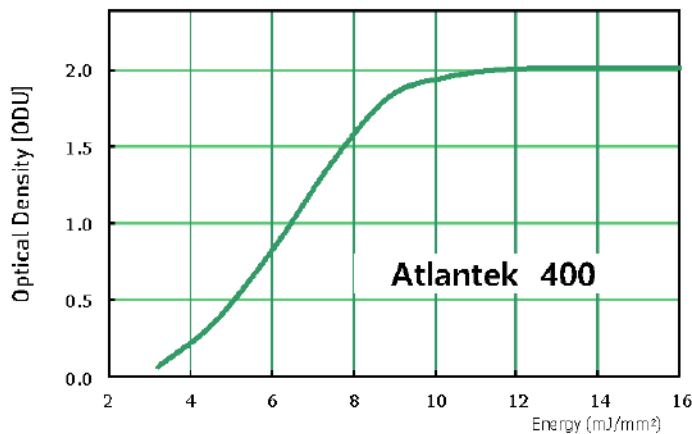
TC HR 65

Applications POS receipt, Post invoice, ATM receipt and etc
Description High resistance, High bar-code scanning, Top coated, BP Free
 15 years image life, 3 years storage life (Under proper storage conditions for thermal paper)

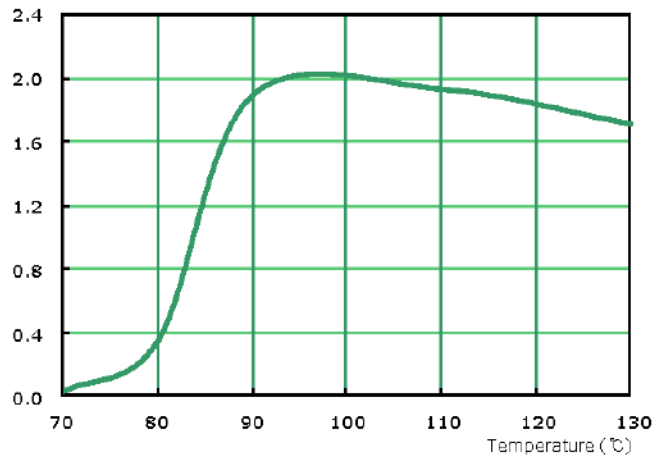
Physical Properties	Value	Unit	Test Method
Basis Weight	63 ± 5	g/m ²	ISO 536
	16.8 ± 1.3	Lbs	17 × 22 - 500
Thickness	67 ± 5	Um	ISO 534
	2.64 ± 0.20	Mil	
Tensile Strength (MD)	>42	N/15mm	ISO 1924/2
Tensile Strength (CD)	>15	N/15mm	
Smoothness	>600	Sec	ISO 5627
Brightness(Thermal Side)	93±3	%	ISO 2470

Preservation Properties		Printer : Okura Denki TH-M2/N1	
Item	Condition	Optical density before ageing	Optical density After ageing
Heat Resistance	60°C/24h	1.75	>1.51
Moisture Resistance	40°C/90%R.H/24h	1.75	>1.51
Light Resistance	5,000Lux, 24h	1.75	>1.69

► Dynamic Sensitivity



► Static Sensitivity



Technical Data Sheet

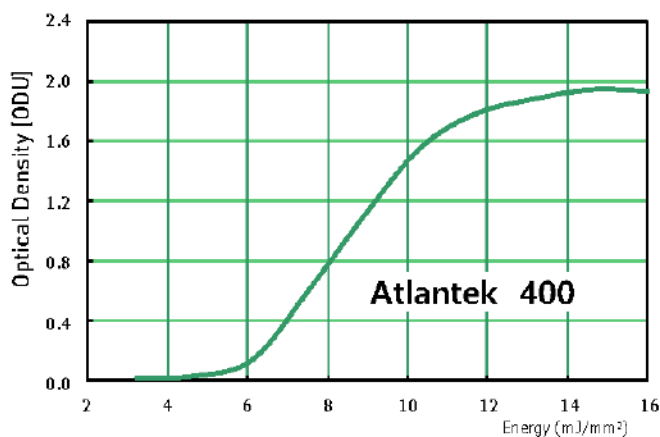
TC HR 100

Applications Ticket(game, public transportation, movie), Tag and etc
Description High resistance, High bar-code scanning, Top coated, BP Free
 15 years image life, 3 years storage life (Under proper storage conditions for thermal paper)

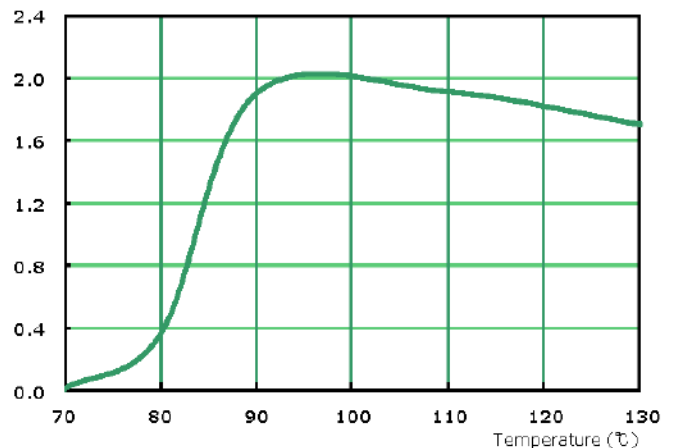
Physical Properties	Value	Unit	Test Method
Basis Weight	104 ± 5	g/m ²	ISO 536
	27.4 ± 1.3	Lbs	17 × 22 - 500
Thickness	110 ± 5	Um	ISO 534
	4.29 ± 0.20	Mil	
Tensile Strength (MD)	>73	N/15mm	ISO 1924/2
Tensile Strength (CD)	>44	N/15mm	
Smoothness	>800	Sec	ISO 5627
Brightness(Thermal Side)	93±3	%	ISO 2470

Preservation Properties		Printer : Okura Denki TH-M2/N1	
Item	Condition	Optical density before ageing	Optical density After ageing
Heat Resistance	60°C/24h	1.72	>1.25
Moisture Resistance	40°C/90%R.H/24h	1.72	>1.25
Light Resistance	5,000Lux, 24h	1.72	>1.40

► Dynamic Sensitivity



► Static Sensitivity



All figures mentioned above may be subject to technical changes.

Technical Data Sheet

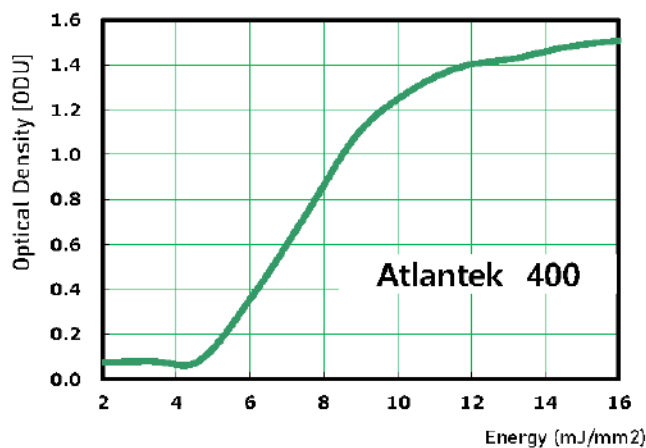
TC SL 65

Applications	Self-adhesive label, Lottery paper
Description	High resistance, High bar-code Scanning, Top coated, BP free 15 years image life, 3 years storage life (Under proper storage conditions for thermal paper)

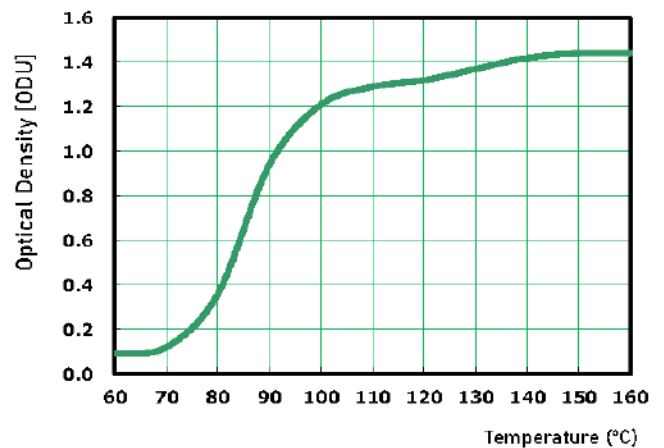
Physical Properties	Value	Unit	Test Method
Basis Weight	65±5	g/m ²	ISO 536
	17.3±1.3	Lbs	17 × 22 - 500
Thickness	70±5	Um	ISO 534
	2.76±0.20	Mil	
Tensile Strength (MD)	>55	N/15mm	ISO 1924/2
Tensile Strength (CD)	>30	N/15mm	
Smoothness	>900	Sec	ISO 5627
Brightness(Thermal Side)	88±3	%	ISO 2470

Preservation Properties		Printer : Okura Denki TH-M2/N1	
Item	Condition	Optical Density Before Ageing	Optical Density After Ageing
Heat Resistance	60°C/24h	1.50	>1.25
Moisture Resistance	40°C/90%R.H/24h	1.50	>1.25
Light Resistance	5,000Lux, 24h	1.50	>1.35

► Dynamic Sensitivity



► Static Sensitivity



Technical Data Sheet

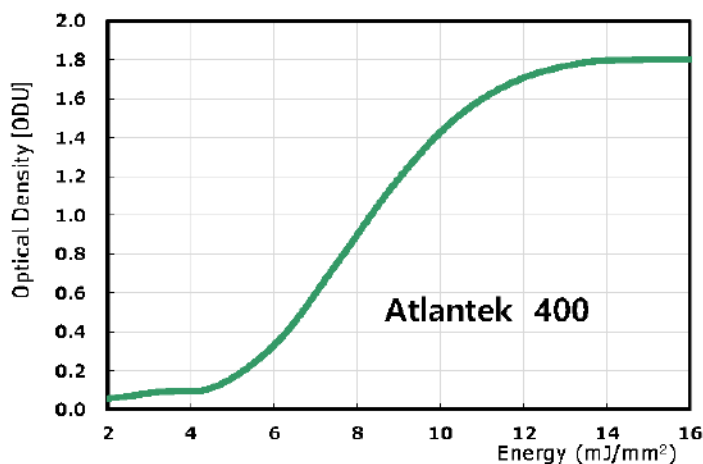
TC TL 76 (Provisional)

Applications Lottery, Gaming, Transportation and etc
Description High resistance, High bar-code scanning, Top coated, BP free
 15 years image life, 3 years storage life (Under proper storage conditions for thermal paper)

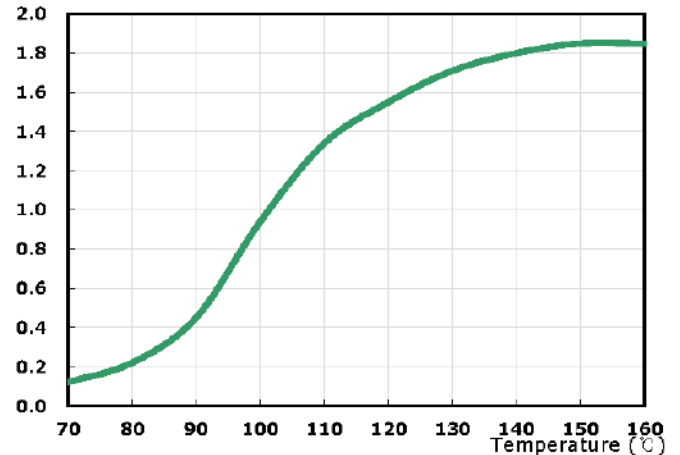
Physical Properties	Value	Unit	Test Method
Basis Weight	76 ± 5	g/m ²	ISO 536
	20.2 ± 1.3	Lbs	17 × 22 - 500
Thickness	81± 5	Um	ISO 534
	3.18 ± 0.20	Mil	
Tensile Strength (MD)	>59	N/15mm	ISO 1924/2
Tensile Strength (CD)	>24	N/15mm	
Smoothness	>1,000	Sec	ISO 5627
Brightness(Thermal Side)	88±3	%	ISO 2470

Preservation Properties		Printer : Okura Denki TH-M2/N1	
Item	Condition	Optical density before ageing	Optical density After ageing
Heat Resistance	60°C/24h	1.83	>1.77
Moisture Resistance	40°C/90%R.H/24h	1.82	>1.80
Light Resistance	5,000Lux, 24h	1.80	>1.54

► Dynamic Sensitivity



► Static Sensitivity



All figures mentioned above may be subject to technical changes.