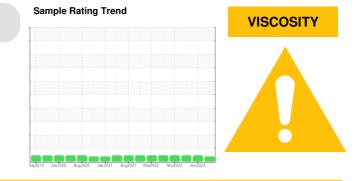


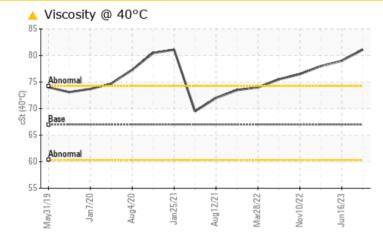
PROBLEM SUMMARY



Machine Id C-3 N (S/N 10241K65420993)

Refrigeration Compressor Fluid USPI 1009-68 SC (150 GAL)

COMPONENT CONDITION SUMMARY



RECOMMENDATION

The oil is near the end of it's useful service life and we recommend schedule an oil change. Resample at the next service interval to monitor.

PROBLEMATIC TEST RESULTS							
Sample Status				ABNORMAL	NORMAL	NORMAL	
Visc @ 40°C	cSt	ASTM D445	67	<u> </u>	79.0	78.0	

Customer Id: AMELONMN Sample No.: USP0001287 Lab Number: 05978270 Test Package: IND 2



To manage this report scan the QR code

To discuss the diagnosis or test data: Doug Bogart +1 (800)237-1369 x4016 <u>dougb@wearcheckusa.com</u>

To change component or sample information: Customer Service +1 1-800-237-1369 <u>customerservice@wearcheck.com</u>

RECOMMENDED A	CTIONS			
Action	Status	Date	Done By	Description
Service/change Fluid			?	The oil is nea

The oil is near the end of it's useful service life, recommend schedule an oil change.

HISTORICAL DIAGNOSIS





Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable. An increase in the viscosity is noted. Confirmed. The AN level is acceptable for this fluid.



view report

28 Feb 2023 Diag: Doug Bogart

16 Jun 2023 Diag: Doug Bogart



Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

NORMAL

10 Nov 2022 Diag: Jonathan Hester

Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.









OIL ANALYSIS REPORT

Sample Rating Trend

VISCOSITY

Machine Id C-3 N (S/N 10241K65420993) Component

Refrigeration Compressor Fluic USPI 1009-68 SC (150 GAL)

DIAGNOSIS

Recommendation

The oil is near the end of it's useful service life and we recommend schedule an oil change. Resample at the next service interval to monitor.

Wear

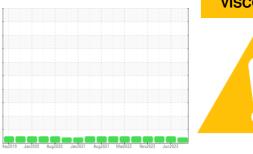
All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable.

Fluid Condition

The oil viscosity is higher than normal. Confirmed. The AN level is acceptable for this fluid.



Sample Number Client Info USP0001287 USP244525 USP244525 Sample Date Client Info 06 Oct 2023 15 Jun 2023 28 Feb 2023 Machine Age hrs Client Info 18255 15524 0 Oil Ageno K Client Info N/A N/A N/A Sample Status I Client Info N/A NORMAL NORMAL WEAR METALS method Imbibase current history1 history2 Iron ppm ASTM 051656 >2 0 0 0 Chromium ppm ASTM 051656 >2 0 0 0 Nickel ppm ASTM 051656 >2 0 0 0 Silver ppm ASTM 051656 >2 0 0 0 Gopper ppm ASTM 051656 >2 0 0 0 Tin ppm ASTM 051656 >2 0 0 0 Cadmium ppm ASTM 051656 >2 0 0 0 Gopper ppm ASTM 051656 >2 0 0 0 Rota ppm ASTM 051656 >2 0 0	SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 41427 38701 36287 Oil Age irs Client Info 18255 15524 0 Oil Changed Client Info N/A N/A N/A N/A Sample Status Imathematical Client Info MABNORMAL NORMAL NORMAL WEAR METALS method Imit/base current history1 history2 Iron ppm ASTM D5185m >2 0 0 0 Nickel ppm ASTM D5185m >2 0 0 -1 Silver ppm ASTM D5185m >2 0 0 -1 Lead ppm ASTM D5185m >2 0 0 0 Tin ppm ASTM D5185m >4 0 0 0 Copper ppm ASTM D5185m >4 0 0 0 Radium ppm ASTM D5185m 0 0 0 Radiumin	Sample Number		Client Info		USP0001287	USP244525	USP246310
Oil Age hrs Client Info 18255 15524 0 Oil Changed Client Info N/A N/A N/A N/A Sample Status o o ABNORMAL NORMAL NORMAL NORMAL WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >2 0 0 0 Othornium ppm ASTM D5185m >2 0 0 0 Nickel ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >3 0 0 0 Capper ppm ASTM D5185m >4 0 0 0 Yanadium ppm ASTM D5185m >4 0 0 0 Cadmium ppm ASTM D5185m >4 0 0 0 Roron pfm ASTM D5185m >0 0 0 0 <	Sample Date		Client Info		06 Oct 2023	16 Jun 2023	28 Feb 2023
Oil Changed Sample Status Client Info N/A N/A N/A N/A Sample Status Image of the status Method Imal/base current history1 history2 Iron ppm ASTN D5185m >2 0 0 0 Chromium ppm ASTN D5185m >2 0 0 0 Nickel ppm ASTN D5185m >2 0 0 0 Silver ppm ASTN D5185m >2 0 0 0 Silver ppm ASTN D5185m >2 0 0 0 Lead ppm ASTN D5185m >2 0 0 0 Cadmium ppm ASTN D5185m >2 0 0 0 Cadmium ppm ASTN D5185m >4 0 0 0 Cadmium ppm ASTN D5185m >4 0 0 0 Boron ppm ASTN D5185m 0 0 0 0 Magnesium ppm ASTN D5185m 0 0 0 0 Magnesium ppm ASTN D5185m 0 0 0 0 Magnesium ppm <td< th=""><th>Machine Age</th><th>hrs</th><th>Client Info</th><th></th><th>41427</th><th>38701</th><th>36287</th></td<>	Machine Age	hrs	Client Info		41427	38701	36287
Sample Status Image Status Method Imit/base current NORMAL NORMAL WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >8 0 0 0 Nickel ppm ASTM D5185m 0 0 -1 Titanium ppm ASTM D5185m >2 0 0 0 Silver ppm ASTM D5185m >2 0 0 0 Auminum ppm ASTM D5185m >2 0 0 0 Copper ppm ASTM D5185m >2 0 0 0 Cadmium ppm ASTM D5185m >4 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 Adaptese ppm ASTM D5185m 0 0 0 0 Magnesium pm ASTM D5185m 0 0 0	Oil Age	hrs	Client Info		18255	15524	0
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Chromium ppm ASTM D5185m >2 0 0 0 Nickel ppm ASTM D5185m 0 0 <1 Titanium ppm ASTM D5185m < 0 0 0 Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >2 0 0 0 Lead ppm ASTM D5185m >2 0 0 0 Vanadium ppm ASTM D5185m >4 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 Boron ppm ASTM D5185m 0 0 0 0 Galaium ppm ASTM D5185m 0 0 0 0 <t< th=""><th>WEAR METALS</th><th></th><th>method</th><th>limit/base</th><th>current</th><th>history1</th><th>history2</th></t<>	WEAR METALS		method	limit/base	current	history1	history2
Dromium ppm ASTM D5185m >2 0 0 0 Nickel ppm ASTM D5185m 0 0 <1 Titanium ppm ASTM D5185m < 0 0 0 Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >2 0 0 0 Lead ppm ASTM D5185m >2 0 0 0 Vanadium ppm ASTM D5185m >4 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 Boron ppm ASTM D5185m 0 0 0 0 Magnese ppm ASTM D5185m 0 0 0 0 Calcium ppm ASTM D5185m 0 0 0 0 <td< th=""><th>Iron</th><th>ppm</th><th>ASTM D5185m</th><th>>8</th><th>0</th><th>0</th><th>0</th></td<>	Iron	ppm	ASTM D5185m	>8	0	0	0
Nickel ppm ASTM D5185m 0 0 <1	Chromium		ASTM D5185m	>2		0	0
Titanium ppm ASTM 05185m <							<1
Silver ppm ASTM D5185m >2 0 0 . Aluminum ppm ASTM D5185m >3 0 0 . Lead ppm ASTM D5185m >2 0 0 0 Copper ppm ASTM D5185m >8 0 0 0 Vanadium ppm ASTM D5185m 2 0 0 0 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 Magnanese ppm ASTM D5185m 0 0 0 0 Phosphorus ppm ASTM D5185m 0 0 0 0 Sulfur ppm ASTM D5185m 0 0 0 0					-		
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Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 Manganese ppm ASTM D5185m 0 0 0 Magnesium ppm ASTM D5185m 0 0 0 Calcium ppm ASTM D5185m 0 0 0 Phosphorus ppm ASTM D5185m 0 0 0 Zinc ppm ASTM D5185m 0 0 0 0 Sulfur ppm ASTM D5185m 50 8 0 6 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 0 0 -1 Sodium ppm ASTM D5185m >20 0 0 1 Vater % ASTM D6304 >0.01 0.002 0.001 0.002 ppm Water ppm ASTM D7647	ADDITIVES		method	limit/base	current	history1	
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Marganese ppm ASTM D5185m 0 <1	Barium	ppm	ASTM D5185m		0	0	0
Magnesium ppm ASTM D5185m 0 0 0 Calcium ppm ASTM D5185m 0 0 0 Phosphorus ppm ASTM D5185m 0 0 0 Zinc ppm ASTM D5185m 0 0 0 0 Sulfur ppm ASTM D5185m 50 8 0 6 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 0 0 0 Sodium ppm ASTM D5185m >20 0 0 1 Vater % ASTM D5185m >20 0 0.001 0.002 ppm Water ppm ASTM D6304 >0.01 0.002 0.001 0.002 ppm Water ppm ASTM D647 >10000 5923 311 892 Particles >4µm ASTM D7647 >200 1619 87 265	Molybdenum	ppm	ASTM D5185m		0	0	0
Calcium ppm ASTM D5185m 0 0 0 Phosphorus ppm ASTM D5185m 0 0 0 Zinc ppm ASTM D5185m 0 0 0 Sulfur ppm ASTM D5185m 0 0 0 Sulfur ppm ASTM D5185m 50 8 0 6 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 0 0 <1 Sodium ppm ASTM D5185m >20 0 0 1 Water % ASTM D6304 >0.01 0.002 0.001 0.002 ppm Water ppm ASTM D6304 >100 21.7 5.4 21.6 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 >10000 5923 311 892 Particles >14µm	Manganese	ppm	ASTM D5185m		0	<1	0
Phosphorus ppm ASTM D5185m 0 0 0 Zinc ppm ASTM D5185m 50 8 0 6 Sulfur ppm ASTM D5185m 50 8 0 6 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 0 0 <1	Magnesium	ppm	ASTM D5185m		0	0	0
Zinc ppm ASTM D5185m 0 0 0 0 Sulfur ppm ASTM D5185m 50 8 0 6 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 0 0 <1 Sodium ppm ASTM D5185m >15 0 0 <1 Sodium ppm ASTM D5185m >20 0 0 1 Potassium ppm ASTM D5185m >20 0 0.001 0.002 ppm Water % ASTM D6304 >0.01 0.002 0.001 0.002 pm Water ppm ASTM D6304 >100 21.7 5.4 21.6 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 >10000 5923 311 892 Particles >14µm ASTM D7647 320 37	Calcium	ppm	ASTM D5185m		0	0	0
Sulfur ppm ASTM D5185m 50 8 0 6 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 0 0 <1 Sodium ppm ASTM D5185m >15 0 0 <1 Sodium ppm ASTM D5185m >20 0 0 1 Potassium ppm ASTM D5185m >20 0 0.001 0.002 Water % ASTM D6304 >0.01 0.002 0.001 0.002 pm Water ppm ASTM D6304 >100 21.7 5.4 21.6 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 >10000 5923 311 892 Particles >6µm ASTM D7647 >2500 1619 87 265 Particles >21µm ASTM D7647 >80 5 <t< th=""><th>Phosphorus</th><th>ppm</th><th>ASTM D5185m</th><th></th><th>0</th><th>0</th><th>0</th></t<>	Phosphorus	ppm	ASTM D5185m		0	0	0
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 0 0 <1 Sodium ppm ASTM D5185m >15 0 0 <1 Sodium ppm ASTM D5185m >20 0 0 1 Potassium ppm ASTM D6304 >0.01 0.002 0.001 0.002 ppm Water % ASTM D6304 >100 21.7 5.4 21.6 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 >10000 5923 311 892 Particles >6µm ASTM D7647 >2500 1619 87 265 Particles >4µm ASTM D7647 >20 37 7 23 Particles >21µm ASTM D7647 >80 5 2 6 Particles >38µm ASTM D7647 >20 0 0 0	Zinc	ppm	ASTM D5185m		0	0	0
Silicon ppm ASTM D5185m >15 0 0 <1	Sulfur	ppm	ASTM D5185m	50	8	0	6
Sodium ppm ASTM D5185m <1	CONTAMINANTS		method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 0 0 1 Water % ASTM D6304 >0.01 0.002 0.001 0.002 ppm Water ppm ASTM D6304 >100 21.7 5.4 21.6 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 >10000 5923 311 892 Particles >6µm ASTM D7647 >2500 1619 87 265 Particles >14µm ASTM D7647 >320 37 7 23 Particles >14µm ASTM D7647 >20 0 0 1 Particles >38µm ASTM D7647 >20 0 0 1 Particles >71µm ASTM D7647 >4 0 0 0 0 Oil Cleanliness Is0 4406 (c) >20/18/15 20/18/12 15/14/10 17/15/12	Silicon	ppm	ASTM D5185m	>15	0	0	<1
Water % ASTM D6304 >0.01 0.002 0.001 0.002 ppm Water ppm ASTM D6304 >100 21.7 5.4 21.6 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 >10000 5923 311 892 Particles >6µm ASTM D7647 >2500 1619 87 265 Particles >14µm ASTM D7647 >320 37 7 23 Particles >21µm ASTM D7647 >20 0 0 1 Particles >38µm ASTM D7647 >20 0 0 0 Oli Cleanliness ISO 4406 (c) >20/18/15 20/18/12 15/14/10 17/15/12	Sodium	ppm	ASTM D5185m		<1	0	0
ppm Water ppm ASTM D6304 >100 21.7 5.4 21.6 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 >10000 5923 311 892 Particles >6µm ASTM D7647 >2500 1619 87 265 Particles >14µm ASTM D7647 >320 37 7 23 Particles >21µm ASTM D7647 >80 5 2 6 Particles >38µm ASTM D7647 >20 0 0 1 Particles >71µm ASTM D7647 >4 0 0 0 Oil Cleanliness ISO 4406 (c) >20/18/15 20/18/12 15/14/10 17/15/12	Potassium	ppm	ASTM D5185m	>20	0	0	1
FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 >10000 5923 311 892 Particles >6µm ASTM D7647 >2500 1619 87 265 Particles >14µm ASTM D7647 >320 37 7 23 Particles >21µm ASTM D7647 >80 5 2 6 Particles >38µm ASTM D7647 >20 0 0 1 Particles >71µm ASTM D7647 >4 0 0 0 Oil Cleanliness ISO 4406 (c) >20/18/15 20/18/12 15/14/10 17/15/12	Water	%	ASTM D6304	>0.01	0.002	0.001	0.002
Particles >4μm ASTM D7647 >10000 5923 311 892 Particles >6μm ASTM D7647 >2500 1619 87 265 Particles >14μm ASTM D7647 >320 37 7 23 Particles >21μm ASTM D7647 >80 5 2 6 Particles >38μm ASTM D7647 >20 0 0 1 Particles >71μm ASTM D7647 >4 0 0 0 Oil Cleanliness ISO 4406 (c) >20/18/15 20/18/12 15/14/10 17/15/12	ppm Water	ppm	ASTM D6304	>100	21.7	5.4	21.6
Particles >6μm ASTM D7647 >2500 1619 87 265 Particles >14μm ASTM D7647 >320 37 7 23 Particles >21μm ASTM D7647 >80 5 2 6 Particles >38μm ASTM D7647 >20 0 0 1 Particles >71μm ASTM D7647 >4 0 0 0 Oil Cleanliness ISO 4406 (c) >20/18/15 20/18/12 15/14/10 17/15/12	FLUID CLEANLIN	ESS	method	limit/base	current	history1	history2
Particles >14μm ASTM D7647 >320 37 7 23 Particles >21μm ASTM D7647 >80 5 2 6 Particles >38μm ASTM D7647 >20 0 0 1 Particles >71μm ASTM D7647 >4 0 0 0 Oil Cleanliness ISO 4406 (c) >20/18/15 20/18/12 15/14/10 17/15/12	Particles >4µm		ASTM D7647	>10000	5923	311	892
Particles >21μm ASTM D7647 >80 5 2 6 Particles >38μm ASTM D7647 >20 0 0 1 Particles >71μm ASTM D7647 >4 0 0 0 Oil Cleanliness ISO 4406 (c) >20/18/15 20/18/12 15/14/10 17/15/12	Particles >6µm		ASTM D7647	>2500	1619	87	265
Particles >21μm ASTM D7647 >80 5 2 6 Particles >38μm ASTM D7647 >20 0 0 1 Particles >71μm ASTM D7647 >4 0 0 0 Oil Cleanliness ISO 4406 (c) >20/18/15 20/18/12 15/14/10 17/15/12	Particles >14µm		ASTM D7647	>320	37	7	23
Particles >38μm ASTM D7647 >20 0 0 1 Particles >71μm ASTM D7647 >4 0 0 0 Oil Cleanliness ISO 4406 (c) >20/18/15 20/18/12 15/14/10 17/15/12	Particles >21µm		ASTM D7647	>80	5	2	6
Particles >71μm ASTM D7647 >4 0 0 0 Oil Cleanliness ISO 4406 (c) >20/18/15 20/18/12 15/14/10 17/15/12							
Oil Cleanliness ISO 4406 (c) >20/18/15 20/18/12 15/14/10 17/15/12			ASTM D7647	>4	0	0	0
FLUID DEGRADATION method limit/base current history1 history2						15/14/10	17/15/12
	FLUID DEGRADA	TION	method	limit/base	current	history1	history2

Acid Number (AN)

mg KOH/g ASTM D974 0.005

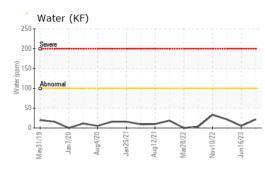
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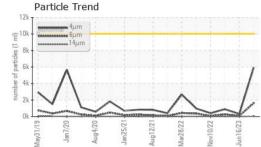
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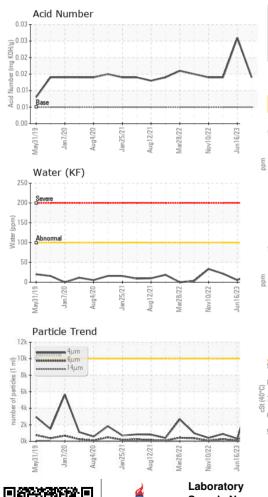
0.014



OIL ANALYSIS REPORT

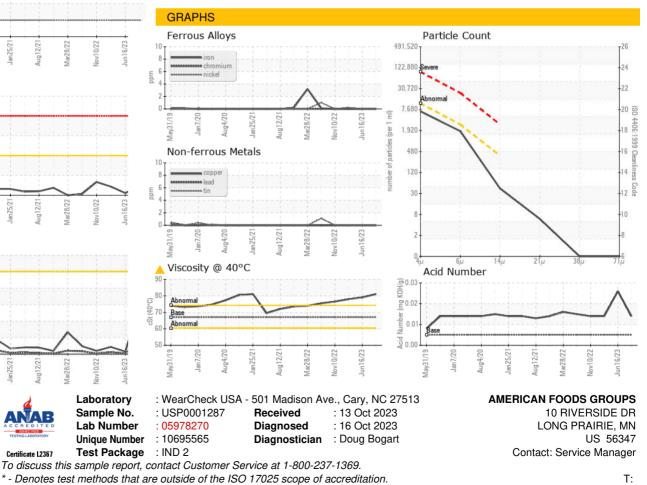






MOLIAI			11 11 11			
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.01	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPERT	IES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	67	A 81.1	79.0	78.0
SAMPLE IMAGES		method	limit/base	current	history1	history2
Color						2) 1) 2)2)215 2)3)1 2)2) 2)2) 2)2)2 2)2)2 2)2)2 2)2)2 2)2)2 2)2)2 2)2)2 2)2 2)2)2 2 2)2 2 2 2)2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
					1	10000

Bottom



* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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