

## Suncare Research Laboratories, LLC

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### SRL2008-048: Final Report

#### Formula 2

May 28, 2008

- Title:** Evaluation of the Static Sun Protection Factor (SPF) of Sunscreen-Containing Formulas
- Objective:** To measure the Static SPF of over-the-counter (OTC) sunscreen-containing formulas and the 8% Homosalate Standard (HMS) in human volunteers according to the FDA Final Monograph<sup>1</sup>
- Test Product:** Formula 2
- Study Design:** Non-randomized, with blinded evaluations
- Study Dates:** March 3, 2008 to May 23, 2008
- Results:** Twenty-three subjects completed the test. The mean SPF of the test product, Formula 2, was 20.8 (n=23, SD=1.9). The test product meets FDA Final Monograph requirements for labeling as Static SPF 20.<sup>1</sup>
- Adverse Experiences:** One Adverse Experience was reported that was not related to the test product.
- Sponsor:** Kabana Skin Care LLC  
470 Cougar Court  
Lafayette, CO 80026  
  
Erik Kreider, CEO  
(406) 396-0088  
[erik@kabanaskincare.com](mailto:erik@kabanaskincare.com)
- Investigator:** Joseph W. Stanfield, M. S.

**Summary:**

On the first day of the study each subject received a series of UV doses from a xenon arc solar simulator to an unprotected site on the mid-back. On the second day the minimal erythema dose (MED) was determined as the lowest UV dose which produced mild erythema reaching the borders of the exposure site. Then 100 mg of the test product and 100 mg of the HMS standard were applied to separate, adjacent 50 cm<sup>2</sup> areas of the mid-back (8% Homosalate (HMS) Standard provided by Cosmetech Laboratories, Inc., Fairfield, NJ).

The test product had an expected SPF of 20 and the HMS standard sunscreen had an expected SPF of 4. After a 15-minute drying period UV doses ranging from 0.76 to 1.32 times the product of the MED and 20 were administered to the test sunscreen-protected area. UV doses ranging from 0.64 to 1.56 times the product of the MED and 4 were administered to the HMS standard sunscreen-protected area. A series of UV doses were also administered to a second unprotected site. On the third day the MED was determined for the sunscreen-protected sites and the unprotected site. The SPF of each sunscreen was calculated as the ratio of the MED for each sunscreen-protected site to the final MED.

Detailed procedures for determining the Static Sun Protection Factor according to the FDA Sunscreen Monograph<sup>1</sup> are described in the protocol in APPENDIX 1.

Details of calibrations for Lamps 1, 2, 7, 8, 10, 13 and 14 are shown in APPENDIX 2.

According to the FDA Final Monograph<sup>1</sup>, the labeled SPF must be calculated as follows:

Labeled SPF = Mean SPF Value – A  
Rounded down to the nearest whole number  
For SPF values  $\geq 31$ , the test product may be labeled as SPF 30 +

Where A =  $ts/\sqrt{n}$  and represents the 95% confidence interval.

t = upper 5% of student's t distribution  
s = Standard Deviation  
n = Number of Subjects

For the panel to be valid, the SPF of the HMS standard sunscreen must fall within the standard deviation range of the expected SPF (i.e.  $4.47 \pm 1.279$ ) and the 95% confidence interval for the mean SPF of the HMS standard sunscreen must contain the value 4.

**Results:**

Twenty-three subjects, 10 men and 13 women, who provided written, informed consent, completed the study. Subjects included 2 with skin type I, 10 with skin type II and 11 with skin type III.<sup>1</sup> Ages ranged from 18 to 57 years and the mean age was 40.0 (n=23, SD=10.9). Subject demographic and static SPF results are listed in Table 1.

The mean static SPF of the test product, Formula 2, was 20.8 (n=23, SD=1.9). The mean SPF – A, rounded down to the nearest whole number was 20.

The mean SPF of the HMS standard was 4.6 (n=23, SD=0.5). The 95% Confidence Interval included the value 4.

**Protocol Deviations:**

Eight Protocol Deviations were reported. UV exposures were given in an incorrect test site for Subject 01. The product was incorrectly applied (not shaken properly) to Subjects 17, 18, 24, 25 and 29. Data for these subjects were not included in study results. Evaluations for Subjects 07 and 09 were performed outside of the 22 to 24 hour time frame. These did not affect study results.

**Enrollment:**

Subjects 01, 17, 18, 24, 25 and 29 completed the study but their data were not used due to procedural error. Subject 26 was disqualified due to family emergency. Subject 27 was disqualified due to Adverse Experience (see below). Subject 34 was disqualified due to tan. Subject 35 was lost to follow-up. All of the other subjects enrolled in the test completed all of the test procedures.

**Adverse Experience:**

One Adverse Experience was reported that was not related to the test product. Subject 27 received a stab wound to the Left Arm. The subject was treated and released at Forsyth Hospital ER with stitches to Left Arm and an unknown antibiotic. The subject was disqualified from the study due to use of potentially prohibited medication.

Table 1. Subject Demographic and Static SPF Data for Formula 2 and HMS Standard

**SRL2008-048: Kabana Skin Care, LLC**

Subject #	SRL ID#	Initials	Age	Sex	Skin Type	Lamp	Final MED (sec)	Formula 2	HMS Standard	
								SPF	SPF	
02	1547	MCH	53	F	III	10	13	20.00	4.38	
04	1777	JSR	43	M	III	10	13	20.00	4.00	
07	1527	JOB	35	M	III	10	13	21.38	5.00	
08	886	TDS	31	F	III	14	13	23.00	5.00	
09	1177	JML	48	M	III	8	13	17.38	4.00	
13	1654	LLF	41	F	III	8	16	17.38	4.00	
14	1163	TCD	57	M	II	2	13	21.38	4.38	
15	1677	RDM	57	M	II	8	13	21.38	5.00	
16	1547	MCH	53	F	III	10	13	21.38	5.00	
19	1053	KAL	44	F	II	1	16	21.44	5.06	
20	1820	CAH	21	M	II	8	10	17.40	4.40	
21	506	TLW	37	M	II	10	16	21.44	4.06	
22	1489	CDS	35	F	III	1	13	18.62	6.23	
23	1267	LAM	36	F	II	2	13	20.31	3.85	
28	1383	BKD	43	F	I	14	8	21.75	4.50	
30	1679	RMB	18	M	III	10	10	21.40	4.40	
31	1305	SBS	46	M	II	10	10	21.40	5.00	
32	1682	RAA	23	F	III	10	13	20.00	4.38	
33	1703	JLA	26	F	II	14	10	22.60	4.70	
36	1589	RCP	42	M	III	10	10	21.40	5.00	
37	1375	TAR	44	F	II	7	13	21.38	4.38	
38	1555	RLB	42	F	II	8	13	20.00	4.38	
39	303	SFC	46	F	I	10	10	26.00	4.70	
Mean=								20.8	Mean=	4.6
SD=								1.9	SD=	0.5
n=								23	n=	23
A=								0.7	Mean + 95% CI=	5
Mean - A=								20	Mean - 95% CI=	4

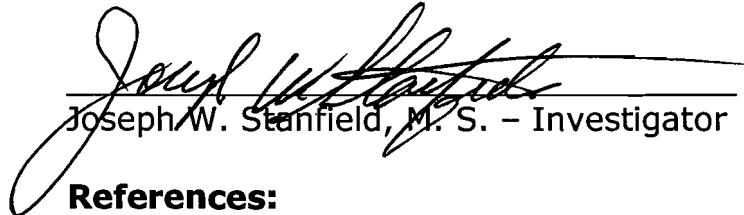
Subject 01 disqualified - procedural error  
 Subject 17 disqualified - procedural error  
 Subject 18 disqualified - procedural error  
 Subject 24 disqualified - procedural error  
 Subject 25 disqualified - procedural error  
 Subject 26 disqualified - unable to complete d/t family emergency  
 Subject 27 disqualified - unable to complete d/t AE  
 Subject 29 disqualified - procedural error  
 Subject 34 disqualified - too tan  
 Subject 35 disqualified - lost to follow-up

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**Conclusion:**

The test product, Formula 2, meets the FDA Final Monograph requirements for labeling as Static SPF 20.<sup>1</sup>

  
\_\_\_\_\_  
Joseph W. Stanfield, M. S. – Investigator

5/28/08  
Date

**References:**

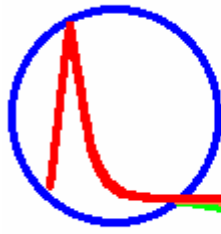
1. U. S. Food and Drug Administration. Sunscreen Drug Products for Over-the-Counter Human Use; Final Monograph; 21CFR Parts 310, 352, 700 and 740. Federal Register 64 (98) May 21, 1999. pp. 27666-27693

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## **APPENDIX 1**

## **PROTOCOL**



**Suncare Research Laboratories, LLC**

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**SRL2008-048: Evaluation of the Static Sun Protection Factor (SPF) of Sunscreen-Containing Formulas**

February 13, 2008

**Objective:** To measure the static sun protection factor (SPF) of over-the-counter (OTC) sunscreen-containing formulas according to the FDA Final Monograph<sup>1</sup>

**Test Products:**

1. Formula 2 – Expected SPF 20
2. Formula 3 – Expected SPF 20

**Subjects:** Initially 3 male and/or female volunteers with Fitzpatrick skin types I, II and/or III<sup>1</sup> will be enrolled for each test product. With permission from the Sponsor, up to 23 additional subjects may be enrolled to satisfy FDA Final Monograph requirements

**Sponsor:** Kabana Skin Care LLC  
470 Cougar Court  
Lafayette, CO 80026

Erik Kreider, CEO  
(406) 396-0088  
[erik@kabanaskincare.com](mailto:erik@kabanaskincare.com)

**Investigator:** Joseph W. Stanfield, M. S.

**Introduction:**

The FDA Final Monograph<sup>1</sup> describes the procedures for determining the Static sun protection factor. The Static SPF is defined by the ratio of the minimal erythema dose of ultraviolet radiation for sunscreen-protected skin to that for unprotected skin. The minimal erythema dose (MED) is the dose of ultraviolet (UV) radiation that produces mild erythema (sunburn) with clearly defined borders, 22 to 24 hours after administration. Timed UV radiation doses are administered using a xenon arc lamp that simulates solar radiation. The technician will monitor the output of the solar simulator using a calibrated radiometer to insure that the erythemally effective irradiance is constant. Readings of erythemally effective irradiance will be recorded.

**Objective:**

The objective of this test is to measure the static SPF of two over-the-counter (OTC) sunscreen formulas according to the FDA Final Monograph<sup>1</sup>.

**Test Products:**

1. Formula 2 – Expected SPF 20
2. Formula 3 – Expected SPF 20

**Study Design:**

This is a non-randomized study with blinded evaluations.

**Subjects:**

Subjects will include up to 25 healthy male and female volunteers per product with skin types I, II and/or III<sup>1</sup> (See below) for each test product.

<b>Skin Type</b>	<b>Erythema and Tanning Reactions to First Sun Exposure in Spring*</b>
I	Always burns easily; never tans
II	Always burns easily; tans minimally
III	Burns moderately; tans gradually
IV	Burns minimally; always tans well

\*Subject-reported responses to 1 hour of summer sun exposure

Subjects must report any OTC or prescription medication used within the week before and during study participation. Subjects must also satisfy the following criteria:

Inclusion Criteria:

- At least 18 years old, providing legally effective, written informed consent
- Willing and able to keep study appointments and follow instructions
- Good general health
- Willing to avoid sun and tanning lamp exposure during the study

Exclusion Criteria:

- History of abnormal response to UV radiation or sensitivity to any ingredient of the test products
- Sunburn, suntan, active dermal lesions, uneven skin tones or any condition such as nevi, blemishes or moles that might interfere with study procedures
- Use of any medication that might affect study results, e.g. photosensitizers, antihistamines, analgesics or anti-inflammatory drugs
- Pregnancy, nursing or any condition that might increase the risk of study participation
- Tanning bed or tanning lamp exposure in the last 3 months

**Study Procedures:**

Following is a schematic of the study:

<b>Subject Requirements</b>	<b>Before Study</b>	<b>During Study</b>		
No tanning lamp exposure	3 months			
Report all medication	1 week			
<b>Study Procedures</b>		<b>Day 1</b>	<b>Day 2</b>	<b>Day 3</b>
Informed Consent		X		
Determine if subject qualified by medical history		X		
Administer UV doses for MED		X		
Evaluate responses; Determine MED			X	
Apply test product for Static SPF			X	
Apply HMS Standard for static SPF			X	
Administer UV doses to protected and unprotected sites			X	
Evaluate UV responses; Determine SPFs				X
<b>Identify concomitant medications</b>		X	X	X
<b>Assess compliance</b>			X	X
<b>Monitor for Adverse Experiences</b>		X	X	X

All procedures (product application, UV doses and evaluations) will be performed with the subjects in the same position.

## **Day 1**

### Subject Enrollment

Prospective subjects will report to the testing laboratory and receive a complete explanation of study procedures. If they desire to participate and agree to the conditions of the study, subjects will sign a written, witnessed consent form and a permission to release personal health information form, and will provide a brief medical history. The back, between the belt-line and shoulder blades, will be examined for uneven skin tones and blemishes, using a Woods lamp. The technician will complete the Subject History Form and qualified subjects will be enrolled in the study. Subject numbers will be assigned in the order of study enrollment.

### MED Dose Administration

A timed series of 5 UV doses, increasing in 25 percent increments, will be administered to the mid-back, just below the shoulder blades and above the belt-line. UV doses for the MED, the time doses are completed and lamp readings will be recorded on the MED form.

Subjects will be instructed to avoid UV exposure, photosensitizers, analgesics, antihistamines and anti-inflammatory medications and to return to the testing laboratory 22 to 24 hours after completion of UV doses.

## **Day 2**

### MED Determination

Subjects will return to the testing laboratory within 22 to 24 hours after completion of MED doses for evaluation of responses and will be questioned non-directively to assess compliance, to identify concomitant medications and to monitor for adverse experiences. A trained evaluator will grade responses of the UV exposed sites, under warm fluorescent or tungsten illumination of 450 to 550 lux, using the grading scale shown in Table 1.

Table 1. Grading Scale for Erythema Responses to UV Doses Administered to Untreated Sites and Sunscreen Treated Sites

0	No erythema response
1	Minimally perceptible erythema
2	Mild erythema with clearly defined borders
3	Moderate erythema with sharp borders*
4	Dark red erythema with sharp borders*
5	Dark red erythema with sharp borders and possible edema*
6	Intense erythema with sharp borders and edema*

\*If moderate, dark red or intense erythema does not reach borders of exposed site, an explanation will be provided in the comments section of evaluation forms

The MED will be determined as the first exposure site in the series that produces an erythema grade of at least 2 (Mild erythema with clearly defined borders). The progression of erythema grades must be consistent with the UV doses administered.

If there are pronounced tanning responses, the subject is probably Type IV and not qualified for the study. In this case the subject will be dropped from the study and replaced. Grades for each UV-exposed site, any comments and the evaluation time will be recorded.

If required for practical scheduling, the subject may leave the testing laboratory at this point and return within one week for completion of Day 2 procedures.

#### Application of Products for SPF Determination

If the study participation of the subject has been interrupted, the subject will be questioned non-directively to assess compliance, identify concomitant medications and monitor for adverse experiences.

The study technician will draw 50 cm<sup>2</sup> rectangles in the designated locations on the subject's back between the belt-line and shoulder blades using a template and an indelible marker. The technician will then apply 100 mg of each test product in its designated rectangle and 100 mg of the HMS standard in an adjacent rectangle. The sunscreens will be applied by "spotting" the material across the area and gently spreading, using a finger cot, until a uniform film is applied to the entire area.

The technician will document product formula designations, test site locations and application time.

UV Doses for Static SPF Determinations

After at least 15 minutes, the technician will administer a series of 7 progressively increasing, timed UV doses to the sites treated with the test products. The dose series will be determined by the product of the expected SPF of each test product, the subject's MED and the following number:

Expected SPF	Multiple of expected SPF and Subject MED						
	< 8	0.64	0.80	0.90	1.00	1.10	1.25
≥ 8 to 15	0.69	0.83	0.91	1.00	1.09	1.20	1.44
≥ 15	0.76	0.87	0.93	1.00	1.07	1.15	1.32

The technician will document UV doses, times completed and lamp effective irradiance readings for each test product.

UV Doses for the HMS Standard

At least 15 minutes after the application of the HMS standard, the technician will administer 7 progressively increasing timed UV doses to the HMS standard site. The dose series will be determined by the product of the HMS standard SPF (4), the subject MED and the following numbers:

Multiple of Subject MED and HMS Standard (SPF=4)						
0.64	0.80	0.90	1.00	1.10	1.25	1.56

The technician will document the UV doses for the HMS standard, time completed and the lamp effective irradiance reading.

UV Doses for Repeat MED Determination

The technician will administer a timed series of 5 UV doses, increasing by 25 percent increments, to an unprotected area of the mid-back. The series of 5 doses will include the original MED in the center as follows:

Multiple of Original MED				
0.64	0.80	1.00	1.25	1.56

UV doses for the repeat MED, time completed and the lamp effective irradiance reading will be recorded.

The technician will instruct subjects to return to the testing laboratory for evaluation within 22 to 24 hours after completion of the UV doses for the static SPF, HMS standard SPF and the repeat MED.

### **Day 3**

#### Evaluation of Responses to UV Doses for Static SPF and Repeat MED

Subjects will return to the testing laboratory and will be questioned non-directively to assess compliance, to identify concomitant medications and to monitor for adverse experiences. A trained evaluator, who did not participate in product applications or administration of UV doses will grade all sites that received UV doses, using the scale shown in Table 1. The technician who applied the test product and administered the UV doses may assist the evaluator, but the technician may not influence the evaluator in the grading of UV responses. Grades of the responses of all sunscreen-treated sites will be recorded.

#### **SPF Computation:**

The technician will determine the repeat MED as above and compute the SPF values for each subject.

The final MED will be the repeat MED, unless the repeat MED cannot be determined. In that case the initial MED will be used as the final MED.

SPF values will be calculated as the ratio of the MED for sunscreen-protected sites to the final MED.

The labeled SPF must be calculated as follows, based on 20 subjects:

Mean SPF Value – A  
(rounded down to nearest whole number)  
Obtained values >30 may be labeled as SPF 30 +

Where  $A = ts/\sqrt{n}$

t = upper 5% of student's t distribution  
s = Standard Deviation  
n = Number of Subjects

For the panel to be valid the SPF of the HMS standard sunscreen must fall within the standard deviation range of the expected SPF (i.e.  $4.47 \pm 1.279$ ) and the 95% confidence interval for the mean SPF of the HMS standard sunscreen must contain the value 4.

**Adverse Experiences:**

Any adverse experiences will be documented in the subject file and immediate medical attention will be obtained if appropriate. Any serious adverse experience defined as life-threatening or requiring emergency measures will be reported to the sponsor within 24 hours. All adverse experiences will be reported to the sponsor.

**Replacement of Subjects:**

Any subject who is disqualified due to non-compliance or adverse experience will be replaced. Subjects whose data do not permit successful computation of SPF values will be replaced.

**Indemnification**

The Sponsor agrees to indemnify, defend, and hold harmless Suncare Research Laboratories, LLC, from any demands, costs, or judgements arising out of or connected with the non-negligent use of the test material or performance of activities to be carried out pursuant to this Protocol. Suncare Research Laboratories, LLC shall notify the Sponsor within 10 working days after receipt of notice of injury, claim or lawsuit.

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**Study Fee:**

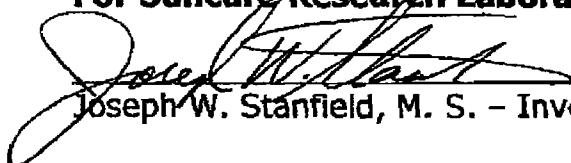
The fee for the above testing will be \$150 per completed test subject per test product. The fee for this test will be invoiced upon completion of the test and submission of the final report. Payment terms will be Net 30 days.

**Investigator's Report:**

At the completion of the study, the investigator will provide the sponsor a tabulation of subject demographics; erythema grades; MEDs; SPF values; descriptive and inferential statistics and conclusions.


**Protocol Approval:**

**For Suncare Research Laboratories, LLC**

  
\_\_\_\_\_  
Joseph W. Stanfield, M. S. - Investigator

2/28/08  
Date

**For Kabana Skin Care, LLC:**

  
\_\_\_\_\_  
Erik Kreider, MS, MBA  
CEO

2/28/08  
Date

**Reference:**

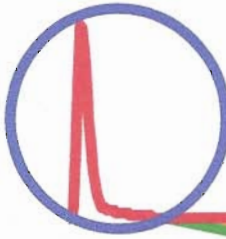
1. U. S. Food and Drug Administration. Sunscreen Drug Products for Over-the-Counter Human Use; Final Monograph; 21CFR Parts 310, 352, 700 and 740. Federal Register 64 (98) May 21, 1999. pp. 27666-27693

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## **APPENDIX 2**

### **LAMP CALIBRATIONS**



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**April 17, 2008**

## Calibration of Lamps 1, 2, 7, 8, 10 and 14 (Calibration Date)

Range (nm)	Lamp 1 S/N 4533 Filter 010806 Bulb 322470 (1/19/08)	Lamp 2 S/N 4534 Filter 05144 Bulb 322474 (4/07/08)	Lamp 7 S/N 9533 Filter 080105 Bulb 323771 (4/16/08)	Lamp 8 S/N 9560 Filter 121805 Bulb 323769 (4/16/08)	Lamp 10 S/N 9655 Filter 081806C Bulb 323774 (4/14/08)	Lamp 14 S/N 11476 Filter 07072-2 Bulb 323006 (12/9/07)	Requirements	
	Colipa 2006 [1] %	FDA 2007 [2] %						
<b>Relative % contribution to erythral effectiveness</b>								
<290	0.01	0.00	0.087%	0.012%	0.019%	0.01	<0.1	<0.1
290-300	5.8	4.7	6.7%	6.5%	4.7%	7.1	1.0-8.0	46.0-67.0
290-310	60.6	56.5	61.8%	60.4%	56.7%	62.7	49.0-65.0	
290-320	89.2	86.3	89.3%	87.5%	86.8%	89.0	85.0-90.0	80.0-91.0
290-330	94.3	92.1	94.1%	93.1%	92.5%	93.9	91.5-95.5	86.5-95.5
290-340	96.3	94.5	96.0%	95.6%	94.8%	95.8	94.0-97.0	90.5-97.0
290-350	97.7	96.5	97.4%	97.4%	96.7%	97.4	-	93.5-98.5
290-400	100.0	100.0	99.9%	100.0%	100.0%	100.0	99.9-100	93.5-100.0
<b>Ratios (%)</b>								
UVAII/UV	26.5	23.3	25.3	30.2%	25.3	24.6	≥20	-
UVAI/UV	62.0	68.0	64.6	60.9%	64.6	65.4	≥60	-
<b>Absolute Values</b>								
Total Power (mw/cm <sup>2</sup> )	98	111	96	128	138	147	<150	<150

Lamps were calibrated using an Optronic Laboratories OL754 spectroradiometer and total power was measured using an International Light Technologies SED624 #616 thermopile (Calibration certificates attached). All lamps comply with the International SPF Test Method of 2006 [1] and the FDA Proposed Amendment of August 2007 [2]. The radiometers associated with each lamp were calibrated on the same date as the lamp using the above ratios and total power measurements.

Joseph W. Stanfield, President

Date

### References

1. Cosmetic, Toiletries and Fragrances Association of South Africa, The Cosmetics, Toiletries and Fragrances Association (CTFA-US), The European Cosmetic, Toiletry and Perfumery Association (COLIPA), Japan Cosmetics Industry Association (JCIA), International Sun Protection Factor (SPF) Test Method, May 2006.
2. U. S. Food and Drug Administration. Sunscreen Drug Products for Over-the-Counter Human Use; Proposed Amendment of Final Monograph; Proposed Rule; 21CFR Parts 347 and 352. Federal Register 72 (165) August 27, 2007. 49070-49122.



## INSTRUMENT SERVICE/REPAIR REPORT

REPAIR NO: 12201

Page 1 of 2

DATE RECEIVED IN HOUSE: 7/24/2007

PROJECT NO: 911-453

MODEL:	SERIAL NO:
754-C	99705097
754-O-PMT	99203096
IS-670	99100149
752-150	99203135

OWNER:
Suncare Research Laboratories Joe Stanfield 336-725-6501 - tel
Warranty : No

### SYMPTOMS:

The OL 754 system was sent in for system tune-up. The OL 752-10E was submitted for recalibration with existing lamp. The OL 65A was submitted for recalibration.

### ANALYSIS:

**OL 754-C:** All functions were tested and no defects were found.

**OL 754-O-PMT:** The optical components were inspected. The flat mirror was damaged and requires replacement. The second order blocking filters were dirty. The lead screw was out of alignment, excess grease on the lead screw, applied by customer, which caused grease to spread to surrounding components. It is required to disassemble and clean the mechanical drive assembly.

**OL IS-670:** The integrating sphere's coating had several digs around the port and the baffle coating was detached. The sphere and baffle require recoating.

**OL 752-150:** The unit was inspected and deemed in good condition.

**OL 752-10E:** The unit was inspected and deemed in good condition.

**OL 65A:** The current source was inspected and no defects were found. The current source was received out of tolerance of published specifications. The error recorded for 6.5 amperes was +0.0165%. The last calibration date recorded in the OL 65A is May 24, 2005.

### REPAIRS MADE:

**OL 754-C:** The HV programming D/A converter and the signal acquisition A/D converter were calibrated. The amplifier linearity, detector dark current and noise were evaluated for performance to specifications.

**OL 754-O-PMT:** The mechanical drive assembly was cleaned, degreased and re-aligned. The flat mirror was replaced and re-aligned. The second-order blocking filters were removed and cleaned. The optical path was aligned and the wavelength scale was calibrated to specification.

*Light Measurement & Instrumentation*

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**REPAIRS MADE (Continued):**

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**OL 754 System:** A complete system checkout was performed which included:

1. Wavelength stability testing.
2. Signal stability testing.
3. Vibrational testing.
4. System efficiency and response.

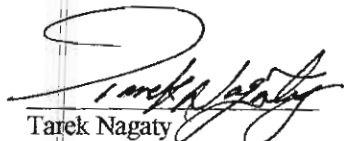
**OL IS-670:** The integrating sphere and baffle were recoated.

**OL 752-10E:** A spectral response calibration was performed (250 nm - 800 nm) with the existing lamp (refer to the report of calibration). The amount of time used on the lamp is noted in the report of calibration.

**OL 65A:** An OL 65A recalibration procedure was performed and a certificate of conformance is provided.

**Note:** A spectral irradiance response calibration (250 nm - 800 nm @ 2 nm intervals) was performed (refer to the attached table and supplied CD). OL recommends that the OL 65A be calibrated annually.

**ACCESSORIES RECEIVED WITH INSTRUMENT:** (1) 0.25 mm slit installed in the monochromator, standards adapter, (2) control cables, (1) power cable, and (1) lamp cable.

  
Tarek Nagaty  
Systems Lab Supervisor

**DATE COMPLETED: 08/31/2007**

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