

INSTRUMENT TEST REPORT (PAPI UNIT PARAMETERS MEASUREMENT)

COLLECTIVE TEST DATA

Test Laboratory: Intertek, Cortland NY

Intertek project number: G100147381

Date: 07/21/2010

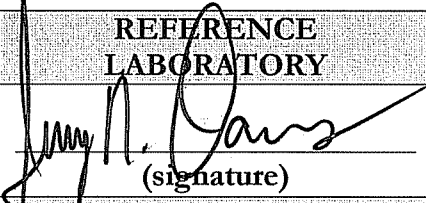
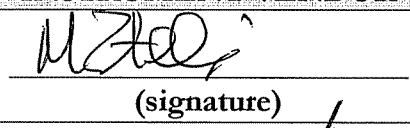
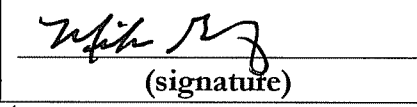
Operator: Jeremy Downs / Mario Zitelli

PAPI fitting type: New Bedford Panoramex DTFA01-93-Y-01022

Measuring instrument type: ARGOS INGEGNERIA SPA SMF/PAPI S/N AA0012

	PASS	FAIL	REFERENCE TEST REPORTS	
Accuracy - Test #1	X		Test #1 Measurement Report	Date: 07/21/2010
Precision - Test #2	X		Test #2 Measurement Report	Date: 07/21/2010
Precision - Test #3	X		Test #3 Measurement Report	Date: 07/21/2010
Colour - Test #4	X		Test #4 Measurement Report	Date: 07/22/2010
Intensity - Test #5	X		Test #5 Measurement Report	Date: 07/21/2010

	DESCRIPTION	MEASUREMENT DATA			
Accuracy - Test #1	Comparison with Reference Lab	Correlation			
		0.00.33 (33 arcsec)			
Precision - Test #2	Stable measuring point	Average Value		STD deviation (1σ)	
		3.19.45		0.00.13 (13 arcsec)	
Precision - Test #3	Variable measuring point	Average Value		STD deviation (1σ)	
		2.59.54		0.00.43	
Color - Test #4	Comparison with Reference Instrument	Correlation			
		x - white	y - white	x - red	y - red
		0.01	0.01	0.01	0.01
Intensity - Test #5	Comparison with Reference Instrument	Correlation			
		White Area		Red Area	
		8.3 %		8.4 %	

REFERENCE LABORATORY	MEASURING INSTRUMENT VENDOR	WITNESSED BY INTERTEK
 (signature)	 (signature)	 (signature)
DATE	7/22/10	
PLACE	Cortland NY - USA	

TEST #1 MEASUREMENT REPORT

PAPI UNIT VERTICAL COLOR TRANSITION ANGLE

Accuracy Test (by Comparison with Reference Lab)

(This form is to be completed during or just after the test)

Test Laboratory: Intertek, Cortland NY

Intertek project number: G100147381

Date: 07/21/2010

Operator: Jeremy Downs / Mario Zitelli

PAPI fitting type: New Bedford Panoramex DTFA01-93-Y-01022

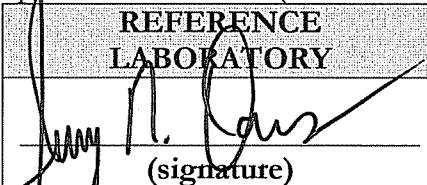
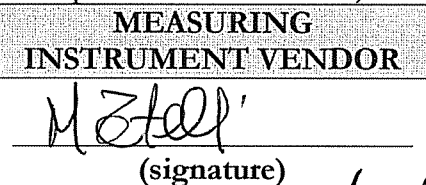
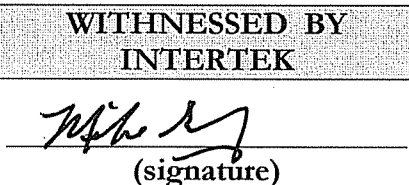
Measuring instrument type: ARGOS INGEGNERIA SPA SMF/PAPI S/N AA0012

Reference colour transition angle: 3.19.12

Measurement distance: 11.1 m

	REFERENCE LABORATORY *	INSTRUMENT MEASURED DATA	TIME
Measurement #01	3.19.12	3.19.24	10:30
Measurement #02		3.19.30	
Measurement #03		3.19.41	
Measurement #04		3.19.53	
Measurement #05		3.19.59	
Measurement #06		3.19.35	
Measurement #07		3.19.42	
Measurement #08		3.19.48	
Measurement #09		3.20.03	
Measurement #10		3.19.58	
Average value	3.19.12	3.19.45	
Standard deviation (1σ)		0.00.13	
Accuracy	0.00.36	0.00.33	
Note	1. The reference angle was given by an Optronik Model SMS 10h Goniophotometer calibrated on 10/14/09 and found compliant with ECE and SAE regulations. 2. NBP Test PAPI was focused using the SMF/PAPI test system.		

*Only the *Average Value* row is to be filled in the case of a single measurement or a PAPI unit set to a precise reference tilt (condition to be reported in the *Note* field).

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PLACE	Cortland NY - USA	

TEST #2 MEASUREMENT REPORT PAPI UNIT VERTICAL COLOR TRANSITION ANGLE

Precision Test (from stable measuring point)

(This form is to be completed during or just after the test)

Test Laboratory: Intertek, Cortland NY

Intertek project number: G100147381

Date: 07/21/2010

Operator: Jeremy Downs / Mario Zitelli

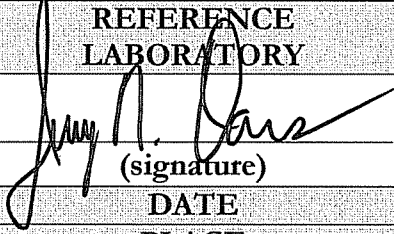
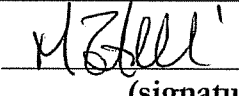
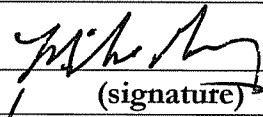
PAPI fitting type: New Bedford Panoramex DTFA01-93-Y-01022

Measuring instrument type: ARGOS INGEGNERIA SPA SMF/PAPI S/N AA0012

Reference colour transition angle: 3.19.12

Measurement distance: 11.1 m

	MEASURED DATA	MEASUREMENT TIME
Measurement #01	3.19.24	10:30
Measurement #02	3.19.30	
Measurement #03	3.19.41	
Measurement #04	3.19.53	
Measurement #05	3.19.59	
Measurement #06	3.19.35	
Measurement #07	3.19.42	
Measurement #08	3.19.48	
Measurement #09	3.20.03	
Measurement #10	3.19.58	
Average value		
	3.19.45	
Standard deviation (1σ)		
	0.00.13	
Note	NBP Test PAPI was focused using the SMF/PAPI system.	

REFERENCE LABORATORY	MEASURING INSTRUMENT VENDOR	WITNESSED BY INTERTEK
 (signature)	 (signature)	 (signature)
DATE	7/22/10	
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TEST #3 MEASUREMENT REPORT

PAPI UNIT VERTICAL COLOR TRANSITION ANGLE

Precision Test (from variable measuring point)

(This form is to be completed during or just after the test)

Test Laboratory: Intertek, Cortland NY

Intertek project number: G100147381

Date: 07/21/2010

Operator: Jeremy Downs / Mario Zitelli

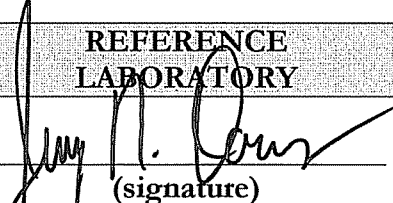
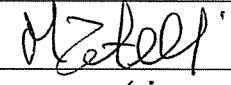

PAPI fitting type: New Bedford Panoramex DTFA01-93-Y-01022

Measuring instrument type: ARGOS INGEGNERIA SPA SMF/PAPI S/N AA0012

Reference colour transition angle: 2.58.48

Measurement distance: 11.1 m

	MEASURED DATA	MEASUREMENT TIME	APPLIED MOVEMENT
Measurement #01	2.59.46	11:41	NA
Measurement #02	3.00.28	11:48	Backward 45 cm
Measurement #03	2.59.58	11:51	Right 21 cm
Measurement #04	3.00.10	11:55	Left 39 cm
Measurement #05	3.00.13	11:59	Forward 40 cm
Measurement #06	3.00.17	12:06	Tripod right leg -5 cm
Measurement #07	3.00.25	12:12	Tripod left leg -4 cm
Measurement #08	3.00.29	12:15	Tripod front leg -5 cm
Measurement #09	2.58.49	12:19	Right 51 cm
Measurement #10	2.58.24	12:22	Backward 40 cm
Average value	2.59.54		
Standard deviation (1σ)	0.00.43		
Note	PAPI unit optical transverse tilt is 1.5° according to SMF/PAPI instrument		

REFERENCE LABORATORY	MEASURING INSTRUMENT VENDOR	WITNESSED BY INTERTEK
 (signature)	 (signature)	 (signature)
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TEST # 4 MEASUREMENT REPORT

PAPI UNIT LIGHT COLOURS

CIE 1931 Measurement Test by comparison with Reference Instrument

(This form is to be completed during or just after the test)

Test Laboratory: Intertek, Cortland NY

Intertek project number: G100147381

Date: 07/21 - 22/2010

Operator: Jeremy Downs / Mario Zitelli

PAPI fitting type: New Bedford Panoramex DTFA01-93-Y-01022

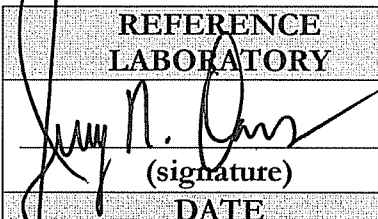
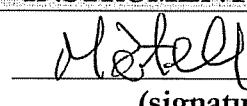
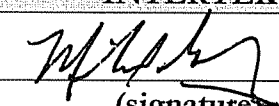
Measuring instrument type: ARGOS INGEGNERIA SPA SMF/PAPI S/N AA0012

Reference colour vertical measurement angles: 1.1 (white); -1.2 (red)

Measurement distance: 11 m

	REFERENCE INSTRUMENT		INSTRUMENT MEASURED DATA	
	x	y	x	y
WHITE	0.4446	0.4120	0.45	0.40
RED	0.6709	0.3288	0.66	0.34
WHITE			0.45	0.40
RED			0.66	0.34
WHITE			0.45	0.40
RED			0.66	0.34
WHITE			0.45	0.40
RED			0.66	0.34
WHITE Average	0.4446	0.4120	0.45	0.40
WHITE STD.DEV (1 σ)			0	0
WHITE Accuracy			0.01	0.01
RED Average	0.6709	0.3288	0.66	0.34
RED STD.DEV (1 σ)			0	0
RED Accuracy			0.01	0.01
Note	1. The reference chromaticity coordinates are given by an Optronics Laboratories Model 750D Spectral radiometer calibrated on 6/7/10 control number E288 .			

*Only the *Average Value* row is to be filled in the case of a single measurement or a PAPI unit set to a precise reference tilt (condition to be reported in the *Note* field).

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 (signature)	 (signature)	 (signature)
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PLACE	Cortland NY - USA	

TEST # 5 MEASUREMENT REPORT PAPI UNIT LIGHT INTENSITY

Candelas Measurement Test by comparison with Reference Instrument

(This form is to be completed during or just after the test)

Test Laboratory: Intertek, Cortland NY

Intertek project number: G100147381

Date: 07/21/2010

Operator: Jeremy Downs / Mario Zitelli

PAPI fitting type: New Bedford Panoramex DTFA01-93-Y-01022

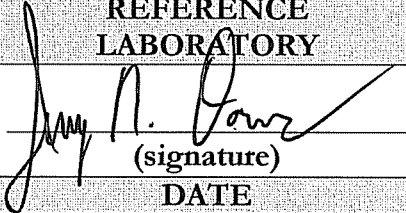

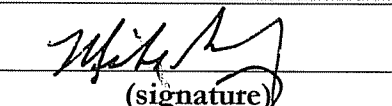
Measuring instrument type: ARGOS INGEGNERIA SPA SMF/PAPI S/N AA0012

Reference intensity vertical measurement angles: 1.1 (white); -1.2 (red)

Measurement distance: 11 m

	REFERENCE INSTRUMENT *		INSTRUMENT MEASURED DATA	
	White CD	Red CD	White CD	Red CD
Measurement # 1	31700	8600	34054	9294
Measurement # 2			34132	9387
Measurement # 3			33865	9301
Measurement # 4			34684	9256
Measurement # 5			34642	9248
Measurement # 6			34157	9346
Measurement # 7			34297	9258
Measurement # 8			34504	9346
Measurement # 9			34758	9399
Measurement # 10			34499	9426
Average value	31700	8600	34359	9326
Standard deviation (1 σ)			302	64
Accuracy			2659 (8.3%)	726 (8.4%)
Notes	1. The reference intensity measurements were given by an Optronik Model SMS 10h Goniophotometer calibrated on 10/14/09 control number O109.			

*Only the *Average Value* row is to be filled in the case of a single measurement or a PAPI unit set to a precise reference tilt (condition to be reported in the *Note* field).

REFERENCE LABORATORY	MEASURING INSTRUMENT VENDOR	WITNESSED BY INTERTEK
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