

Light Measurement Report

Print date: 22/02/2023

Measurement date and time: 22/02/2023 10:59:33 – Measurement no. VFR-230222-3042-MS

Measurement tracking No. and Link: [VT230222-008265](#)

Operator:



Laboratory and Equipment

Laboratory Owner and Location
Goniospectrometer System and Type
Sensor Name, Calibr. Date and Serial No.
Spectrometer Manufacturer and Model

DVT Light, Randers SV, Denmark
LabSpion – Type C, horizontal
LabSensor Model2 – 15/01/2021 – 3482137104
Ibsen Photonics, Denmark – Freedom VIS (Custom Viso)

Measurement Conditions

Number of C-planes and Resolution
 γ (gamma)-Resolution
Test Distance
Input Power, Power and Displ. Factors
Input RMS Voltage and Current
Frequency of Input Power
Warm-up Time and Variation

2 planes – 180°
5°
3,23 m
248,2 W – PF 0,93 – DPF 0,95
223 V – 1,20 A
50 Hz
n/a – n/a%

Tested Light Source

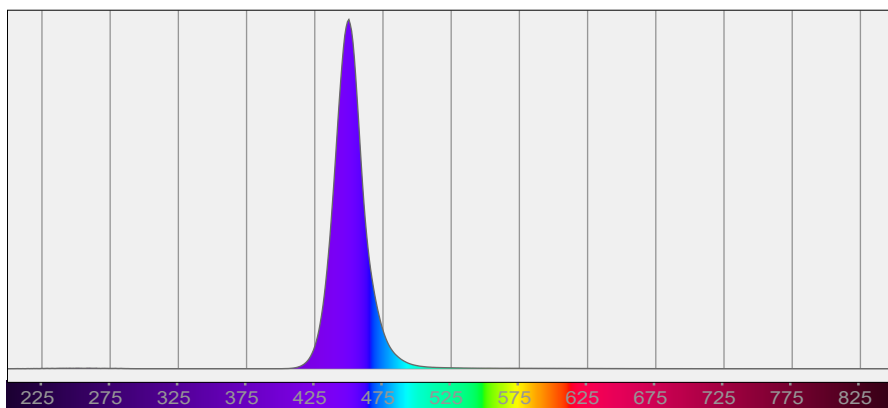
Product Name
Item No. and Manufacturer
Product Description (line 1)

PJ-5 narrow Blue
– DVT Light

Main Light Measurement Results

Output – Total Lumen (Up% / Down%)
Efficiency
Peak Intensity and Beam Angle
Correlated Color Temperature, Target/Measured
Color Rendering Index
Color Rendering TM30-18
Color Shift, CIE duv and MacAdam Steps
Flicker

2277 lm – 0% / 100%
9 lm/W
35032 cd – 12,5°
CCT = 0 K / 0 K
CRI 0,0
R_f 0,0 – R_g 0,0
Duv n/a – SDCM n/a
SVM n/a – PstLM n/a



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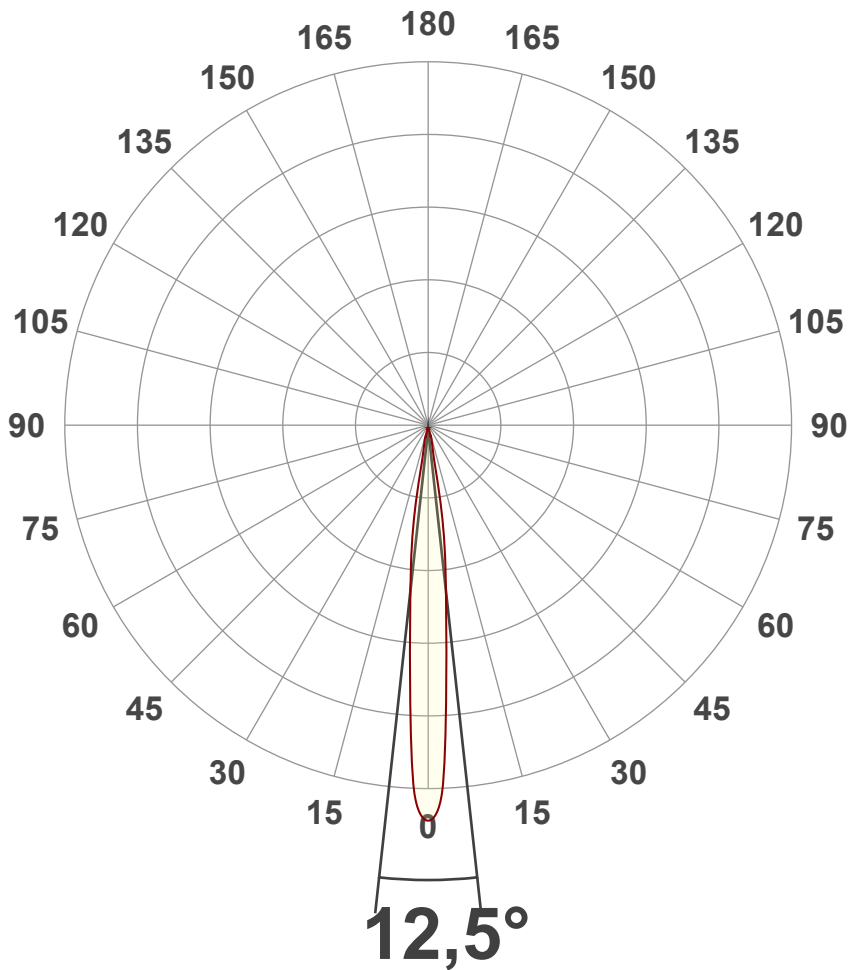
Measurement tracking No. and Link: [VT230222-008265](#)

Operator:



Luminous Intensity diagram

Unit: 0-100% of peak intensity



Main Values

Output (total Lumen)	2277 lm
Lumen Up% / Down%	0% / 100%
Peak Intensity	35032 cd
Beam Angle (50%)	12,5°
Beam Angle (90%)	12,5°
Beam Angle (10%)	12,5°

Cut-off Angle

Average 2,5%	33°
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Field Angle

Average 10%	23,2°
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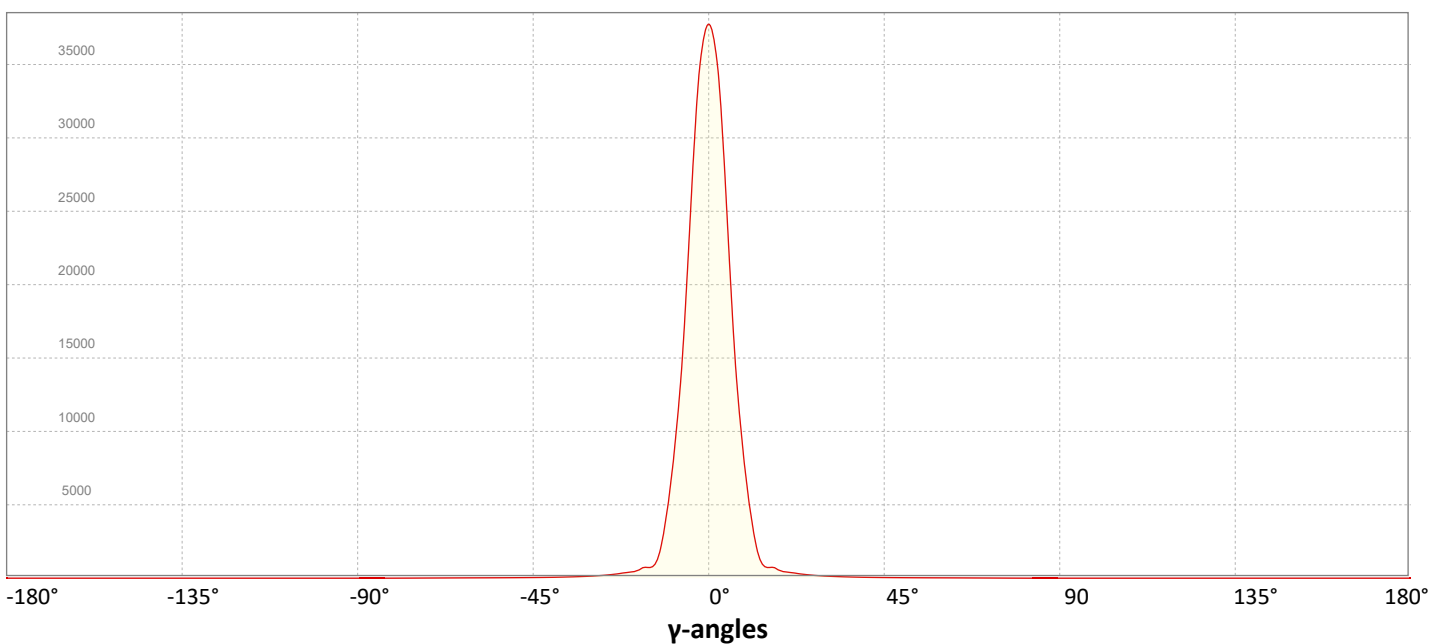
Intensity Ratio

In 120° cone	98,9%
In 90° cone	97,2%

C000-C180

C090-C270

Linear distribution diagram - Intensity (candela) vs γ -angle



Light Measurement Report

Print date: 22/02/2023

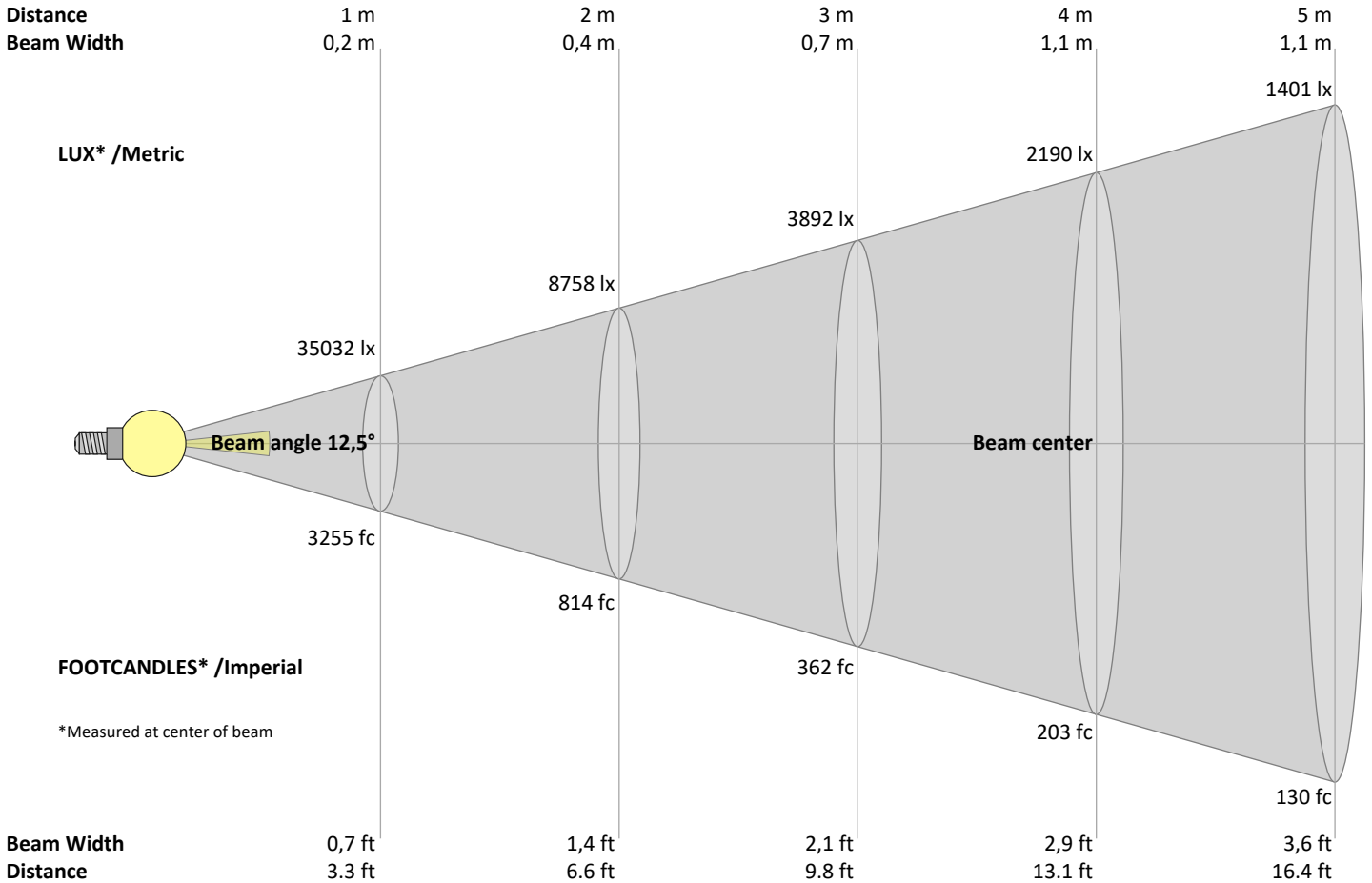
Measurement date and time: 22/02/2023 10:59:33 – Measurement no. VFR-230222-3042-MS

Measurement tracking No. and Link: [VT230222-008265](https://www.dvt-light.com/VT230222-008265)

Operator:



Beam Details



Beam intensities from 1 – 20 m

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	m
3,3	6,6	9,8	13,1	16,4	19,7	23	26,2	29,5	32,8	36,1	39,4	42,7	45,9	49,2	52,5	55,8	59,1	62,3	65,6	ft
35032	8758	3892	2190	1401	973	715	547	432	350	290	243	207	179	156	137	121	108	97	88	lux
3254,6	813,7	361,6	203,4	130,2	90,4	66,4	50,9	40,2	32,5	26,9	22,6	19,3	16,6	14,5	12,7	11,3	10	9	8,1	fc

Intensities in 0° c-plane

0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°	γ
35,0K	35,0K	35,0K	31,6K	27,2K	22,9K	18,6K	14,2K	11,6K	9,3K	7,1K	4,9K	2,6K	1,9K	1,6K	1,3K	1,0K	0,7K	0,6K	0,5K	cd
100%	100%	100%	90%	78%	65%	53%	41%	33%	27%	20%	14%	7%	6%	5%	4%	3%	2%	2%	2%	of 0°val

Intensities in 90° c-plane

0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°	γ
35,0K	35,0K	35,0K	31,6K	27,2K	22,9K	18,6K	14,2K	11,6K	9,3K	7,1K	4,9K	2,6K	1,9K	1,6K	1,3K	1,0K	0,7K	0,6K	0,5K	cd
100%	100%	100%	90%	78%	65%	53%	41%	33%	27%	20%	14%	7%	6%	5%	4%	3%	2%	2%	2%	of 0°val

Intensities in 180° c-plane

0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°	γ
35,0K	35,0K	35,0K	31,6K	27,2K	22,9K	18,6K	14,2K	11,6K	9,3K	7,1K	4,9K	2,6K	1,9K	1,6K	1,3K	1,0K	0,7K	0,6K	0,5K	cd
100%	100%	100%	90%	78%	65%	53%	41%	33%	27%	20%	14%	7%	6%	5%	4%	3%	2%	2%	2%	of 0°val

Intensities in 270° c-plane

0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°	γ
35,0K	35,0K	35,0K	31,6K	27,2K	22,9K	18,6K	14,2K	11,6K	9,3K	7,1K	4,9K	2,6K	1,9K	1,6K	1,3K	1,0K	0,7K	0,6K	0,5K	cd
100%	100%	100%	90%	78%	65%	53%	41%	33%	27%	20%	14%	7%	6%	5%	4%	3%	2%	2%	2%	of 0°val

Light Measurement Report

Print date: 22/02/2023

Measurement date and time: 22/02/2023 10:58:18 – Measurement no. VFR-230222-3041-MS

Measurement tracking No. and Link: [VT230222-007733](#)

Operator:



Laboratory and Equipment

Laboratory Owner and Location
Goniospectrometer System and Type
Sensor Name, Calibr. Date and Serial No.
Spectrometer Manufacturer and Model

DVT Light, Randers SV, Denmark
LabSpion – Type C, horizontal
LabSensor Model2 – 15/01/2021 – 3482137104
Ibsen Photonics, Denmark – Freedom VIS (Custom Viso)

Measurement Conditions

Number of C-planes and Resolution
 γ (gamma)-Resolution
Test Distance
Input Power, Power and Displ. Factors
Input RMS Voltage and Current
Frequency of Input Power
Warm-up Time and Variation

2 planes – 180°
5°
3,23 m
279,2 W – PF 0,93 – DPF 0,95
223 V – 1,34 A
50 Hz
Not completed – 2,0%

Tested Light Source

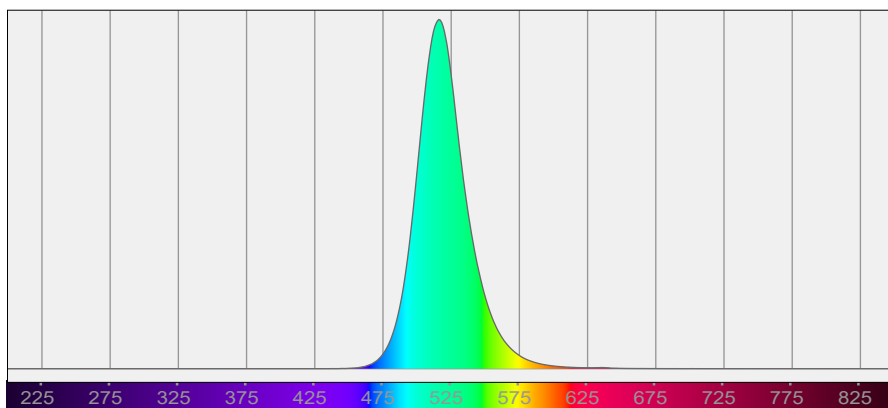
Product Name
Item No. and Manufacturer
Product Description (line 1)

PJ-5 narrow Green
– DVT Light

Main Light Measurement Results

Output – Total Lumen (Up% / Down%)
Efficiency
Peak Intensity and Beam Angle
Correlated Color Temperature, Target/Measured
Color Rendering Index
Color Rendering TM30-18
Color Shift, CIE duv and MacAdam Steps
Flicker

8893 lm – 0% / 100%
32 lm/W
121825 cd – 13,9°
CCT = 0 K / 0 K
CRI 0,0
 R_f 0,0 – R_g 0,0
Duv n/a – SDCM n/a
SVM n/a – PstLM n/a



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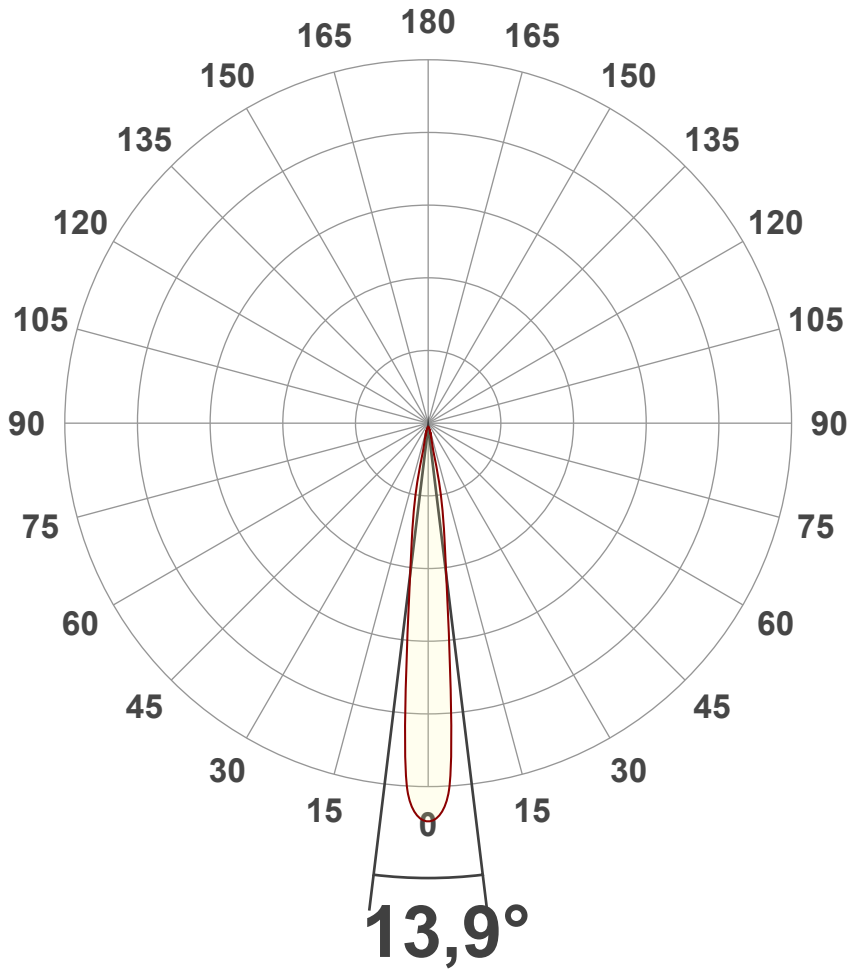
Measurement tracking No. and Link: [VT230222-007733](#)

Operator:



Luminous Intensity diagram

Unit: 0-100% of peak intensity



Main Values

Output (total Lumen)	8893 lm
Lumen Up% / Down%	0% / 100%
Peak Intensity	121825 cd
Beam Angle (50%)	13,9°
Beam Angle (90%)	13,9°
Beam Angle (10%)	13,9°

Cut-off Angle

Average 2,5%	34°
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Field Angle

Average 10%	24,6°
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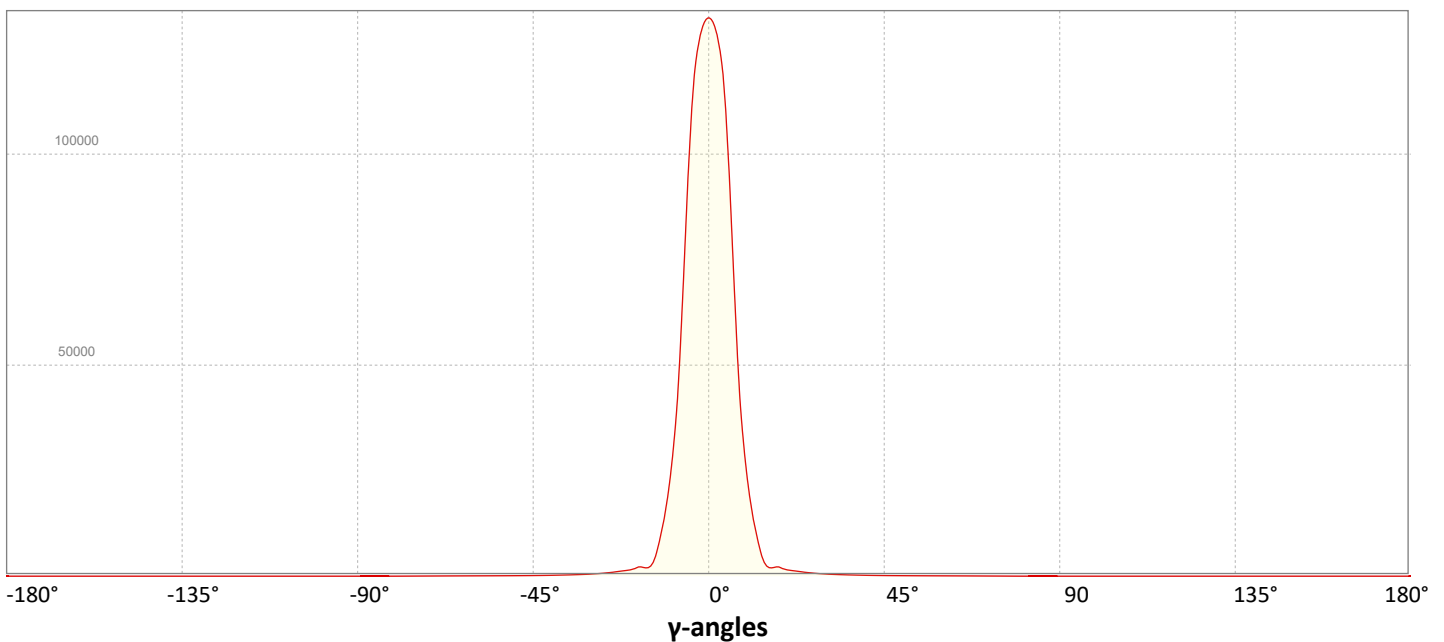
Intensity Ratio

In 120° cone	99,0%
In 90° cone	97,5%

C000-C180

C090-C270

Linear distribution diagram - Intensity (candela) vs γ -angle



Light Measurement Report

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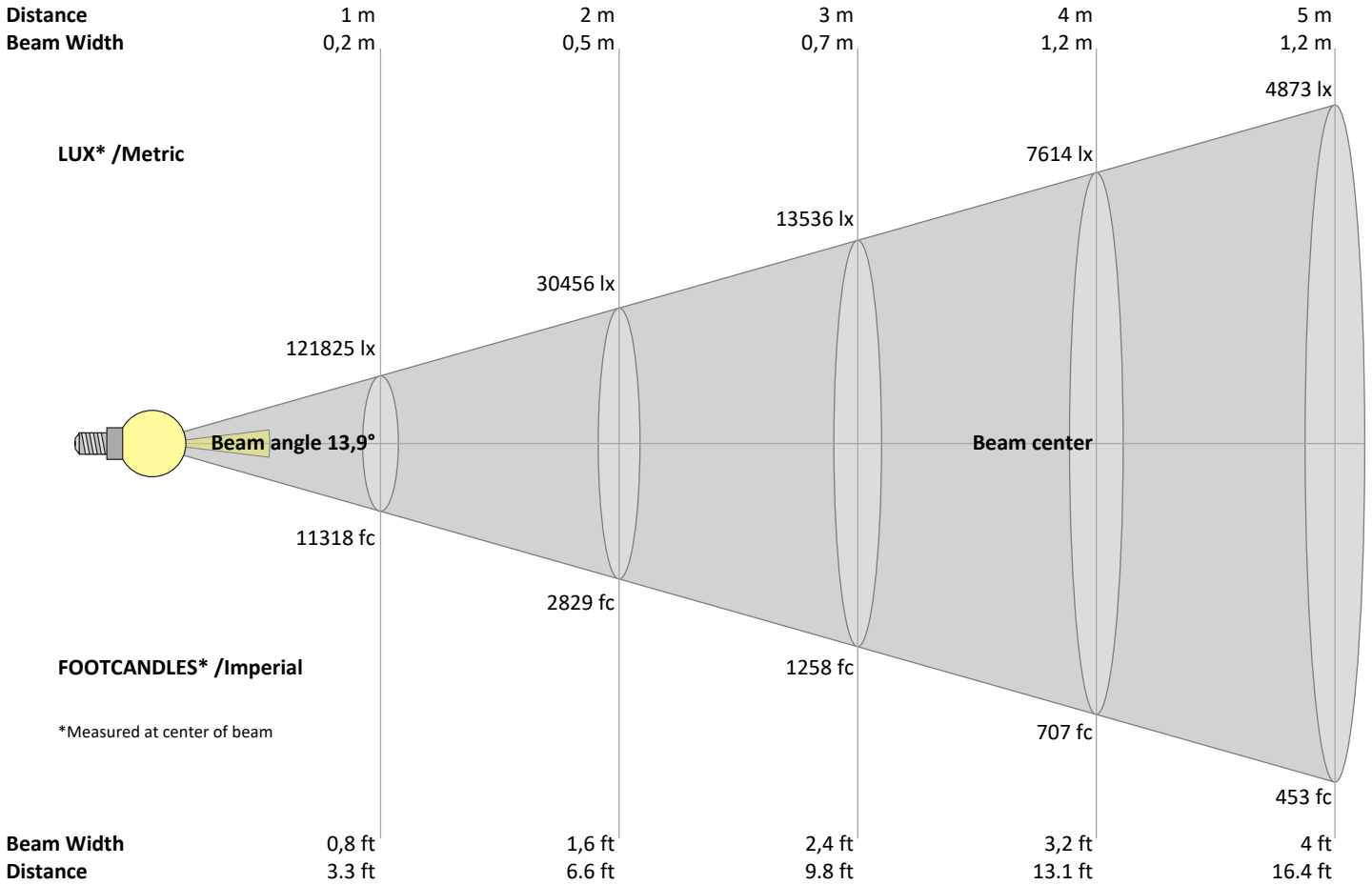
Measurement date and time: 22/02/2023 10:58:18 – Measurement no. VFR-230222-3041-MS

Measurement tracking No. and Link: [VT230222-007733](https://www.vfr.com/VT230222-007733)

Operator:



Beam Details



Beam intensities from 1 – 20 m

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	m
3,3	6,6	9,8	13,1	16,4	19,7	23	26,2	29,5	32,8	36,1	39,4	42,7	45,9	49,2	52,5	55,8	59,1	62,3	65,6	ft
121825	30456	13536	7614	4873	3384	2486	1904	1504	1218	1007	846	721	622	541	476	422	376	337	305	lux
11317,9	2829,5	1257,5	707,4	452,7	314,4	231	176,8	139,7	113,2	93,5	78,6	67	57,7	50,3	44,2	39,2	34,9	31,4	28,3	fc

Intensities in 0° c-plane

0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°	γ
122K	122K	122K	122K	110K	93K	77K	60K	43K	34K	27K	21K	14K	8K	5K	5K	4K	3K	2K	2K	cd
100%	100%	100%	100%	90%	77%	63%	49%	35%	28%	22%	17%	12%	6%	4%	4%	3%	2%	2%	2%	of 0°val

Intensities in 90° c-plane

0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°	γ
122K	122K	122K	122K	110K	93K	77K	60K	43K	34K	27K	21K	14K	8K	5K	5K	4K	3K	2K	2K	cd
100%	100%	100%	100%	90%	77%	63%	49%	35%	28%	22%	17%	12%	6%	4%	4%	3%	2%	2%	2%	of 0°val

Intensities in 180° c-plane

0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°	γ
122K	122K	122K	122K	110K	93K	77K	60K	43K	34K	27K	21K	14K	8K	5K	5K	4K	3K	2K	2K	cd
100%	100%	100%	100%	90%	77%	63%	49%	35%	28%	22%	17%	12%	6%	4%	4%	3%	2%	2%	2%	of 0°val

Intensities in 270° c-plane

0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°	γ
122K	122K	122K	122K	110K	93K	77K	60K	43K	34K	27K	21K	14K	8K	5K	5K	4K	3K	2K	2K	cd
100%	100%	100%	100%	90%	77%	63%	49%	35%	28%	22%	17%	12%	6%	4%	4%	3%	2%	2%	2%	of 0°val

Light Measurement Report

Print date: 22/02/2023

Measurement date and time: 22/02/2023 11:09:28 – Measurement no. VFR-230222-3048-MS

Measurement tracking No. and Link: [VT230222-008906](#)

Operator:



Laboratory and Equipment

Laboratory Owner and Location
Goniospectrometer System and Type
Sensor Name, Calibr. Date and Serial No.
Spectrometer Manufacturer and Model

DVT Light, Randers SV, Denmark
LabSpion – Type C, horizontal
LabSensor Model2 – 15/01/2021 – 3482137104
Ibsen Photonics, Denmark – Freedom VIS (Custom Viso)

Measurement Conditions

Number of C-planes and Resolution
 γ (gamma)-Resolution
Test Distance
Input Power, Power and Displ. Factors
Input RMS Voltage and Current
Frequency of Input Power
Warm-up Time and Variation

2 planes – 180°
5°
3,23 m
575 W – PF 0,96 – DPF 0,98
225 V – 2,67 A
50 Hz
n/a – n/a%

Tested Light Source

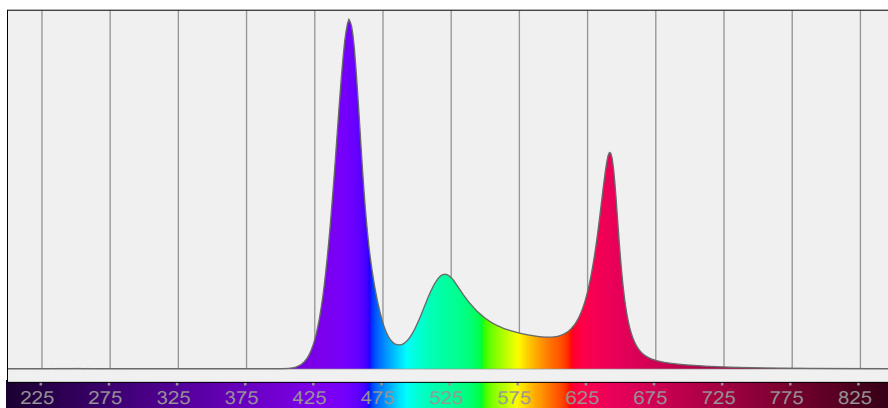
Product Name
Item No. and Manufacturer
Product Description (line 1)

PJ-5 Narrow raw white peak
– DVT Light

Main Light Measurement Results

Output – Total Lumen (Up% / Down%)
Efficiency
Peak Intensity and Beam Angle
Correlated Color Temperature, Target/Measured
Color Rendering Index
Color Rendering TM30-18
Color Shift, CIE duv and MacAdam Steps
Flicker

21553 lm – 0% / 100%
37 lm/W
327116 cd – 13,3°
CCT = 0 K / 0 K
CRI 0,0
R_f 0,0 – R_g 0,0
Duv n/a – SDCM n/a
SVM n/a – PstLM n/a



Light Measurement Report

Print date: 22/02/2023

Measurement date and time: 22/02/2023 11:09:28 – Measurement no. VFR-230222-3048-MS

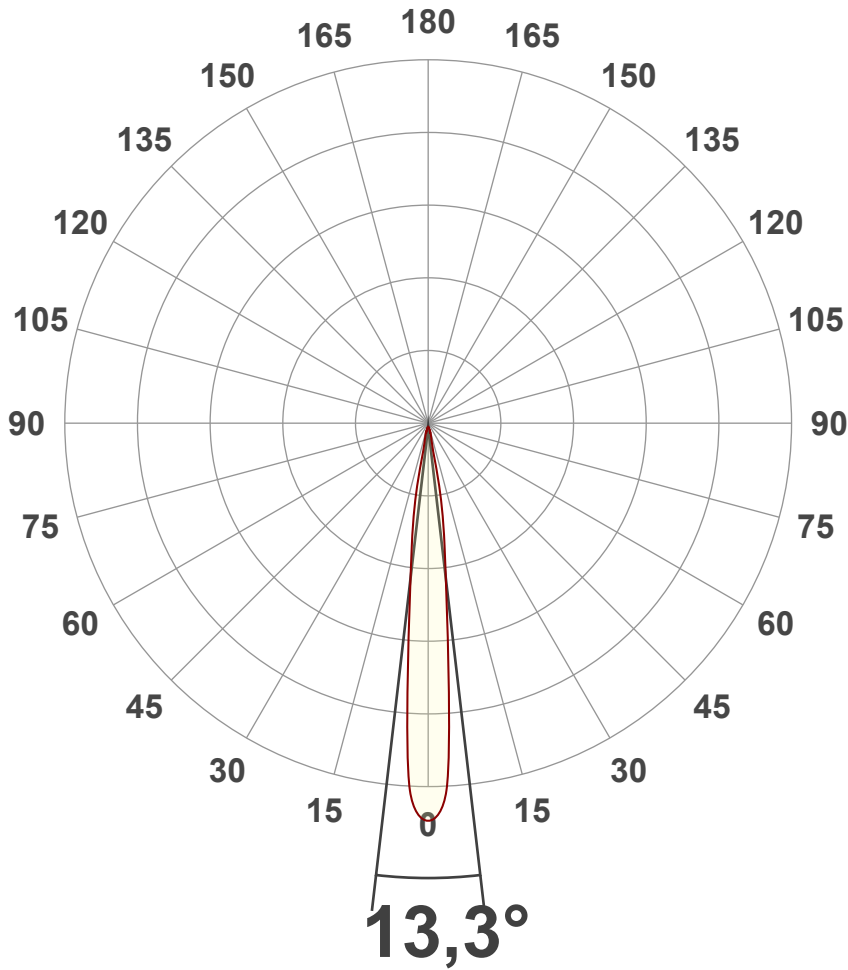
Measurement tracking No. and Link: [VT230222-008906](#)

Operator:



Luminous Intensity diagram

Unit: 0-100% of peak intensity



Main Values

Output (total Lumen)	21553 lm
Lumen Up% / Down%	0% / 100%
Peak Intensity	327116 cd
Beam Angle (50%)	13,3°
Beam Angle (90%)	13,3°
Beam Angle (10%)	13,3°

Cut-off Angle

Average 2,5%	32,8°
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Field Angle

Average 10%	23,9°
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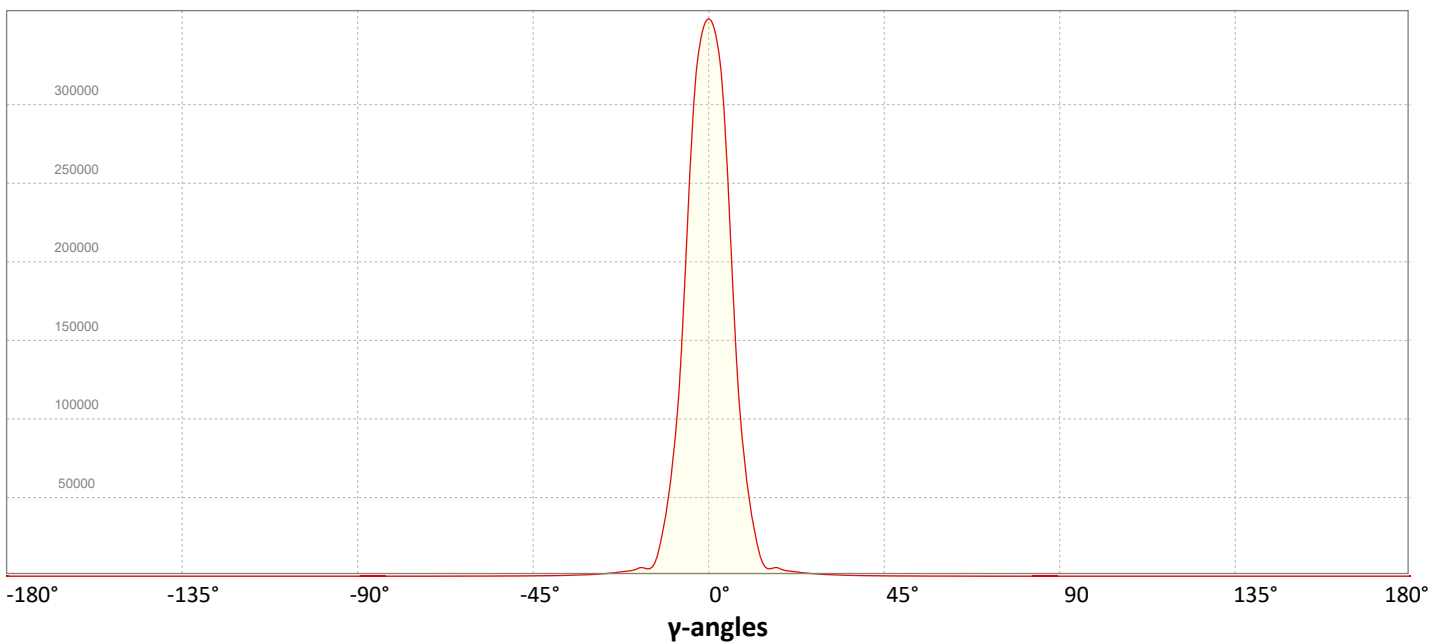
Intensity Ratio

In 120° cone	99,8%
In 90° cone	99,1%

C000-C180

C090-C270

Linear distribution diagram - Intensity (candela) vs γ -angle



Light Measurement Report

Print date: 22/02/2023

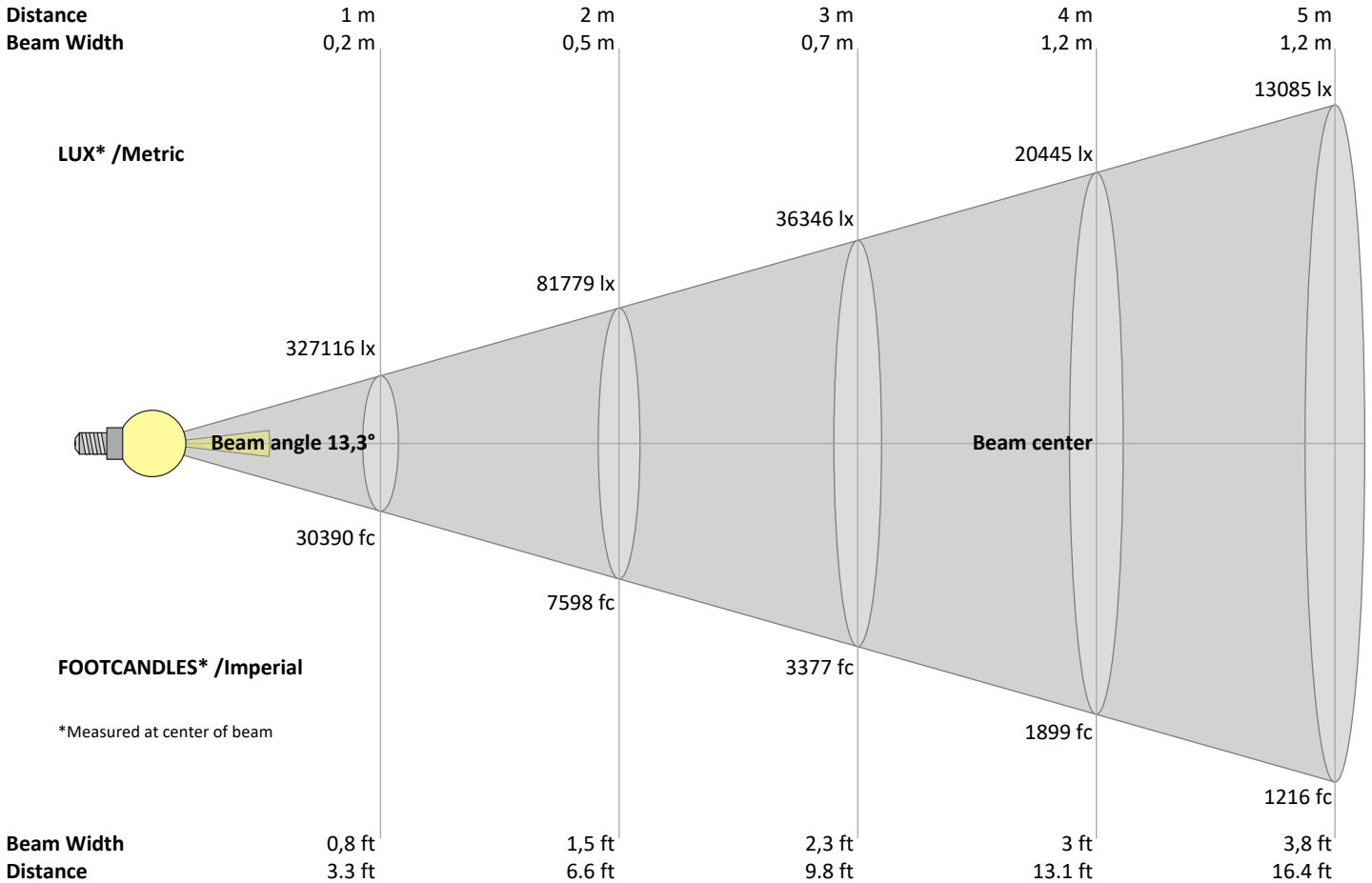
Measurement date and time: 22/02/2023 11:09:28 – Measurement no. VFR-230222-3048-MS

Measurement tracking No. and Link: [VT230222-008906](https://www.dvt-light.com/VT230222-008906)

Operator:



Beam Details



Beam intensities from 1 – 20 m

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	m
3,3	6,6	9,8	13,1	16,4	19,7	23	26,2	29,5	32,8	36,1	39,4	42,7	45,9	49,2	52,5	55,8	59,1	62,3	65,6	ft
327116	81779	36346	20445	13085	9087	6676	5111	4038	3271	2703	2272	1936	1669	1454	1278	1132	1010	906	818	lux
30390,1	7597,5	3376,7	1899,4	1215,6	844,2	620,2	474,8	375,2	303,9	251,2	211	179,8	155,1	135,1	118,7	105,2	93,8	84,2	76	fc

Intensities in 0° c-plane

0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°	γ
327K	327K	327K	323K	279K	235K	191K	147K	106K	88K	69K	51K	32K	15K	13K	11K	9K	7K	5K	5K	cd
100%	100%	100%	99%	85%	72%	58%	45%	32%	27%	21%	15%	10%	5%	4%	3%	3%	2%	2%	1%	of 0°val

Intensities in 90° c-plane

0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°	γ
327K	327K	327K	323K	279K	235K	191K	147K	106K	88K	69K	51K	32K	15K	13K	11K	9K	7K	5K	5K	cd
100%	100%	100%	99%	85%	72%	58%	45%	32%	27%	21%	15%	10%	5%	4%	3%	3%	2%	2%	1%	of 0°val

Intensities in 180° c-plane

0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°	γ
327K	327K	327K	323K	279K	235K	191K	147K	106K	88K	69K	51K	32K	15K	13K	11K	9K	7K	5K	5K	cd
100%	100%	100%	99%	85%	72%	58%	45%	32%	27%	21%	15%	10%	5%	4%	3%	3%	2%	2%	1%	of 0°val

Intensities in 270° c-plane

0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°	γ
327K	327K	327K	323K	279K	235K	191K	147K	106K	88K	69K	51K	32K	15K	13K	11K	9K	7K	5K	5K	cd
100%	100%	100%	99%	85%	72%	58%	45%	32%	27%	21%	15%	10%	5%	4%	3%	3%	2%	2%	1%	of 0°val

Light Measurement Report

Print date: 22/02/2023

Measurement date and time: 22/02/2023 10:56:34 – Measurement no. VFR-230222-3040-MS

Measurement tracking No. and Link: [VT230222-003201](#)

Operator:



Laboratory and Equipment

Laboratory Owner and Location
Goniospectrometer System and Type
Sensor Name, Calibr. Date and Serial No.
Spectrometer Manufacturer and Model

DVT Light, Randers SV, Denmark
LabSpion – Type C, horizontal
LabSensor Model2 – 15/01/2021 – 3482137104
Ibsen Photonics, Denmark – Freedom VIS (Custom Viso)

Measurement Conditions

Number of C-planes and Resolution
 γ (gamma)-Resolution
Test Distance
Input Power, Power and Displ. Factors
Input RMS Voltage and Current
Frequency of Input Power
Warm-up Time and Variation

2 planes – 180°
5°
3,23 m
213 W – PF 0,9 – DPF 0,92
224 V – 1,06 A
50 Hz
Not completed – 2,0%

Tested Light Source

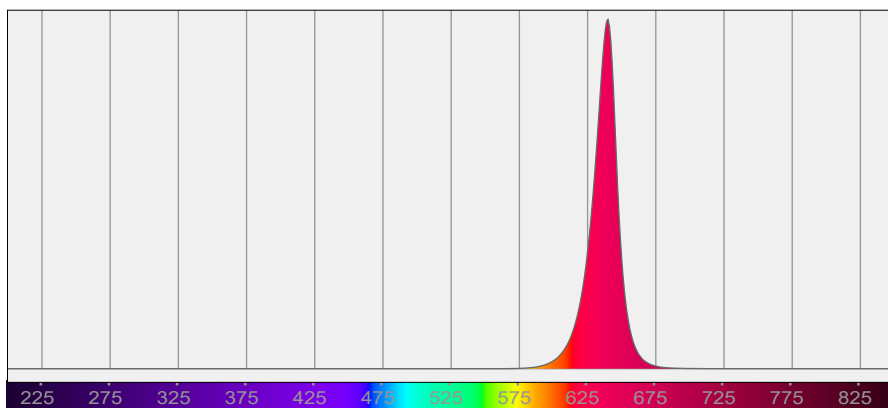
Product Name
Item No. and Manufacturer
Product Description (line 1)

PJ-5 narrow RED
– DVT Light

Main Light Measurement Results

Output – Total Lumen (Up% / Down%)
Efficiency
Peak Intensity and Beam Angle
Correlated Color Temperature, Target/Measured
Color Rendering Index
Color Rendering TM30-18
Color Shift, CIE duv and MacAdam Steps
Flicker

5312 lm – 0% / 100%
25 lm/W
75481 cd – 14°
CCT = 0 K / 0 K
CRI 0,0
 R_f 0,0 – R_g 0,0
Duv n/a – SDCM n/a
SVM n/a – PstLM n/a



Light Measurement Report

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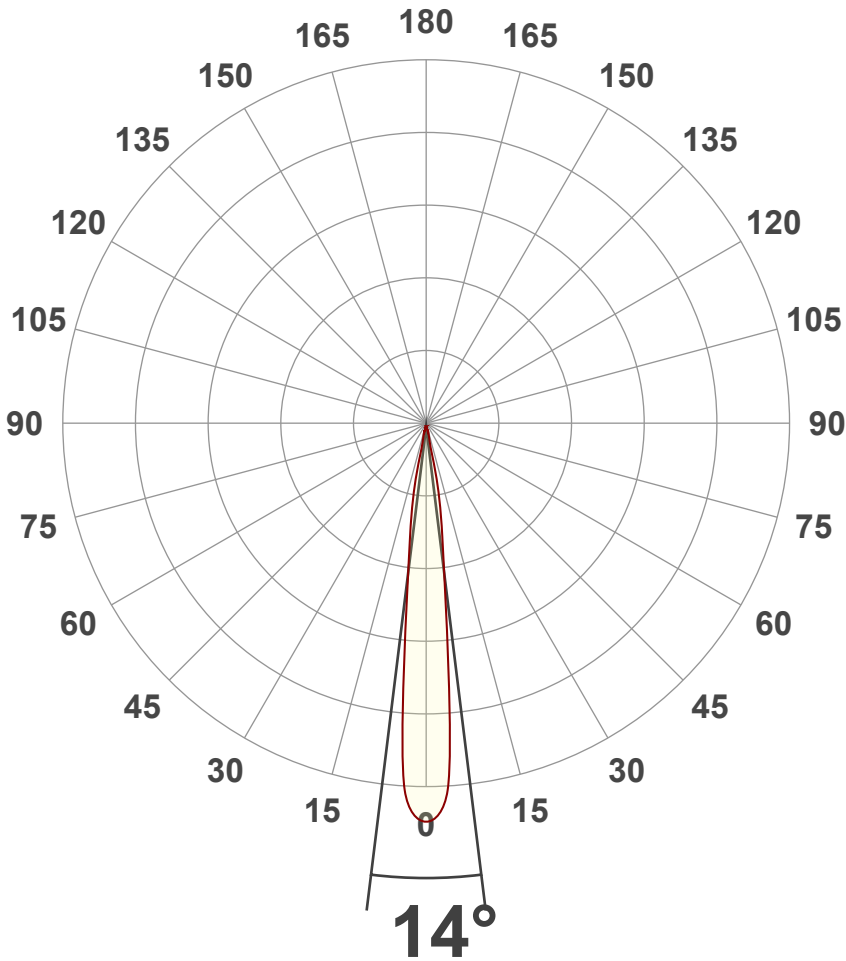
Measurement tracking No. and Link: [VT230222-003201](#)

Operator:



Luminous Intensity diagram

Unit: 0-100% of peak intensity



Main Values

Output (total Lumen)	5312 lm
Lumen Up% / Down%	0% / 100%
Peak Intensity	75481 cd
Beam Angle (50%)	14°
Beam Angle (90%)	14°
Beam Angle (10%)	14°

Cut-off Angle

Average 2,5%	32,6°
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Field Angle

Average 10%	24,6°
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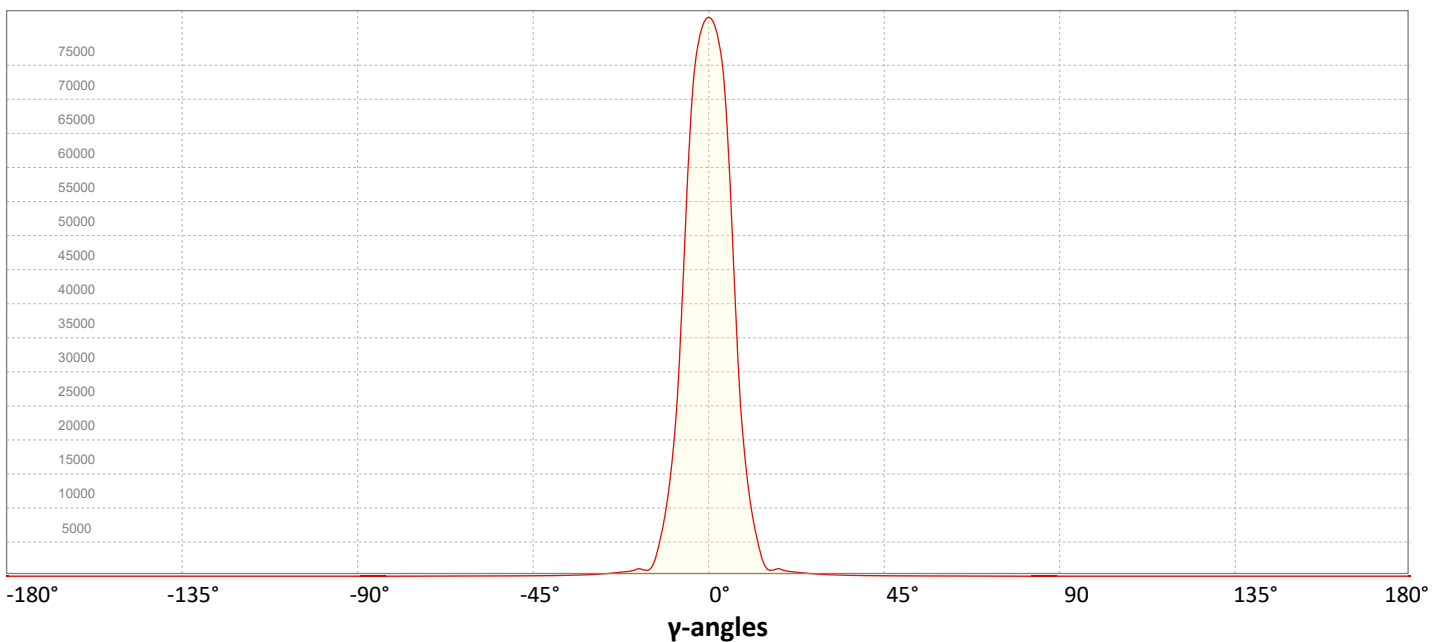
Intensity Ratio

In 120° cone	99,5%
In 90° cone	98,5%

C000-C180

C090-C270

Linear distribution diagram - Intensity (candela) vs γ -angle



Light Measurement Report

Print date: 22/02/2023

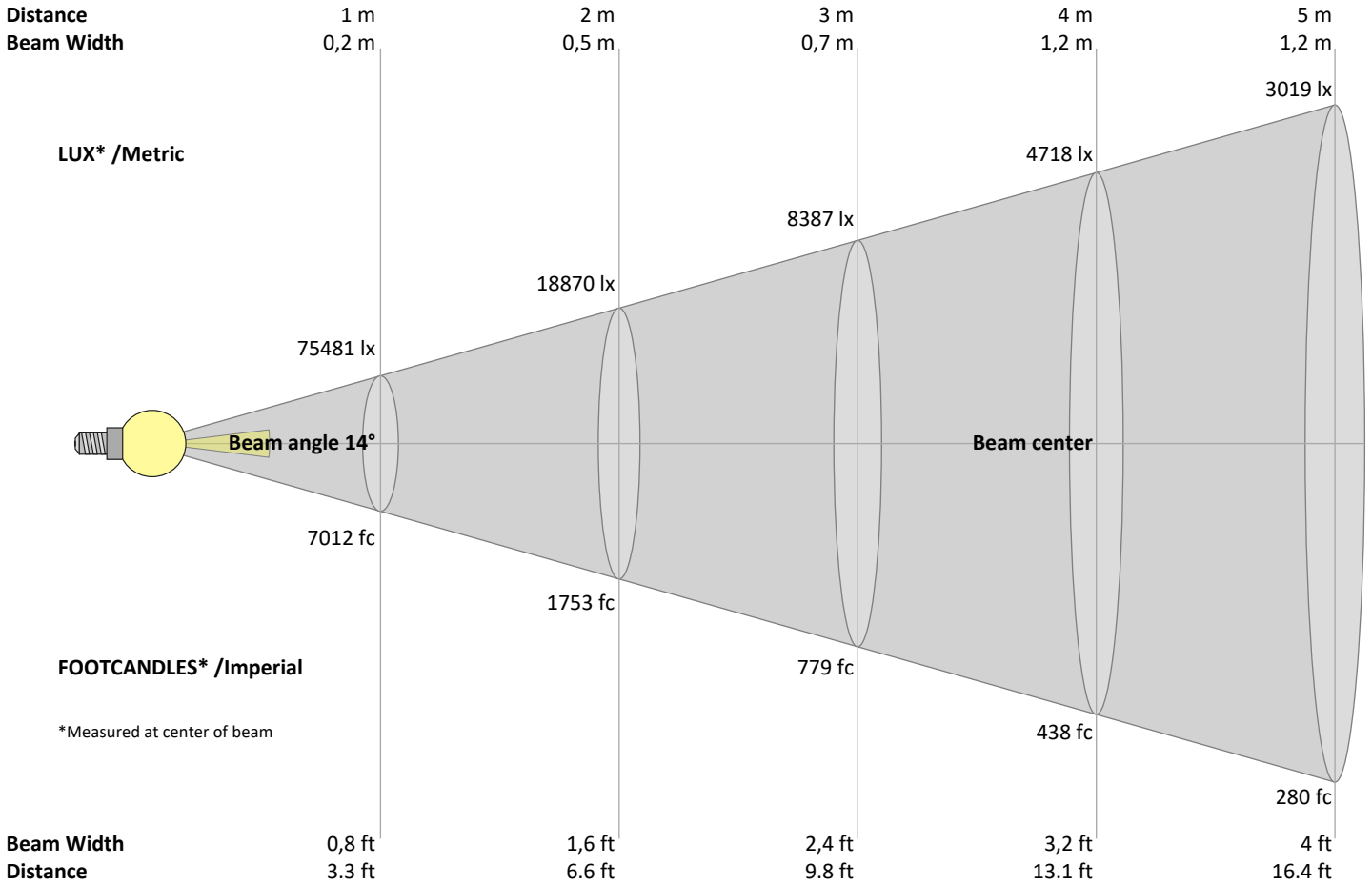
Measurement date and time: 22/02/2023 10:56:34 – Measurement no. VFR-230222-3040-MS

Measurement tracking No. and Link: [VT230222-003201](https://www.dvt-light.com/VT230222-003201)

Operator:



Beam Details



Beam intensities from 1 – 20 m

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	m
3,3	6,6	9,8	13,1	16,4	19,7	23	26,2	29,5	32,8	36,1	39,4	42,7	45,9	49,2	52,5	55,8	59,1	62,3	65,6	ft
75481	18870	8387	4718	3019	2097	1540	1179	932	755	624	524	447	385	335	295	261	233	209	189	lux
7012,4	1753,1	779,2	438,3	280,5	194,8	143,1	109,6	86,6	70,1	58	48,7	41,5	35,8	31,2	27,4	24,3	21,6	19,4	17,5	fc

Intensities in 0° c-plane

0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°	γ
75,5K	75,5K	75,5K	75,5K	69,3K	58,8K	48,4K	37,9K	27,4K	20,7K	16,7K	12,7K	8,7K	4,7K	2,8K	2,4K	2,0K	1,6K	1,2K	1,0K	cd
100%	100%	100%	100%	92%	78%	64%	50%	36%	27%	22%	17%	12%	6%	4%	3%	3%	2%	2%	1%	of 0°val

Intensities in 90° c-plane

0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°	γ
75,5K	75,5K	75,5K	75,5K	69,3K	58,8K	48,4K	37,9K	27,4K	20,7K	16,7K	12,7K	8,7K	4,7K	2,8K	2,4K	2,0K	1,6K	1,2K	1,0K	cd
100%	100%	100%	100%	92%	78%	64%	50%	36%	27%	22%	17%	12%	6%	4%	3%	3%	2%	2%	1%	of 0°val

Intensities in 180° c-plane

0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°	γ
75,5K	75,5K	75,5K	75,5K	69,3K	58,8K	48,4K	37,9K	27,4K	20,7K	16,7K	12,7K	8,7K	4,7K	2,8K	2,4K	2,0K	1,6K	1,2K	1,0K	cd
100%	100%	100%	100%	92%	78%	64%	50%	36%	27%	22%	17%	12%	6%	4%	3%	3%	2%	2%	1%	of 0°val

Intensities in 270° c-plane

0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°	γ
75,5K	75,5K	75,5K	75,5K	69,3K	58,8K	48,4K	37,9K	27,4K	20,7K	16,7K	12,7K	8,7K	4,7K	2,8K	2,4K	2,0K	1,6K	1,2K	1,0K	cd
100%	100%	100%	100%	92%	78%	64%	50%	36%	27%	22%	17%	12%	6%	4%	3%	3%	2%	2%	1%	of 0°val